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About UIM

This Help system explains how to use the Oracle Communications Unified Inventory Management (UIM) user interface to manage your telecommunications inventory.

This Help system provides step-by-step instructions related to the user interface. For a conceptual understanding of UIM, see *UIM Concepts*.

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1

Getting Started with Unified Inventory Management

You use Oracle Communications Unified Inventory Management (UIM) to model and manage your inventory. You can track resources, manage processes, and control service and resource life cycles.

Resources, such as physical devices, logical devices, telephone numbers, and network addresses, are represented in UIM as inventory entities. Because resources differ from each other, the various UIM entity types have specific features and capabilities. Resource entities can be related to each other in a number of ways, including parent-child relationships, dependencies, and enablement.

Business processes that organize or classify resources, such as business interactions or inventory groups, are also represented as entity types. These entity types can be related to resource entities and to each other in a variety of ways.

Entity types are defined by specifications that are created in Oracle Communications Service Catalog and Design - Design Studio. You import these specifications into UIM and then create and use them to create inventory entities. For example, a modeler can create a specification for a particular type of network interface card. In UIM, you can create entities based on that specification to represent cards that exist in your inventory.

UIM includes tools that enable you to create, search for, and configure entities. It also includes tools that you use to manage the application. See *UIM Concepts* for a more complete overview of the application concepts.

When getting started with UIM, see the following topics:

- Understanding UIM Terminology
- Working with the UIM User Interface
- Searching
- Viewing Recent Items
- Working with Favorites
- Working with Personalization

Understanding UIM Terminology

You should read *UIM Concepts* for full explanations of the concepts and background needed to work in UIM. The following list includes definitions of a few key UIM terms:

- Design Studio is the Oracle Communications service creation environment. Modelers and developers use it to define the way data is stored in UIM. Design Studio is a separately licensed product that you install independently of UIM. See *UIM Concepts* and the Design Studio Help for more information.
- Entities are the items in your UIM inventory. They can represent physical or logical resources, such as equipment and telephone numbers. They can also represent business processes or organizational tools such as business interactions or resource reservations.

Entities are usually based on specifications that you select when you create the entities. There are many different types of entities, but the ways you work with them are very similar. See "Working with Inventory Entities " for more information.

- Specifications are definitions or blueprints used to create and display inventory entities in UIM. There are different types of specifications for different types of entities, such as telephone numbers, networks, physical devices, and inventory groups. For example for physical devices, you could have specifications for various kinds of PE routers, ISP routers, DCN routers, and so on. Specifications are defined in Design Studio. In UIM, you work with them mainly in the context of creating entities. You can also search for, view, and manage specification definitions in UIM. See "Working with Entity Specifications" for more information.
- *Configurations* are a particular kind of entity that enable you to plan, create, and maintain versions of how a parent entity is realized or how it consumes resources. For example, a Service entity can have a service configuration that stores the specific details that are likely to change. You can create new configuration versions as the service evolves. Configurations are not available for all entity types. See "Working with Entity Configurations" for more information.
- *Characteristics* are user-defined data elements that define the information stored in entities. For example, a Physical Device entity may include a characteristic for the device serial number. In UIM, characteristics are displayed as fields, such as text fields, lists, check boxes, and so on. These characteristics are displayed in addition to the default data elements that appear for all entities of a particular type. You define characteristics in Design Studio and include them in entity specifications. In UIM, you interact with characteristics mainly when you enter information into fields or when you search for entities based on characteristic values. See "Working with Characteristics" for more information.
- *Rulesets* are chunks of Java code that are run at a specified time in UIM. For example, when you validate a service configuration, a ruleset performs the validation. Some rulesets are included by default, but custom rulesets can be used to extend UIM. See *UIM Concepts* and *UIM Developer's Guide* for detailed information. In UIM, you can view and manage rulesets. See "Working with Rulesets" for more information.
- *Cartridges* are the way that entity specifications, characteristic specifications, rulesets, and other data are deployed into UIM from Design Studio. Cartridges are built in Design Studio as JAR files and then installed into UIM. You can create your own custom cartridges to extend UIM. You can also obtain *cartridge packs* from Oracle that supply specifications and other data for particular technology domains.

Working with the UIM User Interface

UIM has a web-based interface with simple navigation and interface controls. The main window is divided into two regions and has a menu in the upper right corner. The region to the left contains the navigation section, which you use to open pages of various kinds. The region to the right is populated with the pages that you open.

> **Note:**
>
> To navigate in the UIM user interface, use only UIM user interface menu items, buttons, icons, and actions. Do not use your browser buttons, such as the **Back** and **Forward** buttons, to move between screens or to refresh the application. Browser actions may result in error messages.

See the following topics for more information about the UIM user interface:

- About the Navigation Section and Landing Page
- About Pages
- Searching

About the Navigation Section and Landing Page

You use the navigation section to move around the application. You click links in the navigation section to open pages, which appear on the right side of the main window. In addition to the navigation section, you can use the links on the landing page to open the desired page. In most cases, the pages that you open from the navigation section enable you to search for entities. In other cases, clicking a link opens a page for completing a task, such as importing inventory. See "About Pages" for more information.

You use the Home icon on the upper-left corner of the user interface to come back to the landing page from any page.

The contents of the navigation section are divided into four groups that you can expand or collapse:

- The **Tasks** group is divided into two sub-groups:
  - The **My Tasks** sub-group contains links that enable you to view information about activities assigned to you or to your work group.
  - The **All Tasks** sub-group contains links that enable you to search for projects, engineering work orders, and business interactions.
- The **Network Functions Virtualization (NFV) Orchestration** group contains links to support the orchestration functionality. See *NFV Orchestration Implementation Guide* for information on this topic.
- The **Services** group contains links to service entities.
- The **Inventory** group is divided into two sub-groups:
  - The **Resources** sub-group contains links that enable you to search for resource entities, such as connectivities, logical devices, telephone numbers, IP addresses, networks, and more.
  - The **Infrastructure** sub-group contains links to property locations, custom objects, inventory groups, parties, and places.
- The **Administration** group contains for administrative functions such as rebuilding topology and running rule sets. It also contains links that enable you to search rulesets, sequence specifications, characteristics, and entity specifications.
- The **Operational Analysis** group contains the Outage Impacts and Path Analysis.

About Pages

When you click a link in the navigation section, the right side of the main window is populated with a page. Pages are also displayed as the result of navigation from other pages. Pages enable you to complete tasks, such as searching for entities.

For example, if you click the **Logical Device** link in the **Inventory - Resources** group, you see a page that enables you to search for logical devices. See "Searching" for more information. From the results of the logical device search, you can open a Summary page for a particular

logical device, where you can view, enter, and change information. See "Working in Entity Summary Pages" for more information.

The contents of pages are often displayed in tables. You can change the way that information is displayed in a number of ways. See "Working with Tables" for more information.

Pages are often divided into sections that contain specific kinds of information. Sections are areas within pages that are separated by title bars. For example, a Logical Device Summary page includes Logical Device Information, Logical Device Hierarchy, and Parent Logical Device sections, among others. "Collapsing and Expanding Sections in a Page".

Collapsing and Expanding Sections in a Page

You can save space in a page by collapsing a section. You can expand the section when you need to see its contents.

To collapse and expand sections:

- Click the triangle icon in the upper left corner of the section's title bar to collapse it. Click the icon again to expand the section.

Searching

UIM includes search features that enable you to find information based on a variety of criteria. For example, you can find all telephone numbers in a particular service area or all logical devices associated with a VPN service.

Search sections for the various entity types include a set of default fields appropriate to the entity. For example, the default fields that appear in the Search section for an Equipment entity are different from those that appear for a Product entity.

When search results are displayed, you can follow links to get information about specific entities or take actions on one or more of the results.

See the following topics for more information about searching in UIM:

- Searching for Entities
- Searching for Equipment, Pipe, Logical Device, and Inventory Group Entities
- Searching for IP Address Entities
- Searching for Telephone Number Blocks
- Performing Actions on Search Results

Searching for Entities

UIM enables you to search for entities based on combinations of criteria. For example, you can search for all Equipment entities that are based on a particular specification and are in the Pending Install inventory status. With Connectivity entities, you can search by number of channels and capacity.

You can add and remove fields from the default list of search criteria in the Search section. When you add fields, you can include one or more of the characteristics that have been defined for all specifications of an entity type. For some entities, including services, pipes, and business interactions, you can also add fields related to external systems that cooperate with UIM.

When searching for Telephone Number, Place, Custom Network Address, and Custom Object entities, including a specification in the search criteria causes additional information to be displayed in the search results. For example, if you include a specification in a telephone number search, the results include a column for the connection type.

You can use wildcards and other symbols in searches. UIM supports the following wildcard characters:

- A percentage sign (%) represents a match of zero or more characters.
- An underscore (_) represents a match of any single character.

> **Note:**
>
> Wildcard characters can be escaped with a backslash (\). To insert a backslash in the query, insert two backslashes (\\).

Note the following special search considerations:

- If you are searching for a telephone number associated with a service, results are returned only when the telephone number and the service are included in the same inventory group.
- Text field characteristics that are flagged as password fields cannot be used as search criteria.
- You can search for places by type, specifying any combination of site, location, address, or address range.
- If you search for an entity without any criteria for specification field, the system throws a warning that the search will take a long time. This is a customizable feature that can be enabled/disabled. See "*UIM System Administrator's Guide*" for more information.

Equipment, Pipe, and Inventory Group searches include some features not available for other entities. See "Searching for Equipment, Pipe, Logical Device, and Inventory Group Entities".

IP Address entity searches are slightly different from other entity searches. See "Searching for IP Address Entities".

Telephone Number searches enables you to also search for Telephone Number Blocks. See "Searching for Telephone Number Blocks".

To search for entities:

1. In the navigation section, click the link for the type of entity you want to search for.

   The search page for the entity appears. The Search section displays fields for the entity's default data elements. The fields depend on the kind of entity you are searching for.

2. (Optional) To change the default search criteria:

   a. Click **Add Fields** and the desired entity type (if applicable).

      The Add Fields dialog box appears.

   b. Use the directional arrow buttons to move data elements between the **Available Fields** column to the **Selected Fields** column.

   c. Click **OK**.

      The selected fields appear in the Search section.

3. Enter search criteria in the desired fields. Some fields require that you enter text; others allow you to select from lists.
4. Click **Search**.

   A table of search results appears in the Search Results section. See "Performing Actions on Search Results" for more information about working with search results.

Related Topics

Searching for Equipment, Pipe, Logical Device, and Inventory Group Entities

Searching for IP Address Entities

Searching for Telephone Number Blocks

Searching for Telephone Number Blocks from within Activities

Performing Actions on Search Results

Searching for Equipment, Pipe, Logical Device, and Inventory Group Entities

Equipment, Pipe, Logical Device, and Inventory Group entity searches includes some features not available for other entities. You can search for entities based on their relationships. For Equipment entities, you can search based on relationships with Physical Device, Logical Device, and Place entities. For Pipe entities, you can search based on relationships with terminating places, as well as Network, and Logical Device entities. For Inventory Group and Logical Device entities, you can search by Place.

In addition, the way you add fields to the search criteria is different from the method used for other entities.

To search for Equipment, Pipe, Logical Device, and Inventory Group entities:

1. In the navigation section, click the link for the type of entity you want to search for.

   The search page for the entity appears. The Search section displays fields for the entity's default data elements. Below the search fields are several collapsed sections for the relationships that can be included in the search.
2. (Optional) To change the default search criteria:
   a. Click **Add Fields**.

      A list of entity types appears. The list includes the entity type you are searching for (Equipment or Pipe) and the entities with which it can have relationships.
   b. Select the entity type for which you want to add search criteria.

      The Add Fields dialog box for the selected entity type appears.
   c. Use the directional arrow buttons to move data elements between the **Available Fields** column to the **Selected Fields** column.
   d. Click **OK**.

      The selected fields appear in the appropriate area of the Search section.
   e. Repeat this step to add search criteria for additional entity types.
3. Enter search criteria in the desired fields. Some fields require that you enter text; others allow you to select from lists. To enter search criteria for related entity types, open the collapsed section for that entity type.
4. Click **Search**.

A table of search results appears in the Search Results section. See "Performing Actions on Search Results" for more information about working with search results.

Related Topics

Searching for Entities

Performing Actions on Search Results

Searching for IP Address Entities

IP Address entity searches are slightly different than other entity searches because the Search page contains tabs that enable you to search for more than one entity type. Specifically, there are tabs that enable you to search for IPv4 Network, IPv4 Subnet, and IPv4 Address entities, or for IPv6 Network, IPv6 Subnet, and IPv6 Address entities.

To search for IP Address entities:

> **Note:**
>
> The following steps describe searching for IPv4 address entities. Searching for IPv6 address entities is done in the same manner.

1. In the **Inventory - Resources** group of the navigation section, click the **IP Address - IPv4** link.

   The search page for the IPv4 Network entity appears. The Search section displays fields for the entity's default data elements.

2. (Optional) Click the **IPv4 Subnet** tab to search for IPv4 Subnet entities.

   The search page for the IPv4 Subnet entity appears. The Search section displays fields for the entity's default data elements.

3. (Optional) Click the **IPv4 Address** tab to search for IPv4 Address entities.

   The search page for the IPv4 Address entity appears. The Search section displays fields for the entity's default data elements.

4. (Optional) To change the default search criteria:

   a. Click **Add Fields**.

      The Add Fields dialog box appears.

   b. Use the directional arrow buttons to move data elements between the **Available Fields** column to the **Selected Fields** column.

   c. Click **OK**.

      The selected fields appear in the Search section.

5. Enter search criteria in the desired fields. Some fields require that you enter text; others allow you to select from lists.

6. Click **Search**.

   A table of search results appears in the Search Results section. See "Performing Actions on Search Results" for more information about working with search results.

Related Topics

Searching for Entities

Performing Actions on Search Results

Searching for Telephone Number Blocks

UIM enables you to search for telephone number entities in blocks of sequential numbers.

> **Note:**
>
> The telephone number block search does not retrieve the reserved telephone numbers.

To search for telephone number blocks:

1. In the **Inventory - Resources** group of the navigation section, click **Telephone Numbers**.

   The Telephone Number landing page appears.
2. Hover the mouse cursor over the Search TN Blocks icon and click **Search TN Blocks**.

   The Telephone Numbers Block Search page appears.
3. Enter the search criteria in the desired fields. Some fields require that you enter text; others allow you to select from lists.
4. (Optional) In the **Range From** field, enter the number you want to search.
5. (Optional) In the **Range To** field, enter the ending number of a range of numbers.
6. In the **Block Size** field, enter the telephone number block size.

   This is a mandatory field and accepts values equal to or greater than 1.
7. Click **Search TN Blocks**.

   The telephone number blocks that meet your search criteria are displayed in the Blocks Results section.

Working With Saved Searches

UIM automatically saves the results of your last search and stores the results in the Search Results section of a Search page. If you navigate away from the Search page, and then return to it later, the Search Results section displays the results of your last search as **Saved Last Search** in the **Saved Search** menu. However, after you run a new search in a different Search page, the earlier search results in the previous Search page are no longer available and you can view the search results only in the latest Search page.

You can also manually save searches that you perform frequently. This feature is especially useful for complex searches where reentering the criteria is time-consuming.

See the following topics for more information about saved searches:

- Saving a Search
- Modifying a Saved Search
- Running a Saved Search

Saving a Search

To save a search:

1. In a Search page, enter the search criteria you want to save.
2. Click the **Save** button.

   The Create Saved Search dialog box appears.
3. In the **Name** field, enter a name for the search.
4. (Optional) Select the **Set As Default** check box to make this search the default.
5. (Optional) Select the **Run Automatically** check box to configure this search to run automatically when you open this Search page.
6. Click **OK**.

   The new search appears in the **Saved Search** menu. If you designated it as the default search, it appears at the top of the menu.

Related Topics

Running a Saved Search

Modifying a Saved Search

To modify a saved search:

1. In a Search page, select a search from the **Saved Search** menu.

   The search fields are populated with the criteria from the saved search.
2. From the **Saved Search** menu, select **Personalize**.

   The Personalize Saved Search dialog box appears.
3. In the **Name** field, enter a name for the search.
4. Select the **Set As Default** check box to make this search the default.
5. Select the **Run Automatically** check box to configure this search to run automatically when you open this Search page.
6. Click **OK**.

   Your changes are saved. The new name appears in the **Saved Search** menu. If you designated it as the default search, it appears at the top of the menu.

Related Topics

Running a Saved Search

Running a Saved Search

To run a saved search:

1. In a Search page, select a search from the **Saved Search** menu.

   The search fields are populated with the criteria from the saved search.
2. Click the **Search** button.

The search you selected is performed and the results are shown in the Search Results area.

Related Topics

Modifying a Saved Search

Performing Actions on Search Results

Performing Actions on Search Results

When the results of a search are displayed, you can select entities and perform actions on them. The actions you can take depend on the entity type.

To perform actions on search results:

1. In a Search Results section, select the entity rows on which you want to perform an action.
2. Click **Actions**, then select the action you want to take.

   A page or dialog box related to the action appears.
3. Complete the action.

Related Topics

Duplicating Entities

Deleting Entities

Duplicating Entities

You can duplicate certain types of entities that are returned in search results. The entities you can duplicate are resources that commonly exist in large numbers in an inventory: equipment, logical devices, physical devices, and pipes.

A duplicate has the same identifying information as the original, except for the ID. Other attributes of the original entity, such as associations, configurations, membership in inventory groups, and so on, are not duplicated.

When you duplicate an entity, UIM generates a new ID for the duplicate entity. The way the ID is generated depends on the entity specification:

- If the specification is configured for auto-generation of IDs, the duplicate has an ID that follows the same pattern as new entities based on that specification.
- If the specification is configured for manual entry of IDs, the duplicate ID is based on the ID of the original followed by sequential numbers. For example, if the original ID is **KNA77** and you create five duplicates, they will have the IDs **KNA77-1** through **KNA77-5**.

Logical devices can also be cloned. When you clone a logical device, the entity itself is copied along with the physical devices and Equipment entities in its hierarchy or associated with it.

To duplicate an entity:

1. Search for an entity.

   See "Searching for Entities" for information.
2. In the Search Results section, select an entity.
3. Click the **Duplicate** button in the Search Results section toolbar.

   The duplicates are created and displayed in the list of search results.

Related Topics

Performing Actions on Search Results

Cloning Logical Devices

Deleting Entities

Deleting Entities

You can delete entities that are returned in search results.

> **Note:**
>
> You cannot delete entities that are in use in the inventory. For example, you cannot delete an entity that has been allocated as a resource in a configuration item or associated with a network node.

To delete entities:

1. Search for an entity.

   See "Searching for Entities" for information.
2. Select one or more entities in the Search Results section.
3. Click **Delete**.

   The entities are deleted and removed from the list of search results. An error message is displayed if you try to delete entities that are in use.

Related Topics

Performing Actions on Search Results

Duplicating Entities

Search Page

You use an entity Search page to search for existing entities and to create new entities. The Search page includes two sections.

Search Section

You use the Search section to define the search criteria to use when searching for existing entities. The entity type and specification definition determines the fields that appear in the Search section. Each specific entity Search section contains a default selection of fields plus any additional fields defined by the specification.

The following commands are common among all entity Search sections.

Command	Description
Search	Click to search for results that meet the specified search criteria, which appear in the Search Results section.
Reset	Click to reset search criteria.

Command	Description
Save	Click to save the current search criteria as a saved search and to optionally make the saved search the default. See "Working With Saved Searches" for more information.
Add Fields	Click to add additional fields to the Search section.

Search Results Section

You use the Search Results section to review, edit, and organize search results, and to create new entities. The entity type and specification definition determine the columns that appear in a Search Results section.

The search results are displayed in a table that includes standard tools for arranging content. See "Working with Tables" for more information.

The following table lists commands that exist in various Search Results sections. This list varies from entity to entity.

Command	Description
Actions	Click to see an additional list of commands for that entity type.
View	Click to alter the display of the results.
Create	Click to create a new entity. See "Creating Entities " for more information.
Clone	Click to create a new entity based on the selected entity and provide new field values. This is on limited entities.
Duplicate	Click to create a new entity based on the selected entity. The identifier is generated automatically.
Create Range	Click to create a set of new entities. You can specify a quantity and the identifiers are generated automatically. See "Creating Entities " for more information.
Edit	Click to edit the selected entity in the entity Information page.
Bulk Edit	Click to edit the characteristics of one or more selected entities. You must specify the specification in the search to enable this option and also be in the current or live business interaction context. This option is on limited entities.
Delete	Click to delete the selected entity and confirm yes in the confirmation dialog box.
Export	Click to export the results to a spreadsheet file.
Detach	Click to expand the results to a detached page display.
Select All	Click to select all entities.
Topology	Click to navigate to the UTIA application that opens the topology diagram of the selected entity. **Note:** This option is available only for property locations.

Related Topics

Searching for Entities

Searching for Equipment, Pipe, Logical Device, and Inventory Group Entities

Searching for IP Address Entities

Searching for Telephone Number Blocks

Searching for Telephone Number Blocks from within Activities

About Pages

Add Fields

Add Fields

You use the add fields page to add fields or attributes to the current page for searching and also for an edit of one or more entities. Use the single arrow to move one field from a column to the other or the double arrow to move all the fields. If both columns are empty, then this option is not available.

You can also use this page to remove fields from the current page.

Field	Description
Available Fields	This lists the fields or attributes that are available to add to the display.
Selected Fields	This lists the fields or attributes that are in the display or available for edit.

Related Topics

Searching for Entities

Viewing Recent Items

The **Recent Items** list, located in upper-left corner of the user interface, includes links to the ten most recent pages that you have viewed The links are ordered sequentially based on the order in which you viewed the pages.

The **Recent Items** menu displays a list of links to the pages (including the individual sections and subtabs within those pages) that you opened within the application. This enables you to quickly open the page that you want to view.

For example, if you are currently on the **Groups and Infrastructure** tab of the Summary page of a logical device with an ID of 14 and name LD_TWO, and then if you navigate away to various different pages, you can return to the **Groups and Infrastructure** tab of the logical device (with an ID of 14) by selecting **Logical Device Summary - 14 - LD_TWO - Groups and Infrastructure** from the **Recent Items** menu.

Select **Clear all Recent Items** to remove all links to previously viewed pages.

Back and **Forward** buttons are located beside the **Recent Items** menu, which enable you to go back or forward one page at a time, respectively. The **Back** and **Forward** buttons help you navigate based on the information in the **Recent Items** menu. If you select **Clear all Recent Items** from the **Recent Items** menu, all links to previously viewed pages are removed, and therefore you cannot use the **Back** and **Forward** buttons to navigate to a previous page or a forward page.

Navigating to the Landing Page from a Page

The Home icon on the upper-left corner of the user interface navigates you to the landing page from any page. See "Navigating to a Page from the Favorites Menu" for more information on the landing page.

Working with Favorites

The **Favorites** menu enables you to quickly go to pages that you use frequently. You can designate any page as a favorite and you can organize favorites into folders for easy access.

See the following topics for more information about working with favorites:

- Navigating to a Page from the Favorites Menu
- Adding Pages to the Favorites Menu
- Managing Favorites
- Arranging Favorites

Navigating to a Page from the Favorites Menu

The **Favorites** menu lists all the pages that you have designated as favorites, optionally sorted into folders.

To navigate to a page from the **Favorites** menu:

1. From the **Favorites** menu, select a page or a folder.

   If you selected a page, it appears in the main window. If you selected a folder, it expands to reveal the pages or other folders it contains.
2. Continue to select until you reach the page you want to open.

Adding Pages to the Favorites Menu

You can add pages to the **Favorites** menu so that you can return to them quickly. For example, if you are working on setting up a business interaction, you can add the business interaction to the **Favorites** list so that you can return to it quickly.

To add a page to the **Favorites** list:

1. While a page is displayed, select **Add to Favorites** from the **Favorites** menu.

   The Add to Favorites dialog box appears.
2. (Optional) Edit the default name.
3. (Optional) Do one of the following:
   - Select a folder in which to store the favorite.
   - Click **New**, enter a name for a new folder in the dialog box that appears.
4. Click **OK**.

Managing Favorites

The Manage Favorites dialog box enables you to add folders and to remove folders and pages.

To add a folder to the **Favorites** menu:

1. From the **Favorites** menu, select **Manage Favorites**.

   The Manage Favorites dialog box appears.
2. Click the **Add** (plus-sign) icon.

The Create Folder dialog box appears.

3. Enter a name for the folder and click **OK**.

To remove a folder or page from the **Favorites** menu:

1. From the **Favorites** menu, select **Manage Favorites**.

   The Manage Favorites dialog box appears.

2. Select a folder or page.
3. Click the **Delete** (cross) icon.
4. Click **OK** if a confirmation dialog box appears.

Arranging Favorites

You can arrange the folders and pages listed in the **Favorites** menu so that they are displayed in the most useful order.

To arrange favorites:

1. From the **Favorites** menu, select **Manage Favorites**.

   The Manage Favorites dialog box appears.

2. Select a folder or page, then drag it to a new location.
3. Click **OK**.

   The **Favorites** menu reflects your changes.

Working with Personalization

The **Personalization** menu enables you to set any page that you frequently access as the default landing page. The **Personalization** menu also enables you to personalize the entity Summary pages to show or hide various subtabs and sections within different tabs.

You set the landing page and personalize the entity Summary pages in the Set Preferences window, which you open by selecting **Set Preferences** from the **Personalization** menu.

See the following topics for more information about working with personalization:

- Setting the Landing Page
- Personalizing Entity Summary Pages

Setting the Landing Page

You can set any page that you frequently access as the default landing page. This page will be displayed first every time you log in to UIM.

> **Note:**
>
> The default landing page setting is user-specific, which means that any change that you make is applied only to the current logged-in user.

To set the landing page:

1. From the **Personalization** menu, select **Set Preferences**.

   The Set Preferences window is displayed.
2. From the **Landing Page** list, select the entity page that you want set as the landing page.
3. Click **Save**.

> **Note:**
>
> To set the UIM Home Page as the default landing page, in the Set Preferences window, click **Reset to Default**.

Personalizing Entity Summary Pages

You can personalize the entity Summary pages to show or hide various subtabs and sections within different tabs so that only the subtabs/sections you want are displayed.

> **Note:**
>
> The Summary page preferences are user-specific, which means that any changes that you make are applied only to the current logged-in user.
>
> You can also personalize entity summary pages by setting the value of the **ui.***entityName***summary.***portletName***.deactivate** property in the *UIM_Home***/config/system-config.properties** file. This property setting applies to all the UIM users. See *UIM System Administrator's Guide* for more information.

To personalize the Summary page of an entity:

1. From the **Personalization** menu, select **Set Preferences**.

   The Set Preferences window is displayed.
2. From the **Entity Type** list, select an entity. The page displays the subtabs/sections that appear within different tabs in the Summary page of that entity.
3. Select the check boxes beside the subtabs/sections that you want hidden from the Summary page of the entity.
4. Click **Save**.

> **Note:**
>
> To clear all the preferences for the entity Summary pages, in the Set Preferences window, click **Reset to Default**.

2

Working with Inventory Entities

Oracle Communications Unified Inventory Management (UIM) stores items in your inventory as various kinds of entities. Some, such as physical devices or telephone numbers, represent physical or logical resources. Other entities are used for organization or to represent business processes.

Many tasks and procedures are common to most or all entity types, including both resources and other entities. The procedures you use to create, configure, manage, and search are fundamentally the same for most entities. The features and tasks that are specific to particular entity types are covered in the Help topics for those entity types.

See the following topics for more information about working with inventory entities:

- Creating Entities
- Working in Entity Summary Pages
- Managing Entity Life Cycles
- Working with Entity Hierarchies
- Working with Entity Configurations
- Validating Entities and Entity Configurations
- Working with Visualizations and Diagrams
- Working with Resource Reservations
- Working with Conditions
- Working with Custom Involvements

Creating Entities

You use the same basic procedure to create all entity types. The specific information you supply varies depending on the entity type and on the specification used to define the entity.

You can create entities in bulk by uploading a spreadsheet with all the list of entities you want to create and uploading it into UIM. See "Creating Entities and Performing Entity-Specific Tasks in Bulk" for more information.

To create entities:

1. In the navigation section, click the entity link.

   For example, if you are creating a Logical Device entity, click the **Logical Device** link in the **Inventory - Resources** group.

   The entity Search page appears.
2. In the Search Results section, click **Create**.

   The entity New page appears.

   Entity New pages include required fields that are marked with asterisks.
3. In the **Specification** list, select the specification you want to use for this entity.

4. If the **ID** field does not contain the text **AUTOGENERATE**, enter a unique ID for the entity.

   By default, most entity IDs are generated automatically. Whether the ID is generated automatically or entered manually, it cannot be changed after the entity is created.

5. (Optional) In the **Name** and **Description** fields, enter a name and a description for the new entity. Entering a name and description is optional, but systematic naming strategies are useful in managing your inventory.
6. Enter information into all fields marked with asterisks.
7. (Optional) Enter information into non-required fields.
8. (Optional) To create an additional entity based on the same specification, click **Save and Add Another**.
9. Click **Save and Continue**.

   The Summary page for the entity you created appears. If you created multiple entities, you see the Summary page for the last entity you created. See "Working in Entity Summary Pages" for more information.

Working in Entity Summary Pages

An entity Summary page appears when you open an entity from the Search Results section. A Summary page enables you to view entity information and complete tasks.

See the following topics for more information about working in Summary pages:

- About Summary Pages
- Opening Entity Summary Pages
- Viewing and Updating Entity Information
- Working with Tables
- Entity Summary Page
- Related Pages Menu
- Actions Menu

About Summary Pages

Summary pages contain information about an entity. The Summary pages of entities are either arranged into tabs or provide information in a single view.

The Summary pages of the following entities are arranged into tabs, each of which is used for a different purpose.

- Logical Device
- Device Interface
- Logical Device Account
- Physical Device
- Physical Port
- Pipe
- Custom Network Address
- Equipment

- Telephone Number
- Party
- Place
- Network
- Inventory Group
- Custom Object

Typically, the Summary page of these entities contains the following tabs, which are common to most entity types:

- **General Information:** Displays basic information about the entity and the entity hierarchy. This tab is displayed by default when you open an entity Summary page.
- **Configurations:** Displays any entity configurations created for the entity. This tab is available only when the specification on which the entity is based includes a reference to the entity configuration specification.
- **Associated Resources:** Displays information about the parent entity, network nodes, and custom involvements.

  Depending on the entity type, an entity Summary page displays additional or fewer subtabs in the **Associated Resources** tab. In case of a few specific entities, the **Associated Resources** tab displays information in subtabs, rather than in sections.

  This tab contains the following subtabs/sections:

  - **Parent *Entity*** (where Entity is the entity type; for example, Parent Logical Device, Parent Physical Device, and so on): Displays any associations with the parent entity.
  - **IP Resources:** Displays IP resources assigned to the entity.
  - **Network Nodes:** Displays any network nodes with which an entity is associated.
  - **Grants Media Streams:** Displays any media streams with which the entity is associated.
  - **Custom involvements:** Displays any custom associations defined for the entity with other entities that are not otherwise associated.
- **Consumers:** This tab contains the following sections:
  - **Assignments:** Displays information about the entities that are assigned to an entity.
  - **References:** Displays information about the entity references.
  - **Business Interactions:** Displays any business interactions with which the entity is associated.
- **Groups and Infrastructure:** This tab contains the following sections:
  - **Inventory Groups:** Displays any inventory groups to which the entity is associated.
  - **Roles:** Displays any roles that are associated with the entity.
  - **Places:** Displays any places that are associated with the entity.

The Summary pages of the rest of the entities (other than the ones listed above) display information in a single view and are divided into sections that contain different kinds of information.

The sections that you see depend on the entity type. These sections enable you to define the entity's composition, relationships, dependencies, and other attributes.

Many of the sections in a Summary page include links that enable you to update the information displayed in that section. See "Viewing and Updating Entity Information" for more information.

Summary pages also include **Actions**, **Related Pages**, and business interaction menus that you use to perform various tasks specific to the entity type.

Related Topics

Opening Entity Summary Pages

Entity Summary Page

Opening Entity Summary Pages

You can open entity Summary pages in the following ways:

- By searching for entities. See "Searching for Entities" for more information.
- By following a link in another Summary page. For example, you can click a link in the Items section of an Inventory Group Summary page to go to corresponding entity Summary page.

Related Topics

About Summary Pages

Viewing and Updating Entity Information

Entity Summary Page

Viewing and Updating Entity Information

You can view and update an entity's basic information from its Summary page. The Summary page displays much of the information entered during entity creation. Some data elements, such as the ID, cannot be changed after the entity is created.

To view and update entity information:

1. Do one of the following:
   - For entities whose Summary page displays information in a single view:
     - Open the Summary page for an entity and click **Edit**.
   - For entities that have their Summary page arranged into tabs:
     - Open the Summary page for an entity, on the **General Information** tab, click **Edit**.

   Alternatively, search for an entity, select it in the search results, and click the **Edit** link in the toolbar.

   The Information page for the entity appears.
2. Update the entity information.

   You can update most fields, but you cannot change the entity's ID. Required fields are marked with an asterisk.
3. Click **Save and Close**.

   You return to the entity's Summary page, which displays the updated information

Related Topics

About Summary Pages

Opening Entity Summary Pages

Entity Summary Page

Working with Tables

Much of the information in pages is displayed in tables. These tables all have the same basic functionality, although not all features are available in all tables. You can choose which columns are displayed and the order in which they appear. You can also filter and sort table contents so that only the most relevant information is displayed.

All tables include a View menu with commands that control appearance and content. Tables also have toolbars that contain icons for specific actions. The selection of icons varies from table to table. Some of the icons correspond to commands in the View menu. Others

See the following topics for more information about working with tables:

- Showing and Hiding Columns
- Reordering Table Columns
- Filtering Table Contents Using Query by Example
- Sorting Tables
- Scrolling Automatically in Tables
- Detaching Tables

Showing and Hiding Columns

By default, tables display all the columns that are available to them. You can change the default arrangement of columns so that only the columns you want are displayed. Your changes persist only for the current session.

To show or hide table columns:

1. In the **View** menu of a table, select **Columns**.

   The **Columns** menu appears. This menu includes the **Show All** option, a list of the first 10 columns in the table, and the **Show More Columns** option.

2. Do one of the following:

   - Select **Show All** to display all the available columns. The columns are displayed immediately.
   - Select or deselect a column name to show or hide that column. The changes appear immediately.
   - Select **Show More Columns** to open a dialog box in which you can work with all available columns.

     The Show More Columns dialog box appears.

     a. Select columns in the **Hidden Columns** or **Visible Columns** list and click the **Move** or **Remove** button to transfer columns from one list to the other.

        Click the **Move All** or **Remove All** button to transfer all columns.

b. (Optional) Select columns in the **Visible Columns** list and click the up or down arrows to the right of the list to change the column order.

c. Click **OK**.

   The table displays the column arrangement you specified.

Reordering Table Columns

You can specify the order of columns that appear in a table. Your changes persist only for the current session.

To reorder table columns:

1. In the **View** menu of a table, select **Reorder Columns**.

   The Reorder Columns dialog box appears, containing a list of the visible columns in the table.

2. Select columns in the **Visible Columns** list and click the arrow buttons to the right of the list to change the column order.

3. Click **OK**.

   The table displays the column order you specified.

Filtering Table Contents Using Query by Example

In some tables, you can filter contents by using Query by Example (QBE).

When you enter criteria in the QBE fields above columns, the table is filtered to show only rows that match all the criteria. For example, if you enter **In Progress** in the **Status** QBE field and **Customer** in the **Specification** QBE field, the table is filtered to show only rows that include the entities created with a specification that begins with the string Customer and that have a status of In Progress.

Criteria that you enter in a QBE field apply only to the column below the field.

To filter table contents:

1. In the **View** menu of a table, select **Query By Example**.

   Text fields appear above the columns that are enabled for QBE.

2. Enter a filter criterion above a columns, then press the **Enter** key.

   The table contents redisplays to show only rows that include the criterion you entered.

3. Repeat to apply additional criteria.

Sorting Tables

You can sort the contents of tables into ascending or descending order based on values in certain columns. For example, you could sort the places associated to a logical device into alphabetical order.

To sort table contents:

1. In the **View** menu of a table, select **Sort**, then select **Advanced**.

   The Advanced Sort dialog box appears.

2. In the Sort By list, select a column. Note that not all columns are available for sorting.

3. Click **Ascending** or **Descending**.

4. Click **OK**.

   UIM sorts the table contents based on your selections.

Scrolling Automatically in Tables

You can scroll automatically to the beginning or end of a table.

To scroll automatically in a table:

- In the **View** of a table, select **Scroll to First** or **Scroll to Last**.

  The table scrolls to the first or last entry in the table.

Detaching Tables

You can detach tables from the page in which they are located. A detached table appears in a separate window. Detaching a table is particularly helpful when the table is long or complex. The separate window provides additional space.

The detached window includes the same menus and toolbar icons that were available for the table in the original page.

To detach a table:

1. In the **View** of a table, select **Detach**.

   The table appears in a new window separate from the original page.
2. Close the window to return to the original page.

Entity Summary Page

You use entity Summary pages to define the content for entities.

Two menus appear at the top of the page. See the following for a description of the commands:

- Related Pages Menu
- Actions Menu

Information in Summary pages is often displayed in tables. See "Working with Tables" for instructions about using tables.

The following table lists command options that are common among multiple entity Summary pages. See the Help for a specific entity Summary page for more information about the fields and sections that are unique to that entity.

Command	Description
Edit	Click to change the values for fields that appear in the Information section.
Topology	Click to view the entity in a topology diagram that appears in the UTIA application. See "Working with the Inventory Topology" for more information.

Command	Description
Business Interaction context indicator	This indicator is visible only for entities that support business interactions. Click and do one of the following: • Select **Current** if you want all subsequent actions to be effective immediately. Actions you take after selecting **Current** are applied directly to the inventory, without being included in a business interaction. **Current** is the default option and initially appears as the field label. • Select from a list of the five most recently used business interactions. • Select **Search** to select a business interaction that is not among the five most recently used. See "Searching for Entities" for more information. Your selection sets the business interaction context and appears in the menu in the upper-left of the page. See "Working with Business Interactions" for more information.

Related Topics

About Summary Pages

Opening Entity Summary Pages

Viewing and Updating Entity Information

Related Pages Menu

Use this menu, which appears on entity Summary pages, to perform operations on pages that are related to the entity. The commands that appear in the Related Pages menu are determined by the entity Summary page from which you access the menu.

Command	Description
Conditions	Select to define conditions for blocking resources from being used or assigned for a period of time or to define messages to be displayed when resources are assigned. See "Working with Conditions" for more information.
Reservation	Select to view, edit, or delete existing reservations or to create new reservations. Resources can be reserved by an entity or process to prevent them from being assigned to another entity or process. See "Creating a Reservation from a Summary Page" for more information.
Map View	Select to review the network nodes and edges visually and in relation to each other based on latitude and longitude. Network nodes must be associated with a place that includes a latitude and longitude or associated to a place that is associated with an address that has a latitude and longitude. See *UIM Developer's Guide* for information about setting up UIM for geocoding. See "Using the Map View" for more information about working in the Map View page.
Map Profile	Select to access the Map Profile page, which enables you to create custom map views. The map profile controls how a map displays when it opens for each network. You must select a map profile before you can review a network in the Map View page. There are additional implementations required to use map functionality. See *UIM System Administrator's Guide* for information about setting up UIM to use with maps. See "Working with Map Profiles" for information about setting up map profiles.

Command	Description
Manual Configure	Select to manually enable a pipe. This option is available for unversioned pipes with no configuration versions) only. See "Manually Enabling an Unversioned Pipe" for more information. You enable versioned pipes per configuration. See "Manually Enabling a Versioned Pipe" for more information.
Graphic View	Select to view a visualization of the enablement of a pipe or pipe configuration. See "Viewing a Pipe Enablement Visualization" for more information.
Path Analysis	Select to run a path analysis on the pipe. You can use path analysis to automatically enable a trail between two entities that you specify. See "Running a Path Analysis" for more information.
Provides	Select to view any existing child pipes or create new child pipes. See "Working with Child Pipes" for more information.
Tree View	Select to view and define the equipment hierarchy in the Equipment View page. See "Equipment View Page" for more information.

Related Topics

Working in Entity Summary Pages

Actions Menu

Use this menu, which appears on entity Summary pages, to perform actions specific to the entity displayed in the entity Summary page.

The commands that appear in the **Actions** menu are determined by the entity Summary page from which you access the menu. Not all commands apply to every entity. These commands are listed in alphabetical order.

Command	Description
Activate	Select to make an entity available to support services or other resources. The inventory status is changed to Installed.
Approve Configuration	Select to change the status of service configurations in a business interaction from In Progress to Designed status. Service configurations already in Designed status are not affected. The status of the business interaction itself is not affected by this operation.
Associate Business Interaction	Select to associate a business interaction to a configuration version. The configuration summary must be set in the context of the desired business interaction or this action is disabled. You can use this when you want a configuration version associated to a business interaction, for instance for multiple pending configuration functionality support. This action overrides the start date of the configuration with the effective date and time of the business interaction. See "Working with Multiple Pending Configurations" for more information.

Command	Description
Cancel	Select to: • Cancel a business interaction. You cannot cancel a business interaction when it is a parent business interaction with one or more active child business interactions. See "Canceling a Business Interaction" for more information. • Cancel a request for service with a Pending status. You must create a new service order to re-establish canceled services.
Cancel Hierarchy	Select to cancel all of the business interactions in a hierarchy. You cannot cancel a business interaction hierarchy when it contain one or more child business interactions. See "Canceling a Business Interaction" for more information
Complete	Select to: • Complete a business interaction after all changes included in it have been made and are ready to be processed. See "Completing a Business Interaction" for more information. • Indicate that a service has completed successfully. The service status is updated to In Service.
Complete Hierarchy	Select to complete all of the business interactions in a hierarchy. See "Completing a Business Interaction" for more information.
Deactivate	Select to indicate that an entity is unavailable to support services or other resources. The inventory status is changed to Unavailable.
Disassociate Business Interaction	Select to remove a business interaction from an entity.
Disconnect	Select to disconnect a service, pipe, or connectivity. When you select this option, the resource status changes to Pending Disconnect. After the request to disconnect the service is completed, the status changes to Disconnected. You cannot disconnect a member service unless its parent network service has an active (In Progress) service configuration. You see an error message if you try to disconnect a member service when the parent network service has no active configuration. See "About Network-Oriented Services" for more information about network and member services.
Issue Configuration	Select to change the status of service configurations in a business interaction from Designed to Issued status. Service configurations already in Issued status are not affected. The status of the business interaction itself is not affected by this operation.
Map Signal Structure	Select to manually associate a pipe with a signal structure when the entity has not already been associated with a Pipe entity through the specification. See "Mapping a Signal Structure to a Pipe" for more information.
Resume	Select to reactivate a suspended service.

Command	Description
Snapback	Select to transition a telephone number from Ported Out state to Unassigned. See *UIM Base Cartridges Guide* for more information.
Suspend	Select to render a service temporarily nonfunctional. The resource assignments are maintained with an assignment status of Assigned. When you select this option, the status changes to Suspended. You can resume or disconnect a suspended service. You can also suspend a service that is in Pending Disconnect status.
Validate	Select to validate an entity or configuration. See "Validating Entities and Entity Configurations" for more information.

Related Topics

Working in Entity Summary Pages

Managing Entity Life Cycles

Many types of entities have a life cycle that you can manage. A life-cycle-managed entity has a set of statuses and transitions through which it moves over time. An entity's status is displayed in the Search Result section, Summary pages, and in page sections that display information about an entity.

> **Note:**
>
> An entity's inventory status is different from its assignment status. The inventory status reflects the entity's life cycle and the assignment status reflects whether it has been assigned as a resource.

The current inventory status of an entity governs which actions you can take and which statuses it can move to. For example, a service in Pending status can move only to In Service or Canceled status. See *UIM Concepts* for more information. See "Changing Entity Statuses" for information about changing an entity's status.

When you change the status of a parent entity, the status of any child entity in its hierarchy is also changed. For example, if you deactivate a logical device, all logical devices in the hierarchy are also deactivated.

All entities that can be included in business interactions are life-cycle managed. An entity's status and transitions can be different in the context of a business interaction than they are in current inventory. See "Working with Business Interactions" for more information.

Life cycles of configurations that are included in engineering work orders can be controlled by the life cycle of the work order. See "Controlling Configuration Version Life Cycles from Engineering Work Orders".

Changing Entity Statuses

A life-cycle-managed entity moves through a series of transitions that change its status. The transitions can occur automatically when rulesets are triggered or as the result of a manual action in UIM.

To change entity statuses:

1. Open the Summary page for an entity.

   See "Opening Entity Summary Pages" for more information.

2. From the **Actions** menu, select the command for the transition you want to make.

   The available commands reflect transitions that are valid for the entity in its current status. After you select a command, the Summary page refreshes and the entity's status is updated.

Related Topics

Managing Entity Life Cycles

Working with Entity Hierarchies

Many entities include hierarchies of child entities. The hierarchy can be any number of levels deep, so a child entity can also be a parent. An entity can have any number of children, but only one parent. In addition to child entities of the same type, some hierarchies can include additional kinds of entities. For example, a logical device hierarchy can include not only other logical devices, but also device interfaces.

In some cases, the entities that you can add to a hierarchy are constrained by relationships between entity specifications. For example, if a Logical Device specification includes specification relationships to one or more other Logical Device specifications, then only logical devices based on the related specifications can be added to the hierarchy.

An entity with a hierarchy includes a Hierarchy section in its Summary page. This section displays a collapsible tree view of child entities descending from the entity you are viewing. You use this section to add and remove child entities. Child entities appear in a Hierarchy section as clickable links, which enable you to navigate to the child entity Summary page.

Summary pages for some types of entities also include a Parent section that displays a link to the parent entity. If the entity does not currently have a parent, you can add one. You can also remove a parent entity relationship.

See the following topics for more information about working with entity hierarchies:

- Adding Child Entities
- Removing Child Entities
- Adding Parent Entities
- Deleting Parent Entities

Adding Child Entities

You can add as many child entities to an entity as you require. You can create a nested hierarchy of entities by adding child entities that themselves already have children or by adding the children directly. You can add child entities to any entity that appears in the hierarchy.

You cannot add child entities that would create circular relationships. For example, you cannot add the same entity to more than one place in the same hierarchy. UIM displays an error message if you attempt to add an entity that is not valid in that location.

To add a child entity:

1. Open the Summary page for an entity to which you want to add a child entity.

   See "Opening Entity Summary Pages" for more information.
2. In the Hierarchy section, expand the hierarchy to the level of the immediate parent of the child you want to add.
3. Right-click the parent of the new child entity, then select **Add Child**. (In some cases, the command is customized to the reflect the entity type.)

   The Search page appears.
4. Do one of the following:
   - Search for an existing child entity. See "Searching for Entities" for more information.
   - Create a new child entity. See "Creating Entities " for more information.
5. In the Search Results section, select the entity you want to be the child.
6. Click **OK**.

   The Hierarchy section in the Summary page is updated to include the entity you added. Click the entity name to view the child entity in the child entity Summary page.

Related Topics

Removing Child Entities

Working with Entity Hierarchies

Removing Child Entities

You can remove a child entity in the Hierarchy section of an entity's Summary page. This is equivalent of going to the child entity's Summary page and removing the child's parent.

You can remove child entities from any entity displayed in the Hierarchy section.

To remove a child entity:

1. Open the Summary page for an entity from which you want to remove a child entity.

   See "Opening Entity Summary Pages" for more information.
2. In the Hierarchy section, expand the hierarchy to the level of the child you want to remove.
3. Right-click the child entity that you want to remove, then select **Remove**.

   The entity is removed from the hierarchy.

Related Topics

Adding Child Entities

Working with Entity Hierarchies

Adding Parent Entities

You can define for an entity a single parent entity. Adding a parent entity establishes the same relationship as if you had added the current entity as a child from the parent entity's Summary page.

You can select as parent entities only active entities. Also, you cannot add an entity that would create a circular relationship. For example, you cannot add an entity as a parent that is already a child in the same hierarchy. UIM displays an error message if you attempt to add a parent entity in an invalid location.

Not all entities support hierarchies. Summary pages contain Parent sections only when the entity supports hierarchies.

To add a parent entity:

1. Open the Summary page for an entity to which you want to add a parent entity.

   See "Opening Entity Summary Pages" for more information.
2. In the Parent section, click **Associate**.
3. Do one of the following:
   - Search for an existing parent entity. See "Searching for Entities" for more information.
   - Create a new parent entity. See "Creating Entities " for more information.
4. In the Search Results section, select the entity you want to be the parent.
5. Click **OK**.

   The Parent section in the Summary page refreshes to include the entity.

Related Topics

Deleting Parent Entities

Working with Entity Hierarchies

Deleting Parent Entities

If you want to disassociate an entity from its parent, you can delete it from the Parent section of the entity's Summary page. This is equivalent to deleting the entity from the hierarchy in the parent entity's Summary page.

To delete a parent entity:

1. Open the Summary page for an entity from which you want to delete a parent entity.

   See "Opening Entity Summary Pages" for more information.
2. In the Parent section, select an entity to delete.
3. Click **Delete**.

   The parent entity is removed from the Parent section, and the **Associate** button is enabled.

Related Topics

Adding Parent Entities

Working with Entity Hierarchies

Working with Entity Configurations

You can define configurations for some types of entities. Configurations enable you to record facts about the entity that change over time and maintain a history of successive versions. For example, when you add a new VPN site to an MPLS VPN service, you can create a new version of the service configuration to reflect the change.

The following types of entities can have configurations:

- Flow Interfaces
- Logical devices
- Logical device accounts
- Networks
- Pipes
- Places (of type Site only)
- Services

You can add new versions to a configuration as the entity evolves over time. Typically, before you can add a new version, the previous version must have gone through its entire approval cycle and be in Completed status. (You can also cancel a version in In Progress status and then create a new version.) See "Managing Entity Life Cycles" and for more information.

When you create a new version of a configuration, it is initially the same as the previous version, except for the ID, name, and version number. You can make any changes required for the new version.

Configurations are separate entities that are defined by specifications. The specification of the base entity determines which specifications can be used for its configurations. When you add a configuration, you can choose from among the configuration specifications that allowed by the base entity specification.

Configurations include two features not available in other entities:

- *Configuration items* define the content of the configuration. They are arranged hierarchically and display according to the order set up in configuration specification. Some items are included by default in the configuration. Others you must add manually.
- *Specification options* define which types of entities can be assigned to or referenced by configuration items. A configuration item with a specification option includes a list of the specification types that are valid for that item. You choose the appropriate specification for the item, then you assign or reference an entity of that type.

Multiple Pending Configurations

You can have more than one pending configuration for some services. You can have multiple pending configurations, if the functionality is enabled, with pending configurations spread over a period of time for non-network services. So, you can add a new configuration version before the previous version is in Completed status. For multiple pending configurations, you must associate each configuration to a Business Interaction. The multiple pending functionality is enabled depending on a system property for the UIM installation. See "Working with Multiple Pending Configurations" for more information.

Understanding Entity Configurations

See the following topics for more information about working with entity configurations:

- Working in Configuration Summary Pages
- Adding the First Version of a Configuration to an Entity
- Adding Additional Configuration Versions
- Managing Configuration Version Life Cycles
- Opening Configurations
- Working with Configuration Items
- Configuration New Page
- Working with Multiple Pending Configurations

Working in Configuration Summary Pages

Entity configurations are displayed in Configuration Summary pages. Configuration Summary pages are similar to entity pages, with two major differences:

- The **Actions** menu contains different commands.
- Configuration Summary pages include a Configuration Items section. See "Working with Configuration Items".

Pipe Configuration Summary pages are different from others. See "Working with Pipe Configurations" for more information.

Configuration Summary Actions Menu

The **Actions** menu in Configuration Summary pages enables you control manage various aspects of configurations, including life cycle, validation, and auto-assignment of resources. These commands are in alphabetical order.

Command	Description
Approve	Select to approve a configuration version. See "Managing Configuration Version Life Cycles" for more information.
Associate Business Interaction	Select to associate a business interaction to a configuration version. The configuration summary must be set in the context of the desired business interaction or this action is disabled. You can use this when you want a configuration version associated to a business interaction, for instance for multiple pending configuration functionality support. This action overrides the start date of the configuration with the effective date and time of the business interaction. See "Working with Multiple Pending Configurations" for more information.
Auto-Configure	When enabled by a ruleset, select to automatically assign resources. See "Assigning Resources Automatically" for more information.
Cancel	Select to cancel a configuration version. See "Managing Configuration Version Life Cycles" and "Canceling a Configuration Version with Multiple Pending" for more information.

Command	Description
Complete	Select to complete a configuration version. See "Managing Configuration Version Life Cycles" and "Completing a Configuration Version with Multiple Pending" for more information.
Create New Version	Select to create a new configuration version. Available only when the previous version is complete. See "Adding Additional Configuration Versions" for more information.
Disassociate Business Interaction	Select to remove a business interaction from a configuration version. See "Working with Multiple Pending Configurations" for more information.
Issue	Select to issue a configuration version. See "Managing Configuration Version Life Cycles" for more information.
Validate	Select to validate the configuration. See "Validating Entities and Entity Configurations" for more information.

Adding the First Version of a Configuration to an Entity

The following procedure describes how to add a new configuration for an entity with no previously defined configurations. See "Adding Additional Configuration Versions" if you are adding a new version for an existing configuration.

To add the first version of a configuration:

1. Open the Summary page of the entity for which you are creating a configuration.

   See "Opening Entity Summary Pages" for more information.

2. In the Configurations section, click **Create**. The **Create** button is active if one of the following is true:

   - The configuration entity has no existing configurations.
   - The previous configuration version has a status of Completed.
   - Multiple pending configuration functionality is enabled and the entity is a non-network service.

   The Configuration Information - New Version page appears.

3. (Optional) Change the automatically generated ID and name.

   The default ID and name are based on the ID and name of the base entity with the version number of the configuration added.

4. (Optional) In the **Start Date** field, enter or select the date at which the configuration becomes valid.

   The field displays the current date by default.

5. Click **Save and Close**.

   The Configuration Summary page appears.

6. Specify configuration characteristics and specify configuration item details.

See "Viewing, Entering, and Changing Characteristics" and "Working with Configuration Items" for more information.

Related Topics

Adding Additional Configuration Versions

Working with Entity Configurations

Adding Additional Configuration Versions

You add additional configuration versions different ways depending on if you need multiple pending configuration functionality. In all cases, after the first version of a configuration has been completed, you can add versions when the configuration details change.

If multiple pending configuration functionality is enabled, then you can also add additional configuration versions for non-network service entities before the previous version reaches Completed status.

You can create new configuration versions and change their configuration item details in the following ways:

- From the Summary or Configuration page when the previous configuration is in Completed status, see "Adding Additional Configuration Versions without Multiple Pending".
- From the Service summary page when multiple pending configuration functionality is enabled (for a non-network service), see "Adding Additional Configuration Versions for Services with Multiple Pending".

Related Topics

Adding the First Version of a Configuration to an Entity

Working with Entity Configurations

Working with Multiple Pending Configurations

Adding Additional Configuration Versions without Multiple Pending

Follow these steps if you do not need multiple pending configuration versions.

To add a configuration version:

1. Do one of the following:
   - Open the Summary page of the base entity.
   - Open the Configuration page of the previous version of the configuration.
2. In the Configurations section of the Summary page, click **Create** or from the **Actions** drop down, select **Create New Version**.

   The Configuration Information - New Version page appears.
3. (Optional) Change the name and automatically generated ID.

   The ID and name are incremented from the previous version.
4. (Optional) In the **Start Date** field, enter or select the date at which the configuration becomes valid. If the configuration version is in the context of a Business Interaction, the Start Date field will take the same value as the Effective Date on the Business Interaction.

   The field displays the current date by default.

5. Click **Save and Close**.

   The Configuration page appears, displaying the values from the previous version.

6. Change configuration characteristics and specify configuration item details as required.

   See "Viewing, Entering, and Changing Characteristics" and "Working with Configuration Items" for more information.

Adding Additional Configuration Versions for Services with Multiple Pending

When multiple pending configurations are enabled, you can add versions for changing the configuration details when:

- You want multiple open or pending configuration versions for a non-network service, and
- There are no configuration versions, or the preceding configuration is still in progress.
- If previous configuration pending version exists, each is also associated to a Business Interaction.
- You want multiple open or pending configuration versions on the same day but with different timestamp values.

To add a configuration version:

1. Select Business Interactions and do the following:
   a. In the Business Interaction search page, select **Create**.
   b. Select the desired specification (for example, Service Order).
   c. Enter the name as it is required.
   d. In the **Effective Date** field, provide the value of the due date and time or start date and time of the configuration version. This is the date and time when the configuration version becomes valid.

      > **Note:**
      >
      > If you select a **Workflow Template**, the system displays current date and time in **Effective Date** and changes the field as non-editable.

   e. Click **Save and Continue**.
2. Open the Summary page of the Service entity.
3. Expand the Configurations section of the Service entity.
4. In the Configurations section, click **Create**.

   If multiple pending configurations is disabled, the **Create** button is active only if the previous version is in Completed or Canceled status. After you click **Create**, the Configuration Information - New Version page appears.

   The Configuration page appears, displaying the values from the previous version.

5. (Optional) Change the name and automatically generated ID.

   The ID and name are incremented from the previous version.

6. The **Start Date** field defaults to the Effective Date and time of the associated Business Interaction. You can change the Start Date and time from the Configuration Information - New Version page.

> **Note:**
>
> You can create multiple pending configurations on the same day but with different timestamp values.

7. Click **Save and Close**.

   The Service Summary is displayed with the new configuration version.

8. Select the new configuration version.

9. Change configuration characteristics and specify configuration item details as required.

   See "Viewing, Entering, and Changing Characteristics" and "Working with Configuration Items" for more information.

Working with Multiple Pending Configurations

For certain types of services, UIM supports multiple pending configurations where more than one configuration may be in progress at a given time. Multiple pending configuration functionality is only available for non-network services. You determine if a service is a network service by the **Network Oriented Service Type** attribute setting on the service entity. For network services only one configuration can be in progress at a time.

Multiple pending configuration functionality is enabled with a system property in the **system-config.properties** file. The default is for the functionality to be enabled. See *UIM System Administrator's Guide* for information on this property.

You can create an in-progress configuration before or after any existing in-progress configuration when:

- The multiple pending functionality is enabled in the system property file.
- Each configuration version is associated to its own Business Interaction.
- The entity for the configuration is a Service entity and it is a non-network service.

The effective date on the Business Interaction determines the start date and time value for the configuration. You can create configurations before or after a configuration that is in progress, however the start date must always be on or after the current date.

Each pending configuration version must have a different start date and time; no two pending configuration versions can have the same start date and time.

Often, when you change a configuration, it affects other pending configurations to reflect your change. The configuration items include their identifier in the name so you can see the cascading effects in future configurations.

See *UIM Concepts* for more information.

Adding to or Removing Resources from a Pending Configuration Version

With multiple pending configuration functionality, you can add and remove resources across multiple configuration versions that are in progress. For example, you can create a new configuration version and add a new telephone number. Then, you can add another future-dated configuration, and remove a telephone number. This results in two configuration versions being in progress.

See "Adding Additional Configuration Versions" for information on how to add more than one pending configuration.

Changing the Date for a Pending Configuration Version

With multiple pending configuration functionality, you can have more than one pending configuration version for a non-network service. If it is not associated to a Business Interaction, you must first select or create a Business Interaction and associate it to the service configuration version. To change the date of a pending configuration when the configuration version is associated to a Business Interaction:

1. Open the Configurations section of the non-network Service entity.
2. Select the configuration version for the date change.

   The Service Configuration Version page appears.
3. Click the **Associated To Business Interaction** field value to display the associated Business Interaction entity.

   The Business Interaction Summary page appears.
4. Click the **Edit** button.

   The Business Interaction Information page appears for edit.
5. Change the date value of the **Effective Date** field.
6. Click **Save and Close**.

   The date is changed for the Business Interaction and also for the configuration's **Start Date** field. To view the configuration, select its ID value in the Business Interaction Items list.

See *UIM Concepts* for more information.

Canceling a Configuration Version with Multiple Pending

You can cancel a pending configuration version by canceling the associated Business Interaction when multiple configurations versions are pending for a non-network Service.

You can also cancel a pending configuration version that is in between two in-progress configuration versions, provided that no resource assignment changes are made in the configuration version that immediately succeeds the configuration version that you are canceling.

> **Note:**
>
> If a service has multiple pending configurations, you cannot cancel the first service configuration version, regardless of the status of the resource assignments. However, if a service has only one service configuration, then you can cancel that service configuration version.

You cannot cancel a service configuration version on a service that is not in Pending Disconnect status if there are resource assignment changes in the future-dated service configuration version. However, you can cancel a service configuration version on a service that is in Pending Disconnect status, even if resource assignments are updated and are in Pending Unassign status in the future-dated disconnect service configuration version.

To cancel a pending configuration when the configuration is associated to a Business Interaction:

1. Open the Configurations section of the non-network Service entity.
2. Select the configuration version that you want to cancel.

   The Service Configuration Version page appears.
3. Click the **Associated To Business Interaction** field to display the associated Business Interaction entity.

   The Business Interaction Summary page appears.
4. Click the **Actions** menu, and click **Cancel** option.

   The Business Interaction and the associated service configuration version are canceled.

See *UIM Concepts* for more information.

Completing a Configuration Version with Multiple Pending

You can complete a pending configuration version by completing the associated Business Interaction when multiple configurations versions are pending for a non-network Service.

If a non-network Service entity contains multiple pending configuration versions, you must first complete the initial version of the pending configuration before completing the immediate succeeding version. For example, if a non-network Service entity contains five configuration versions, you must first complete configuration version 1, and then complete configuration version 2, and so on.

To complete a pending configuration when the configuration is associated to a Business Interaction:

1. Open the Configurations section of the non-network Service entity.
2. Select the configuration version that you want to complete.

   The Service Configuration Version page appears.
3. Click the **Associated To Business Interaction** field to display the associated Business Interaction entity.

   The Business Interaction Summary page appears.
4. Click the **Actions** menu, and click **Complete** option.

   The Business Interaction and the associated service configuration version are completed.

See *UIM Concepts* for more information.

Disconnecting a Service with Multiple Pending Configurations

To disconnect a service with multiple pending configurations, you must have the latest service configuration version associated to a Business Interaction. To disconnect a service with one or more pending configurations (when the configurations are associated to Business Interactions):

1. Open the Service entity that you want to disconnect.
2. Click the **Actions** menu, and click **Disconnect** option.

   A new configuration version is created and the service transitions to Pending Disconnect status. The default for the start date of the new configuration version is the date of the latest pending configuration version plus one calendar day.

See "Changing the Date for a Pending Configuration Version" for more information.

Related Topics

Adding Additional Configuration Versions for Services with Multiple Pending

Working with Entity Configurations

Managing Configuration Version Life Cycles

Configuration versions have a life cycle that you can manage either manually or by using rulesets.

> **Note:**
>
> The configuration version status is different from the status of its parent entity.

Command	Transitions from Status	Transitions to Status
Approve	In Progress	Designed
Issue	Designed	Issued
Complete	Issued	Complete
	Pending Cancel	Canceled
Cancel	In Progress	Canceled
	Designed	Canceled
	Issued	Pending Cancel

To change configuration version statuses:

1. Open the Summary page for a configuration.

   See "Opening Configurations" for more information.

2. From the **Actions** menu, select the command for the transition you want to make.

   The available commands reflect transitions that are valid for the configuration in its current status. After you select a command, the Configuration Summary page refreshes and the configuration version's status is updated.

Opening Configurations

Entities that support configurations have a Configurations section in their Summary pages. This section displays the existing configurations and statuses. Versions that have been completed cannot be modified. You must create a new version to introduce any changes to the configuration.

To open a configuration:

1. Open the Summary page for an entity.
2. In the Configurations section, click the version number link of the configuration you want to open.

   The Configuration page appears. The hierarchy in the Configuration Items section is collapsed but includes the default selection of configuration items.

Related Topics

Viewing, Entering, and Changing Characteristics

Viewing Tags on Configuration Items

Working with Configuration Items

Working with Entity Configurations

Managing the Configuration Hierarchy Display

Configurations often contain complex hierarchies of configuration items displayed in a collapsible tree view. You can expand and collapse individual lines in the tree view by clicking the triangles next to them. You can also expand and collapse the entire or hierarchy or portions of it.

To expand or collapse the hierarchy as a whole:

- Do one of the following:
  - In the **View** menu in the Configuration Items section of a Configuration Summary page, select **Expand All** or **Collapse All**.
  - Select the highest-level row in the hierarchy, then right-click and select **Expand All** or **Collapse All**.

  The hierarchy expands to display all configuration items.

To expand or collapse a section of the hierarchy:

1. In the Configuration Items section of a Configuration Summary page, select a row in the hierarchy.
2. In the **View** menu, select **Expand All Below** or **Collapse All Below**.

   The hierarchy below the select row expands to display all configuration items.

To define the hierarchy and order of configuration items, refer to the configuration specification definition. For instructions on how to define configuration specifications in Design Studio, see the Design Studio Help.

Working with Configuration Items

Configuration items define a hierarchy of information about how a configuration is implemented. Configuration items can be used to assign resources to a configuration or to refer to entities that have significance to the configuration. For example, a place configuration for a VPN site can include configuration items for resources that are consumed, such as PE VRF resources and CE service locations. Similarly, a cable TV subscription service configuration could include a configuration item for a reference to an access controller. In this case, the resource is not consumed, it is referenced.

Configuration items can also be used to collect information rather than assign resources. For example, a configuration item in a VPN service configuration could have a characteristic that defines the topology of a VPN service as meshed, hub-and-spoke, or hybrid.

Configuration items can contain other configuration items, so information can be nested to reflect how resources are organized. For example, a configuration item for PE VRF resources can include other configuration items such as route distinguishers, route targets, and protocols.

The selection, arrangement, order, and content of configuration items is defined in the specification for the configuration. The specification defines which configuration items are required, minimum and maximum quantities, the characteristics applied to items, and specification options that enable you to assign or reference resources to configuration items.

If a configuration specification defines a non-zero minimum quantity for a configuration item, that minimum quantity is created automatically when you create the configuration.

The configuration name includes two portions:

- The name set up in Design Studio.
- The system generated identifier for the configuration item.

Then, you can uniquely identify a configuration item when changes are cascaded forward. These changes can occur from multiple pending configurations. See "Working with Multiple Pending Configurations" for information on this functionality.

See the following topics for more information about working with configuration items:

- Adding Configuration Items
- Assigning Entities to Configuration Items
- Referencing Entities to Configuration Items
- Assigning Resources Automatically
- Viewing, Entering, and Changing Characteristics
- Viewing Tags on Configuration Items
- Renaming Configuration Items
- Changing the Entity Assigned to or Referenced from a Configuration Item
- Removing Configuration Items

Adding Configuration Items

When you add a configuration to an entity, the configuration automatically includes the required configuration items in the required quantities. You can add additional configuration items that are defined in the configuration's specification, up to the maximum quantity.

When you add a configuration item that includes specification options, you must assign to the item an entity based on one of the specifications. In some cases where rulesets have been defined, entities are assigned automatically. See "Assigning Entities to Configuration Items" for more information.

To add configuration items:

1. Open the Configuration page for the configuration to which you want to add configuration items.

   See "Opening Configurations" for more information.
2. In the Configuration Items section, expand the hierarchy until you reach the folder level that is immediately above the configuration item you want to add.
3. Right-click the folder and select **Add Config Item**.

   The Choose Configuration Items to be Added dialog box appears, displaying a table of configuration items that are valid in this location in the hierarchy.
4. In the Quantity column, specify quantities for each item you want to add.

You can add quantities only up to the maximum defined for an item. Items that have reached their maximum quantity cannot be added.

5. Click **Add Items**.

   The Configuration Items hierarchy refreshes to show the new items.

Related Topics

Assigning Resources Automatically

Assigning Entities to Configuration Items

Referencing Entities to Configuration Items

Viewing, Entering, and Changing Characteristics

Viewing Tags on Configuration Items

Renaming Configuration Items

Changing the Entity Assigned to or Referenced from a Configuration Item

Removing Configuration Items

Assigning Entities to Configuration Items

When a configuration item is defined for assignment, you use it to select entity to be consumed. You select a specification and then select an entity based on that specification.

UIM can be configured to assign resources automatically. See "Assigning Resources Automatically".

To assign entities to configuration items:

1. Open the Configuration page for the configuration to which you want to assign resources.

   See "Opening Configurations" for more information.

2. In the Configuration Items section, expand the hierarchy until you reach the configuration item to which you want to assign an entity.
3. In the Specification column, select the specification of the resource you want to assign. If only one specification is valid, it is automatically displayed.
4. In the Actions column, click **Assign**.

   The Assign to Configuration page appears.

5. Do one of the following:
   - Search for an existing entity to assign. See "Searching for Entities" for more information.
   - Create a new entity to assign. See "Creating Entities " for more information.
   - In the Search Results section, select an entity then click **OK**

   The entity you assigned appears as a link in the configuration item. You can click the link to go to the Summary page for the entity.

Related Topics

Adding Configuration Items

Referencing Entities to Configuration Items

Renaming Configuration Items

Changing the Entity Assigned to or Referenced from a Configuration Item

Removing Configuration Items

Referencing Entities to Configuration Items

If a configuration item is defined for entity reference rather than assignment, you use it to refer to an entity that has significance to the configuration. You select a specification, then select an entity based on that specification to be referenced by the configuration.

To reference entities from configuration items:

1. Open the Configuration page for the configuration in which you want to reference an entity.

   See "Opening Configurations" for more information.
2. In the Configuration Items section, expand the hierarchy until you reach the configuration item to which you want to reference an entity.
3. In the Specification column, select the specification of the entity you want to reference. If only one specification is valid, it is automatically displayed.
4. In the Actions column, click **Reference**.

   The Reference Entity to Configuration page appears.
5. Do one of the following:
   - Search for an existing entity to reference. See "Searching for Entities" for more information.
   - Create a new entity to reference. See "Creating Entities " for more information.
   - In the Search Results section, select an entity and click **OK**

   The entity you referenced appears as a link in the configuration item. You can click the link to go to the Summary page for the entity.

Related Topics

Adding Configuration Items

Assigning Entities to Configuration Items

Renaming Configuration Items

Changing the Entity Assigned to or Referenced from a Configuration Item

Removing Configuration Items

Assigning Resources Automatically

UIM can be customized to automatically assign resources based on default values. When you automatically assign resources, appropriate configuration items are created and resources automatically assigned to them.

Automatic assignment is enabled by rulesets. See *UIM Concepts* and *UIM Developer's Guide* for more information about rulesets. Automatic assignment can take place at the level of individual configuration items or at the level of an entire configuration. Automatic assignment for individual items occurs when you add the item to a configuration (or when it is added as a default item).

To automatically assign resources to a configuration:

1. Open the Configuration page in which you want to automatically assign resources.

   See "Opening Configurations" for more information.

2. From the **Related Pages** menu, select **Auto Configure**.

   UIM automatically assigns resources and redisplays the Configuration page. You can see the newly assigned items by expanding the hierarchy in the Configuration Items section.

Related Topics

Adding Configuration Items

Assigning Entities to Configuration Items

Viewing, Entering, and Changing Characteristics

Viewing Tags on Configuration Items

Renaming Configuration Items

Changing the Entity Assigned to or Referenced from a Configuration Item

Removing Configuration Items

Viewing, Entering, and Changing Characteristics

Configuration items can have characteristics that store information about the item. These characteristics are defined in the specification for the configuration. For example, a configuration item for a protocol could include characteristics that define how the protocol is implemented. Characteristics can also be assigned to the configuration itself, at the top level of the configuration item hierarchy.

Characteristics can take several forms:

- Text fields
- Check boxes
- Lists
- Calendar fields

You view, enter, and change values for specific configuration items and for the configuration as a whole.

To view, enter, or change characteristics:

1. Open the Configuration page for the entity for which you want to change, view, or enter characteristics.

   See "Opening Configurations" for more information.

2. In the Configuration Items section, expand the hierarchy until you reach the item that has the characteristics you want.

3. Do one of the following:

   - Edit characteristics for the entire configuration.

     a. Expand a configuration item.

        An item called Characteristics appears.

     b. Right-click Characteristics and select **Maintain Characteristics**.

The Configuration Item Characteristics dialog box appears, displaying all of the item's characteristics and their values.

c. Edit the configuration as necessary and click **Save and Close**.

- Edit characteristics for a single configuration item:

a. Expand a configuration item.

An item called Characteristics appears.

b. Expand the Characteristics item.

Separate items for all the item's characteristics appear. The value of each characteristic is shown.

c. Right-click a characteristic and select **Edit Characteristic**.

The Configuration Item Characteristics dialog box appears, displaying the characteristic value.

d. Edit the configuration as necessary and click **Save and Close**.

Viewing Tags on Configuration Items

You can view tags on configuration items.

To view tags on configuration items:

1. Open the Configuration page for the entity for which you want to view tags.

   See "Opening Configurations" for more information.

2. In the Configuration Items section, expand the hierarchy until you reach the item that has the tags you want to view.

Related Topics

Working with Tags

Viewing Tags on Configuration Items for a Specification

Viewing Tags

Deleting Tags

Renaming Configuration Items

You can change the names that are automatically assigned to configuration items.

To rename a configuration item:

1. Open the Configuration page for the configuration that includes the item you want to rename.

   See "Opening Configurations" for more information.

2. In the Configuration Items section, expand the hierarchy until you reach the configuration item you want to rename.

3. Right-click a configuration item and select **Rename Item**.

   The Rename Configuration Item dialog box appears. You can only modify the portion of the name without the configuration item identifier.

4. Enter the new name for the item and click **Rename Configuration Item**.

The configuration item is renamed.

Related Topics

Adding Configuration Items

Assigning Entities to Configuration Items

Assigning Resources Automatically

Viewing, Entering, and Changing Characteristics

Viewing Tags on Configuration Items

Changing the Entity Assigned to or Referenced from a Configuration Item

Removing Configuration Items

Changing the Entity Assigned to or Referenced from a Configuration Item

You can change the entity that is assigned to or referenced a configuration item. You can change resources that were assigned automatically as well as those that were assigned manually.

To change a resource assigned to or referenced from a configuration item:

1. Open the Configuration page for the configuration that contains the entity assignment or reference that you want to change.

   See "Opening Configurations" for more information.

2. In the Configuration Items section, expand the hierarchy until you reach the configuration item whose assignment or reference you want to change.
3. In the Actions column, click the **Unassign** or **De-Reference** link.

   The assigned or referenced entity is removed. You can now assign or reference a different entity.

Related Topics

Adding Configuration Items

Assigning Entities to Configuration Items

Referencing Entities to Configuration Items

Assigning Resources Automatically

Viewing, Entering, and Changing Characteristics

Viewing Tags on Configuration Items

Renaming Configuration Items

Removing Configuration Items

Removing Configuration Items

You can remove configuration items. You cannot remove a configuration item if doing so violates the minimum quantity of the item defined for the configuration.

To remove a configuration item:

1. Open the Configuration page for the configuration that includes the item you want to remove.

   See "Opening Configurations" for more information.

2. In the Configuration Items section, expand the hierarchy until you reach the configuration item you want to remove.

3. Right-click the configuration item and select **Remove Item**.

   The configuration item is removed. An error message appears if you try to remove an item that is required by the item's minimum quantity or if you are attempting to remove an item that has an assignment or a reference.

Related Topics

Adding Configuration Items

Assigning Entities to Configuration Items

Assigning Resources Automatically

Viewing, Entering, and Changing Characteristics

Viewing Tags on Configuration Items

Renaming Configuration Items

Changing the Entity Assigned to or Referenced from a Configuration Item

Configuration New Page

You use an entity Configuration- New page to create new versions of the entity.

Field	Description
Specification	Select a specification to define the new configuration. Configurations are separate entities that are defined by specifications. The specification of the base entity determines which specifications can be used for its configurations. When you add a configuration, only valid specifications appear as options in this field.
Previous Configuration	Displays the number of the configurations created prior to this version. If you are creating the first configuration version, this value is **0**. This field is read only.
Version	Displays the version number of the configuration. This field is read only.
ID	(Optional) Edit the automatically generated ID, if necessary. The ID is based on the ID of the base entity and the version number of the configuration.
Name	(Optional) Edit the automatically generated name, if necessary. The name is based on the ID of the base entity and the version number of the configuration.
Start Date	Enter or select the date at which the configuration becomes valid. The field displays the current date by default.

Related Topics

Adding the First Version of a Configuration to an Entity

Working with Configuration Items

Opening Configurations

Validating Entities and Entity Configurations

You can validate some types of entities and configurations. By default, these validations check basic integrity, but the rulesets governing them can be customized. For example, a validation ruleset might ensure that a Service configuration includes resources in the correct quantities. See *UIM Concepts* and *UIM Developer's Guide* for more information about rulesets.

To validate an entity or entity configuration:

1. Open the Summary page for an entity.

   See "Opening Entity Summary Pages" for more information.

2. In the Configuration section, click the version number link of the configuration you want to validate.

   The Configuration page appears.

3. From the **Actions** menu, select **Validate**.

   UIM validates the entity or configuration and displays any resulting error messages in the upper part of the page. If no problems are found, no messages are displayed.

Working with Visualizations and Diagrams

A number of entities utilize visualizations or diagrams, each for a different purpose. The interface for each, however, is similar.

- Service entities include a diagram of the service topology that appears in the UTIA application. See "Working with the Inventory Topology".
- Network entities include a topological view in which you can configure the network. See "Designing a Network in the Network Topological View".
- Equipment entities include a visualization feature in which you can configure the equipment's hierarchy of child entities. See "About Equipment Visualizations".
- The UTIA application displays the topology diagram of your entire inventory. See "Working with the Inventory Topology".
- Pipe and Connectivity entities include visualizations that depict their design and enablement. See "Viewing a Pipe Enablement Visualization" and "Working with the Connectivity Design Visualization".

See the following topics for more information about working with visualizations and diagrams:

- About Visualization and Diagram Pages
- Changing the Layout
- Using the Overview Section
- Getting Information About Elements

About Visualization and Diagram Pages

Each diagram or visualization page has a different purpose and works in a somewhat different way. The basic arrangement of the page is similar for all, however:

- A large page or canvas displays the diagram or visualization. The contents of the canvas depend on the page. You can move elements in the canvas. For example, you can adjust the positions of nodes in a network diagram. Automatic layout tools are also available in some cases. See "Changing the Layout" for more information.
- A toolbar above the canvas enables you to control the view by zooming, panning, and so on.
- An overview section appears to the right of the canvas. This section enables you to move around in the diagram or visualization when zoomed in. See "Using the Overview Section" for more information.
- An information section appears below the overview, displaying information and links for the element selected in the canvas. See "Getting Information About Elements" for more information.

Changing the Layout

You can control the layout of elements in diagrams. (You can also move child entities in an Equipment visualization, but the reasons and methods for doing so are different. See "Moving Equipment within an Equipment Hierarchy"). For example, you may want to move the position of nodes in a network diagram to better illustrate their relationships.

There are two ways to change the layout:

- By selecting elements, then dragging them to new positions. After dragging elements, make sure to save their positions. If you move a network node, its edges automatically shift to reflect the node's new position.
- By clicking automatic layout buttons in the toolbar. Various different layout options are available. When you click a layout button, elements are arranged automatically into a particular kind of layout. The options you can use are described in the Help topics for the Network, Inventory Topology, and Service Topology pages.

Related Topics

About Visualization and Diagram Pages

Using the Overview Section

Getting Information About Elements

Using the Overview Section

The Overview section to the right of the canvas shows a small-scale view of the entire diagram or visualization. You can use the Overview section to orient yourself and to move the view when zoomed in.

To use the Overview section:

1. Use the **Zoom** or **Zoom In** button to zoom in on a portion of a diagram.

   The overview displays a rectangle around the portion of the diagram that you have zoomed in on. If you zoom out, the rectangle becomes larger until it disappears when the entire diagram is displayed in the main view.

2. Drag the rectangle in the overview to another location in the diagram.

   The main view of the diagram moves at its current zoom level to the new location.

Related Topics

About Visualization and Diagram Pages

Changing the Layout

Getting Information About Elements

Getting Information About Elements

You can get information about elements that you select in a diagram or visualization. When an element represents a resource in your inventory, the information section to the right of the canvas displays the name and ID of the selected element as links. You can click the links to go to the corresponding Summary page.

In some cases, you can also open an entity Summary page by right-clicking an element and selecting **Summary Page**.

To get information about elements:

1. In the toolbar, click the **Select** button.

   The cursor changes to a pointer.

2. Click an element in the diagram or visualization.

   The entity name and ID appear in the information section to the right of the diagram.

3. (Optional) Open the Summary page of an entity by clicking a link in the information section.

   The Summary page appears.

Related Topics

About Visualization and Diagram Pages

Using the Overview Section

Changing the Layout

Working with Resource Reservations

Resources can be reserved by an entity or process to prevent them from being used by another entity or process. Any consumable resource entity (except for Pipe entities) can be reserved as long as it:

- Is not shareable. If the entity's specification is defined such that the entity can be assigned to multiple entities, the entity cannot be reserved.
- Has not been assigned. The Resource Assignment status must be Unassigned.
- Is not already reserved. Search results for entity types that can be reserved include a Reservation Type column that displays **Shortterm** or **Longterm** when a resource is reserved.
- Does not have a Blocked condition that prevents the assignment. Search results include a Condition Type column that shows the conditions applied to an entity. See "Working with Conditions" for more information about conditions.

You can create and search for reservations from the navigation section. Reservations do not have Summary pages, however.

You reserve resources by associating them to a reservation. Each reservation has a single ID no matter how many entities are associated to it. You can add resources to a new reservation that you create in the process of adding the resources. See "Creating New Reservations" for more information. You can also add resources to an existing reservation. See "Updating Reservations" for more information.

> **Note:**
>
> You can remove a resource from a reservation only from the resource's Summary page. See "Removing Resources from Reservations" for more information.

By default, UIM does not check reservations when resources are assigned. As a result, a reserved resource can be assigned to any entity or process.

If UIM is configured to check reservations, it requires that reservations be redeemed before a reserved resource can be assigned. See "Redeeming Reservations" for more information. See *UIM Concepts* and *UIM Developer's Guide* for information about enabling reservation checking.

Creating New Reservations

You can create new reservations and add resources to them in the following ways:

- From the navigation section. See "Creating Reservations from the Navigation Section".
- From the Summary page of a resource that you want to reserve. See "Creating a Reservation from a Summary Page".
- From the Search Results section of a search for resource entities. See "Creating Reservations from a Search Results Page".

When you create a new reservation, you specify its type as either **Shortterm** or **Longterm**. The type defines the duration of the reservation's validity, unless you supply a specific expiry date. By default, **Shortterm** is defined as 10 minutes and **Longterm** as 30 days. These definitions can be changed by modifying rulesets and can be set to different lengths for different types of entities. See *UIM Developer's Guide* for more information.

Related Topics

Updating Reservations

Removing Resources from Reservations

Redeeming Reservations

Creating Reservations from the Navigation Section

When you create a new reservation starting from the navigation section, you must specify the resources it reserves. You can update the reservation later to include new resources.

To create a reservation from the navigation section:

1. In the **Inventory - Resources** group of the navigation section, click **Reservations**.
2. In the Search Results section, click **Create**.
3. In the **Reservation For Type** list, select the type of entity or process for which the reservation is made.

The options in the list vary depending on how UIM is configured. If reservation checking is enabled, this value must be specified during reservation redemption. See "Redeeming Reservations" for more information.

4. In the **Reserved For** field, enter text that identifies the agent making the reservation.

   If reservation checking is enabled, this value must be specified during reservation redemption. See "Redeeming Reservations" for more information.

5. In the **Reservation Type** list, select **Shortterm** or **Longterm**.
6. In the **Start Date** field, enter the date on which the reservation becomes effective.
7. (Optional) In the **Expiry Date** field, enter the date on which the reservation expires.
8. (Optional) In the **Reason** field, enter a reason for the reservation.
9. In Add Resources section, click **Resource Type**.

   A list of entity types appears.

10. Select the type of resource you want to reserve.

    The entity Search page appears.

11. Do one of the following:
    - Enter search criteria in the Search section and click **Search** to reserve an existing entity. See "Searching for Entities" for more information.
    - Click **Create** in the Search Results section to create and reserve a new entity. See "Creating Entities " for more information.
12. In the Search Results section, select the resources you want to include in the reservation.
13. Click **OK**.

    The Reservation page displays a list of resources included in the reservation.

14. Click **Save and Close**.

    The page refreshes to show a message confirming the creation of the new reservation.

Related Topics

Creating Reservations from a Search Results Page

Creating a Reservation from a Summary Page

Creating New Reservations

Creating Reservations from a Search Results Page

To create a reservation from a Search Results page:

1. Search for the resource that you want to reserve.

   See "Searching for Entities" for more information.

2. In the Search Results section, select the resources you want to reserve.
3. From the **Actions** menu, select **Add to Reservation**.

   The Reservation Search page appears.

4. Click **Create** in the Search Results section to create a new reservation. See "Creating Entities " for more information.

The Reservation - New page appears. See "Reservation - New Page" for more information about the fields in this page.

5. In the **Reserved For** field, enter text that identifies who is making the reservation.

   This value must be specified during reservation redemption. See "Redeeming Reservations".

6. In the **Reservation Type** list, select **Shortterm** or **Longterm**.
7. In the **Start Date** field, enter the date on which the reservation becomes effective.
8. (Optional) In the **Expiry Date** field, enter the date on which the reservation expires.

   If you set a date here, it overrides the **Reservation Type** setting.

9. (Optional) In the **Reason** field, enter a reason for the reservation.
10. Click **Save and Close**.

Related Topics

Creating Reservations from the Navigation Section

Creating a Reservation from a Summary Page

Creating New Reservations

Creating a Reservation from a Summary Page

To create a reservation from a Summary page:

1. Open the Summary page for the resource that you want to reserve.

   See "Opening Entity Summary Pages" for more information.

2. From the **Related Pages** menu, select **Reservations**.

   The Reservation page appears. If a reservation is already shown, you cannot reserve the resource unless you delete the existing reservation. See "Removing Resources from Reservations".

3. Click **Create**.

   The Reservation - New page appears. See "Reservation - New Page" for more information about the fields in this page.

4. In the **Reserved for Type** list, select the type of entity or process for which the reservation is made.

   The options in the list vary depending on how UIM is configured.

5. In the **Reserved For** field, enter text that identifies who is making the reservation.

   This value must be specified during reservation redemption. See "Redeeming Reservations".

6. In the **Reservation Type** list, select **Shortterm** or **Longterm**.
7. In the **Start Date** field, enter the date on which the reservation becomes effective.
8. (Optional) In the **Expiry Date** field, enter the date on which the reservation expires.

   Define a date here to override the **Reservation Type** setting.

9. (Optional) In the **Reason** field, enter a reason for the reservation.
10. Click **Save and Close**.

The list of reservations reappears, now including the reservation you just created.

Related Topics

Creating Reservations from the Navigation Section

Creating Reservations from a Search Results Page

Creating New Reservations

Adding an Entity to an Existing Reservation from a Search Results Page

To add an entity to an existing reservation from a search results page:

1. Search for the resource that you want to reserve.
2. In the Search Results section, select the resources you want to reserve.
3. Click **Actions** and select **Add to Reservation**.

   The Reservation Search page appears.
4. Search for the reservation to which you want to add the resource.

   See "Searching for Entities" for more information.
5. In the Search Results section, select the reservation to which you want to add the resource.
6. Click **OK**.

Related Topics

Creating Reservations from the Navigation Section

Creating a Reservation from a Summary Page

Creating New Reservations

Updating Reservations

You can update a reservation's type, start date, expiry date, and reason.

To update a reservation:

1. In the **Inventory - Resources** group of the navigation section, click **Reservations**.

   The Reservation Search page appears.
2. Search for the reservation you want to update.

   See "Searching for Entities" for more information.
3. In the Search Results section, click the link for the reservation you want to update.

   The Reservation Information page appears.
4. Update the **Reservation Type**, **Start Date**, **Expiry Date**, and **Reason** fields, as required.
5. Click **Save and Close**.

   The Search Results page appears, and a note confirms that you updated the reservation.

Related Topics

Creating New Reservations

Removing Resources from Reservations

Redeeming Reservations

Removing Resources from Reservations

To remove a resource from a reservation:

1. Open the Summary page for the resource that you want to remove from a reservation.
2. From the **Related Pages** menu, select **Reservations**.

   A list of the resource's current reservations appears.
3. Select the reservation from which you want to remove the resource and click **Delete**.

   The list refreshes and the reservation is removed.

Related Topics

Creating New Reservations

Updating Reservations

Redeeming Reservations

Redeeming Reservations

The process of allocating a resource that has been reserved is called redeeming the reservation.

If resource reservation checking is enabled, UIM prompts you during resource redemption for the **Reserved For** and **Reserved for Type** values that were entered at the time the resource was reserved. If you enter the correct values, the reserved resource is assigned and removed from the reservation. If you enter incorrect values, UIM displays an error message and the resource remains reserved.

If resource reservation checking is not enabled, a reserved resource is assigned without any check.

> **Note:**
>
> Resource redemption is not supported for pipe configurations.

To redeem a reservation:

1. Select a reserved resource for assignment to a configuration item.

   The Redeem Reservation dialog box appears.
2. From the **Reserved for Type** list, select the type that was entered when the reservation was created.
3. In the **Reserved For** field, enter the text that was entered at the time the reservation was entered.
4. Click **OK**.

   The resource is assigned.

Related Topics

Creating New Reservations

Updating Reservations

Removing Resources from Reservations

Reservation - New Page

You use the Reservation - New page to create new reservations.

Reservation Information Section

Field	Description
Reserved For Type	Select the type of entity or process for which the reservation is made.
Reserved For	Identify who is making the reservation.
Reservation Type	Select the length of the reservation, either **Longterm** or **Shortterm**. The type defines the duration of the reservation's validity, unless you supply a specific expiry date. By default, **Shortterm** is defined as 10 minutes and **Longterm** as 30 days. See *UIM Developer's Guide* for information about modifying rulesets to define different reservation type durations.
Reservation Number	Displays the reservation number after the reservation has been created. This number is generated automatically, and the field is read only.
Start Date	Enter the date on which the reservation becomes effective.
Expiry Date	If you selected **Longterm** in the **Reservation Type** field, enter the date on which the reservation expires.
Reason	Enter a reason for the reservation.

Add Resources Section

Field	Description
Item	Select the type of resource you want to reserve. You can select from existing entities or create new entities. See "Searching for Entities" and "Creating Entities " for more information.
Delete	Select an entity in the table and click **Delete** to remove the entity from the reservation.

Related Topics

Creating New Reservations

Updating Reservations

Redeeming Reservations

Removing Resources from Reservations

Reservation - Information Page

You use the Reservation - Information page to edit existing reservation information.

Field	Description
Reserved For Type	Displays the type of entity or process for which the reservation is made. This field is read only.
Reserved For	Displays the person who is making the reservation. This field is read only.
Reservation Type	Select the length of the reservation, either **Longterm** or **Shortterm**. The type defines the duration of the reservation's validity, unless you supply a specific expiry date. By default, **Shortterm** is defined as 10 minutes and **Longterm** as 30 days. See *UIM Developer's Guide* for information about modifying rulesets to define different reservation type durations.
Reservation Number	Displays the reservation number after the reservation has been created. This number is generated automatically, and the field is read only.
Start Date	Enter the date on which the reservation becomes effective.
Expiry Date	If you selected **Longterm** in the **Reservation Type** field, enter the date on which the reservation expires.
Reason	Enter a reason for the reservation.
Item	Select the type of resource you want to reserve. You can select from existing entities or create new entities. See "Searching for Entities" and "Creating Entities " for more information.
Delete	Select an entity in the table and click **Delete** to remove the entity from the reservation.

Related Topics

Creating New Reservations

Updating Reservations

Redeeming Reservations

Removing Resources from Reservations

Working with Conditions

You use conditions to limit the availability of resources for a particular reason and period of time. You can also use conditions or to cause messages to be displayed when resources are assigned. For example, you can apply a condition to block a particular telephone number from being assigned.

There are three types of condition: Blocked, Warning, and Informational. By default, only the Blocked condition has an effect on the availability of a resource. A Blocked condition prevents a resource from being assigned. For example, if an Equipment entity has a Blocked condition, it cannot be assigned to a service.

UIM can be customized with rulesets to define behavior associated with Warning and Information conditions. See *UIM Developer's Guide* for more information about rulesets.

See the following topics for more information about working with conditions:

- Adding Conditions
- Deleting Conditions

- Modifying Conditions
- Condition - New Page

Adding Conditions

You add conditions from a resource's Summary page or from the Search page Search Results section. You can define multiple conditions for a resource, but each condition must have unique reasons and start dates.

See the following topics for more information about adding conditions:

- Adding Conditions from a Summary Page
- Adding Conditions from the Search Results Section

Adding Conditions from a Summary Page

You add conditions from a resource's Summary page. You can define multiple conditions for a resource, but each condition must have unique reasons and start dates.

To add a condition from a resource Summary page:

1. From the **Related Pages** menu, select **Conditions**.

   The Conditions page appears, displaying a list of any existing conditions.
2. Click **Create**.

   The Condition - New page appears.
3. Enter or select values in the **Condition Type**, **Reason**, and **Start Date** fields.

   These are required fields. See "Condition - New Page" for information about the fields in this page.
4. (Optional) Enter a description of the condition.
5. (Optional) In the **End Date** field, enter the last date on which the condition will apply.
6. Click **Save and Close**.

   The Conditions page displays the new condition.

Related Topics

Deleting Conditions

Modifying Conditions

Adding Conditions from the Search Results Section

Adding Conditions from the Search Results Section

You add conditions from a resource Search page in the Search Results page. You can define multiple conditions for a resource, but each condition must have unique reasons and start dates.

To add a condition from a resource Search Results section:

1. In the navigation section, click the entity for which you want to create a condition.

   The entity Search page appears, displaying search criteria for the selected entity.
2. Search for or create an entity of the selected type.

3. In the Search Results section, select one or more entity rows.
4. From the **Actions** menu, select **Add New Condition**.

   The Condition - New page appears.
5. Enter or select values in the **Condition Type**, **Reason**, and **Start Date** fields.

   These are required fields. See "Condition - New Page" for information about the fields in this page.
6. (Optional) Enter a description of the condition.
7. (Optional) In the **End Date** field, enter the last date on which the condition will apply.
8. Click **Save and Close**.

   The Condition Type column in the Search Results section is updated to reflect the new condition defined for the resource.

Related Topics

Deleting Conditions

Modifying Conditions

Adding Conditions from a Summary Page

Deleting Conditions

To delete a condition:

1. In the Summary page of a resource entity, select **Conditions** from the **Related Pages** menu.

   The Conditions page appears, displaying a list of any existing conditions.
2. Select the condition you want to delete and click **Delete**.

   The condition is deleted from the list.

Related Topics

Modifying Conditions

Adding Conditions

Modifying Conditions

You can modify the type, description, and end date of a condition.

To modify a condition:

1. In the Summary page of a resource entity, select **Conditions** from the **Related Pages** menu.

   The Conditions page appears, displaying a list of any existing conditions.
2. Click the link for the condition you want to modify.

   The Condition - New page appears.
3. Modify the type, description, or end date.

   See "Condition - New Page" for more information about the fields in this page.

4. Click **Save and Close**.

   The Conditions page displays updated information for the condition you changed.

Related Topics

Deleting Conditions

Adding Conditions

Condition - New Page

You use the Condition - New page to define new conditions for resources.

Field	Description
Condition Type	Select one of the following: • **Blocked**: Select for resources that cannot be consumed because of some administrative reason. This condition prevents users from making assignments to this resource. • **Informational**: Select to provide additional information about the resource. This condition does not affect availability. • **Warning**: Select to supply additional information about a resource. A warning condition does not affect the availability of a resource but can be used to alert users when they use the resource.
Description	Enter a description of the condition.
Reason	Enter the reason for the condition. All reasons must be unique.
Start Date	Enter the first date on which the condition applies. The current day appears by default. When multiple conditions are defined for a single resource, start dates for the condition must be unique.
End Date	Enter the last date on which the condition will apply.

Related Topics

Deleting Conditions

Adding Conditions

Modifying Conditions

Working with Custom Involvements

UIM enables you to define custom involvements between entities that are not otherwise associated. Involvements can optionally be based on specifications that you use to define the different kinds of associations in your inventory. For example, you can create specifications that define involvements between physical connectors and the ports they support.

UIM provides a default specification for a special kind of custom involvement called a preconfiguration. A preconfiguration enables you to set up an association among entities that makes later operations more efficient. For example, you can create a preconfiguration involvement that associates a cell phone handset to a telephone number, which is in turn

associated with a SIM card. This arrangement is not yet a service, but the use of involvements makes it possible to set up the service quickly when a subscriber purchases the phone.

The following kinds of entities can have custom involvements:

- Connectivity
- Custom network address
- Custom object
- Device interface
- Equipment
- Equipment holder
- IPv4 address
- IPv4 subnet
- IPv6 address
- IPv6 subnet
- Logical device
- Logical device account
- Network Address Domain
- Physical connector
- Physical device
- Physical port
- Pipe
- Place
- Property location
- Telephone number

You create involvements between entities from the Involvement section of a Summary page. When you create the involvement, you specify which Involvement specification (if any) to use. You can also define which role of each entity is relevant to the involvement.

See the following topics for more information about working with custom involvements:

- Associating Entities by Using Involvements
- Deleting Involvements
- Editing Involvements

Associating Entities by Using Involvements

You can use involvements to associate entities with existing entities or to new entities you create during the association process.

To associate an entity to another entity:

1. Open the Summary page of an entity you want to involve with another.

   See "Opening Entity Summary Pages" for more information.

2. In the Involvements section, click **Involve**.

A list of entities appears.

3. Select the type of entity you want to involve.

   The entity Search page appears, displaying search criteria for the selected entity type.

4. Do one of the following:

   - Enter search criteria in the Search section and click **Search** to add an existing entity. See "Searching for Entities" for more information.
   - Click **Create** in the Search Results section to create and add a new entity. See "Creating Entities " for more information.

5. In the Search Results section, select the entity to add.

6. Click **OK**.

   The Items section is updated with the entity you added.

7. (Optional) In the **Involvement Specifications** list, select a specification that defines the involvement.

8. Click **Involve**.

   The Involvement dialog box appears. If you selected an Involvement specification, the dialog box may include fields for its characteristics.

9. In the **From Role Entity** list, select the role of the entity from which you are creating the involvement.

   If the involvement is relevant to all of the entity's roles, do not make a selection. If the entity has no defined roles, the list is empty.

10. In the **To Role Entity** list, select the role of the other entity that is relevant to the involvement.

    If the involvement is relevant to all of the entity's roles, do not make a selection. If the entity has no defined roles, the list is empty.

11. Enter information for all required fields, and optionally enter information for optional fields.

12. Click **Save and Close**.

    The Involvements section includes the entity that you selected.

Related Topics

Deleting Involvements

Editing Involvements

Working with Custom Involvements

Deleting Involvements

To delete an involvement:

1. Open the Summary page of the entity from which you want to delete an involvement.

   See "Opening Entity Summary Pages" for more information.

2. In the Involvements section, select the involvement that you want to delete.

3. Click **Delete**.

   The Involvements page refreshes and the list reflects the deletion of the involvement.

Related Topics

Associating Entities by Using Involvements

Editing Involvements

Working with Custom Involvements

Editing Involvements

You can edit the involvement information that you specified when you associated an entity with other entities, including the roles that pertain to the involvement. You can also edit any characteristics defined by the Involvement specification.

To edit an involvement:

1. Open the Summary page of the entity whose involvement you want to edit.

   See "Opening Entity Summary Pages" for more information.
2. In the Involvements section, select the involvement that you want to edit.
3. Click **Update**.

   The Involvements page displays the Involvement Information section.
4. Edit the involvement information and click **Save and Close**.

   The Involvements page refreshes.

Related Topics

Associating Entities by Using Involvements

Deleting Involvements

Working with Custom Involvements

3
Working with Roles

In Oracle Communications Unified Inventory Management (UIM), you use roles to define the functions that certain types of entities perform in your inventory. For example, a Place entity could be assigned the role of Warehouse or Data Center. Roles can have characteristics to store details. An entity can have multiple roles simultaneously, and its roles can change over time.

Entities that are role-enabled have a Roles section in their Summary pages. The following entity types can be assigned roles:

- Custom object
- Device interface
- Equipment
- Flow interfaces
- Logical device
- Network
- Network edge
- Network node
- Party
- Physical device
- Physical port
- Pipe
- Place

Role specifications determine the entity types to which roles can be assigned. For example, the Warehouse role could be restricted to Place entities. You can open a Role specification to see its valid entity types. See "Working with Entity Specifications" for more information.

Role specification can be assigned to one of the following role types:

- **Technology**: This role defines the technology that an entity operates under or supports. For example, devices and connections that support a Frame Relay WAN could be assigned a Frame Relay role.
- **Function**: This role defines the function that an entity plays. For example, a router can function as a CE device or a PE device.
- **Topology**: This role defines the topology type for an entity. For example, you might want to associate a Network entity with a topology role.
- **Target**. This role identifies the entity as a target for activation systems. See "About Network Targets" for more information.

Roles can also be used to qualify the relationships of other entities with each other. For example, when you create a custom involvement between two entities, you can choose which of the entities' roles are included in the involvement. See "Working with Custom Involvements" for more information.

Roles do not have Summary pages. You work with them only in the context of the entities to which they are assigned.

See the following topics for more information about working with roles:

- Assigning a Role in an Entity Summary Page
- Removing a Role from an Entity
- Creating a Role While Associating a Party to a Service
- Creating a Role While Associating a Place to a Service

About Network Targets

A network target is a resource on which services or other resources must be activated. For example, in a GSM network, a voice mail service must be activated on a voice mail server. In this scenario, the voice mail server is the target for the voice mail account.

In UIM, you use the **Target** role type to identify Logical Device or Party entities as network targets. This capability enables UIM to pass information about network targets to activation systems. When you assign a Target role to a Logical Device or Party entity, it becomes a target for other certain entities associated with it. See *UIM Concepts* for more information about which entities can use logical devices and parties as network targets.

You can see information about network targets in two places in UIM:

- In Logical Device and Party Summary pages. The Roles section includes a list of all roles assigned to the entity. The Type column in the list displays Target for network target roles.
- In the Configuration Items section of Configuration pages. When a configuration includes a resource that has a network target, the Network Target column displays the ID of the target. For example, if a service configuration includes a configuration item for a voice mail account (a Logical Device Account entity), the Configuration Items hierarchy displays the ID of the voice mail server (Logical Device entity) associated with the account.

Assigning a Role in an Entity Summary Page

You assign roles in an entity's Summary page. The roles available depend on the type of entity.

To assign a role to an entity:

1. Open the Summary page of the entity.
2. In the Roles section, click **Associate**.

   The Inventory Role - New dialog box appears.
3. From the **Specification** list, select the specification of the role you want to assign to the entity.

   If the role you selected includes characteristics in its specification, they appear in the page.
4. (Optional) If the role includes characteristics, enter information as required.
5. (Optional) To assign additional roles to the entity, click **Save and Add Another**.
6. Click **Save and Close**.

   The entity Summary page includes the roles you added.

Related Topics

Removing a Role from an Entity

Removing a Role from an Entity

You cannot remove a role if it is in use for a relationship or involvement of the entity.

To remove a role from an entity:

1. Open the Summary page of the entity.
2. Select the role you want to remove and click **Delete**.

   The role is removed from the list.

Related Topics

Assigning a Role in an Entity Summary Page

Creating a Role While Associating a Party to a Service

You can create and associate a role when you search for a party to associate with a service.

To create a role while associating a party to a service:

1. Open a Summary page of a Service entity.
2. In the Parties section, click **Associate**.

   The Associate Party dialog box appears.
3. Search for or create a party to associate to the service.
4. In the Search Results section, select the party you want to associate.
5. In the Party Role column, select **Create Role**.

   The Inventory Role - New section appears. The section heading displays the name of the party to which the role will be assigned.
6. In the **Specification** field, select a Role specification.
7. Click **OK**.

   The Inventory Role - New section disappears and the new role appears in the **Party Role** column.
8. Click **OK** to associate the party to the service.

   The Associate Party dialog box disappears and the party is listed in the Parties section in the Service Summary page.

Related Topics

Associating Parties to Entities

Creating a Role While Associating a Place to a Service

You can create and associate a role when you search for a place to associate with a service.

To create a role while associating a place to a service:

1. Open a Summary page of a Service entity.
2. In the Places section, click **Associate**.

   The Associate Place dialog box appears.
3. Search for or create a place to associate to the service.
4. In the Search Results section, select the place you want to associate.
5. In the **Place Role** column, select **Create Role**.

   The Inventory Role - New section appears. The section heading displays the name of the place to which the role will be assigned.
6. In the **Specification** field, select a Role specification.
7. Click **OK**.

   The Inventory Role - New section disappears and the new role appears in the Place Role column.
8. Click **OK**.

   The Associate Place dialog box disappears and the place is listed in the Places section in the Service Summary page.

Related Topics

Associating Places to Entities

4

Working with Resource Management Entities

Oracle Communications Unified Inventory Management (UIM) provides several different kinds of entities that you can use to organize and manage resource entities:

- Inventory groups enable you to organize resources for a particular purpose, such as allocation by geography. An Inventory Group specifications can include an optional inventory group type that defines it as a *resource pool* limited to particular resources. See "Working with Inventory Groups" for more information.
- Network address domains a context for the uniqueness of network addresses such as IP addresses. flow identifiers, and telephone numbers. See "Working with Network Address Domains" for more information.

Working with Inventory Groups

You use inventory groups to organize entities for a particular purpose. For example, telephone numbers can be grouped into blocks that correspond to particular geographic areas. These inventory groups could be used with rulesets to determine which telephone number to assign to a new phone service.

Inventory groups are defined by specifications. For example, you could have specifications for telephone number pools or DSLAM serving areas. See *UIM Concepts* and the Design Studio Help for more information about specifications.

In Design Studio, Inventory Group specifications can optionally be associated with Inventory Group Type specifications. An inventory group type determines which entities can be included in inventory groups of that type. Inventory groups with inventory group types are called *resource pools*. For example, the VLAN ID Resource Pool specification defines a resource pool for managing VLAN IDs.

Inventory groups share many of the same features as other entities. They can include hierarchies of other inventory groups. For example, an inventory group for a service area could be broken into groups for smaller areas. You can also associate places with inventory groups.

See the following topics for more information about working with inventory groups:

- Adding Entities to an Inventory Group
- Removing Entities from Inventory Groups
- Inventory Group - New Page
- Inventory Group - Information Page
- Inventory Group Summary Page

Adding Entities to an Inventory Group

You can add entities to an inventory group from the group's Summary page. Inventory groups can include the following types of entities:

- Custom Network Addresses
- Custom Object

- Equipment
- Flow Identifier
- IPv4 Address
- IPv4 Subnet
- IPv6 Address
- IPv6 Subnet
- Logical Device
- Logical Device Account
- Party
- Physical Device
- Pipe
- Pipe Termination Point
- Property Location
- Service Specification
- Telephone Number

Inventory groups can limit the types of entities they can include. If the specification of an inventory group includes related child specifications, only entities based on those child specifications can be added to the group.

In Design Studio, you can optionally associate Inventory Group specifications with Inventory Group Type specifications. Inventory group types define specific entities or groups of entities that can or must be included in the inventory group. Inventory groups with inventory group type associations are called resource pools. They are used to manage the assignment of resources in UIM.

Two Inventory Group Type specifications are include in the **ora_uim_base_specifications** cartridge:

- IP Resource Pool
- Flow Identifier Resource Pool

You can add entities to inventory groups in the following ways:

- From the Summary page of the inventory group. See "Adding Entities to Inventory Groups from the Inventory Group Summary Page".
- From the Summary page of the entity you are adding to the inventory group. See "Adding an Entity to an Inventory Group from the Entity Summary Page ".

Adding Entities to Inventory Groups from the Inventory Group Summary Page

You can add entities from an Inventory Group Summary page.

To add entities to an inventory group:

1. Open the Summary page of an inventory group.
2. Click the **Associated Resources** tab.
3. In the Items section, click the **Items** menu.

   A list of available entities appears.

4. Select an entity type to add to the inventory group.

   An entity Search page appears.

5. Search for or create an entity of the type you selected.
6. In the Search Results section, select the entity to add.
7. Click **OK**.

   The Items section is updated with the entity you added.

Related Topics

Adding an Entity to an Inventory Group from the Entity Summary Page

Adding Entities to an Inventory Group

Adding an Entity to an Inventory Group from the Entity Summary Page

You can add an entity to an inventory group from the entity Summary page. Entities that can be included in inventory groups include an Inventory Groups section in the Summary page. If this section does not appear in the page, the entity cannot be included in an inventory group.

To add an entity to an inventory group from the entity Summary page:

1. Open the Summary page of the entity you want to add to an inventory group.
2. Click the **Groups and Infrastructure** tab.
3. In the Inventory Groups section, click **Associate**.

   The Associate Inventory Groups dialog box appears.

4. Search for or create an inventory group.
5. In the Search Results section, select the inventory group to which to add the entity.
6. Click **OK**.

   The inventory group is added to the list in the Inventory Groups section.

Related Topics

Adding Entities to Inventory Groups from the Inventory Group Summary Page

Adding Entities to an Inventory Group

Removing Entities from Inventory Groups

You can remove an entity from an inventory group from either the Inventory Group Summary page or the entity's Summary page.

See the following topics for more information about removing entities from inventory groups:

- Removing Entities from an Inventory Group Summary Page
- Removing Inventory Group Associations from Entity Summary Pages

Removing Entities from an Inventory Group Summary Page

You can remove entities from an inventory group in the group's Summary page.

To remove entities from an inventory group:

1. Open the Summary page of the inventory group.
2. Click the **Associated Resources** tab.
3. In the Items section, select the entity you want to remove.
4. Click **Delete**.

   The entity is removed from the list.

Related Topics

Removing Inventory Group Associations from Entity Summary Pages

Removing Entities from Inventory Groups

Removing Inventory Group Associations from Entity Summary Pages

You can remove one or more of an entity's inventory group associations from the entity's Summary page.

To remove an inventory group association:

1. Open the Summary page of the entity.
2. Click the **Groups and Infrastructure** tab.
3. In the Inventory Groups section, select the inventory group from which you want to remove the entity.
4. Click **Delete**.

   The inventory group is removed from the list.

Related Topics

Removing Entities from an Inventory Group Summary Page

Removing Entities from Inventory Groups

Inventory Group - New Page

You use the Inventory Group - New page to create new inventory groups.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Select a specification. You are not required to use Inventory Group specifications to create inventory groups. You can use Inventory Group specifications if you want the new inventory group to include specific characteristics or if you want to associate specific entities with specific inventory groups.
Name	Enter a name for the inventory group.

Field	Description
Description	(Optional) Enter a description of the inventory group.
Start Date	Enter the date on which the inventory group becomes active.
End Date	(Optional) Enter the last date on which the inventory group is active.
Inventory Group Type	Displays the inventory group type (if any) associated with the selected specification.

Related Topics

Creating Entities

Searching for Entities

Inventory Group Summary Page

Inventory Group - Information Page

You use the Inventory Group - Information page to edit the information that appears in the Summary page Information section. Some data elements, such as the ID, cannot be changed after the entity is created.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Displays the specification used to define the inventory group. This field is read only.
Name	Edit the name for the inventory group.
Description	Edit the description of the inventory group.
Start Date	Edit the date on which the inventory group becomes active.
End Date	Edit the last date on which the inventory group is active.
Inventory Group Type	Displays the inventory group type (if any). This field is read only.

Related Topics

Creating Entities

Searching for Entities

Inventory Group Summary Page

Inventory Group Summary Page

You use the Inventory Group Summary page to define the content for an inventory group. The page is arranged into tabs, each of which is used for a different purpose:

- General Information Tab
- Associated Resources Tab
- Groups and Infrastructure Tab

See "Entity Summary Page" for information about Summary page fields that are common among all entities.

General Information Tab

Use the **General Information** tab to view basic information about the inventory group and to view and maintain the inventory group hierarchy.

Section	Description
Inventory Group Information	Displays basic information about the entity, most of which was defined when you created the entity. Click **Edit** to change this information. Some data elements, such as the ID, cannot be changed after the entity is created. See "Creating Entities " and "Inventory Group - New Page" for more information.
Inventory Group Hierarchy	Displays a tree view of the inventory group and any child inventory groups. Inventory groups can include hierarchies of other inventory groups. For example, an inventory group for a service area could be broken into groups for smaller areas. Options available in the **View** menu enable you to control how the inventory groups appear in the Hierarchy section. See "Working with Entity Hierarchies" for more information.

Associated Resources Tab

Use the **Associated Resources** tab to add or remove items to the inventory group and to view information about the parent inventory group.

Subtab	Description
Items	Do one of the following: • Click **Items** to add an item to the inventory group. You can search for existing items or create and add new items. See "Adding Entities to Inventory Groups from the Inventory Group Summary Page" for more information. • Select a row and click **Delete** to remove the item from the inventory group. See "Removing Entities from an Inventory Group Summary Page" for more information.
Parent Inventory Groups	Displays the parent business interaction if the business interaction is a child of another business interaction. Click the value in the **ID** field to navigate to the Summary page of the parent business interaction. See "Adding Parent Entities" for more information.

Groups and Infrastructure Tab

You use the Groups and Infrastructure tab to view any places that are associated to the inventory group. See "Associating Places to Entities" for information about creating new place associations.

Working with Network Address Domains

Network domains provide a context for the uniqueness of network addresses. For example, in the public domain, an IP address must be unique among all IP address on the Internet. That same address can also exist in one or more private routing domains.

Similarly, network address domains provide a uniqueness context for VLAN IDs. Flow identifiers must be unique within their network address domain.

In UIM, you can use network address domains with the following entities:

- Flow identifiers
- IPv4 addresses
- IPv6 addresses
- IP subnets
- Telephone numbers

See the following topics for more information about working with network address domains:

- Working with Flow Identifiers
- Working with IP Networks
- Working with Telephone Numbers
- Network Address Domain - New Page
- Network Address Domain - Details Page

Network Address Domain - New Page

You use the Network Address Domain - New page to create new network address domains.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Network Address Type	Select the type of network address domain you are creating: **IP Subnet** or **Flow Identifier**.
Specification	Select a Network Address Domain specification on which to base the new entity. The list is filtered by your selection in **Network Address Type**.
Name	Enter a name for the network address domain.
Owned By	Click to search for a party to assign as the owner of the domain.
Managed By	Click to search for a party to assign as the manager of the domain.
Description	Enter a description of the network address domain.

Network Address Domain - Details Page

You use the Network Address Domain - Details page to view and edit information about Network Address Domain entities.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Name	Enter a name for the network address domain.
Network Address Type	Displays the type of network address domain you are creating: **IP Subnet** or **Flow Identifier**. This field is read only.
Specification	Displays the Network Address Domain specification on which the entity is based. This field is read only.
Owned By	Displays the party assigned as the owner of the network address domain. Click to search for a different party to assign as the owner of the domain.
Managed By	Displays the party assigned as the manager of the network address domain. Click to search for a different party to assign as the manager of the domain.
Description	Displays a description of the network address domain. Enter or modify the description.

5

Working with Planning Features

Oracle Communications Unified Inventory Management (UIM), includes features that you use to plan updates and activities in your inventory. You can use the following features:

- Working with Business Interactions
- Working with Engineering Work Orders
- Working with Projects
- Generating Bills of Materials

Working with Business Interactions

Business interactions represent arrangements, such as capital projects and maintenance requests, that require actions on entities in the inventory. Examples of these actions include adding entities, assigning resources, changing entity hierarchies, and so on.

A single business interaction can involve any number of items in your inventory. See "Understanding Business Interaction Content" and "Defining the Content of a Business Interaction".

The following types of entities can be included in a business interaction:

- Connectivity
- Custom network address
- Custom object
- Device interface
- Equipment
- Equipment holder
- Flow Identifier
- Logical device
- Logical device account
- Media stream
- Network
- Network node
- Network edge
- Physical connector
- Physical device
- Physical port
- Pipe
- Pipe termination point
- Service configurations

- Telephone number

All the actions taken in the context of a business interaction are made effective in the inventory when the business interaction is completed. See "Completing a Business Interaction" and "Canceling a Business Interaction".

Business interactions share many of the same features as other entity types. You create them the same way you create other entity types. Business interactions can also include a hierarchy of other business interactions. For example, a capital improvement project could be divided into smaller engineering projects, each of which is divided into work orders. You can search for Business Interactions by searching the associated Activities from the Activity Search section.

> **Note:**
>
> You do not have to use business interactions to make changes to the inventory. You can also make changes to the current inventory, outside the context of a business interaction. Such changes are immediately effective.

Understanding Business Interaction Content

The content of a business interaction is a set of items corresponding to the actions taken on entities while you are in the context of that business interaction. For example, if you add an entity while in the context of a business interaction, then the creation of that entity is an item in the business interaction and will become effective at the same time as the other items in the interaction.

Changes you make while in a business interaction context are not visible in the current inventory until the business interaction is completed. Similarly, changes you make in one business interaction are not visible in another business interaction context, even if the other business interaction is a child of the first.

When you associate a configuration version or a Connectivity design version with a business interaction, entities created in that business interaction context are available for reference or assignment to that version before the business interaction is completed. For example, you can create a logical device in the context of a business interaction and then assign the logical device to a Connectivity design version that is associated with the same business interaction.

Actions taken in a business interaction context on entities that are not business-interaction-enabled, such as parties, places, or services, are not included in the interaction. These kinds of changes are applied directly to inventory, and are effective at the time you make them.

The inventory status of an entity can be different in different business interaction contexts. For example, you can deactivate the entity in a business interaction while it remains active in the current inventory. The current inventory status is updated to reflect the business interaction when you complete the interaction.

> **Note:**
>
> Some actions are prevented or restricted while operating in a business interaction context. Actions involving mapping of devices, device interfaces, ports, and connectors are not always possible in a business interaction context. See *UIM Concepts* for more information.

Related Topics

Defining the Content of a Business Interaction

Completing a Business Interaction

Canceling a Business Interaction

Creating a Business Interaction

You can create a business interaction from the Business Interaction - New page.

To create a business interaction:

1. In the **Tasks - All Tasks** group of the navigation section, click **Business Interactions**.
2. In the Search Results section, click **Create**.

   The Business Interaction - New page appears.
3. Assign a cluster from which you can select the required specification for the business interaction.
4. From the **Specification** list, select the specification you want to use for this business interaction.
5. In the **Name** field, enter a name for the business interaction.
6. In the **Effective Date** field, enter the date and time by which the business interaction becomes active.

   > **Note:**
   >
   > If you select a **Workflow Template**, the system displays current date and time in **Effective Date** and changes the field as non-editable.

7. (Optional) From the **Workflow Template** list, select a workflow.

   You can optionally associate a workflow template with a business interaction. A workflow template defines an ordered, managed set of activities. The workflow must be completed before you can complete the business interaction.

   When you associate a workflow with a business interaction, the Business Interaction Summary page adds two tabs: the **Activity Details** tab and the **Gantt Chart** tab. You use these tabs to manage the workflow and its activities.

   When you select a workflow from the **Workflow Template** list, the following occurs:

   - The **Name** field is autopopulated with a name in the format:

     templateName_user_sequenceNumber

     where:

     templateName is the name of the workflow template.

     user is the name of the UIM user.

     sequenceNumber indicates the nth workflow that the user is associating with the business interaction. For example, a sequence number of 3 indicates that this is the third workflow that the user is associating with the business interaction.

     For example, BIWORKFLOWTEMP_inv_3

You can edit the autopopulated name in the **Name** field.

- The **Effective Date** field is autopopulated with the effective date of the last activity in the workflow. This field is read-only.

8. (Optional) Enter information into non-required fields.
9. (Optional) To create an additional business interaction, click **Save and Add Another**.
10. Click **Save and Continue**.

    The **Activity Details** tab appears, displaying a list of all the activities in the workflow in chronological order. See "Managing Activities" for more information.

Related Topics

Managing Workflows and Assigned Activities

Viewing and Updating Entity Information

Defining the Content of a Business Interaction

You can use any or all of the following ways to define the content of a business interaction:

- You can define content by setting the business interaction context and then making inventory changes as usual in UIM. The changes you make while in a business interaction context are included in that business interaction. See "Setting the Business Interaction Context". You can define content by filtering specifications while searching for business interactions. See "Filtering Specifications while Searching Business Interactions". You can also define content by adding existing entities using the Canvas Diagram page of a business interaction and then perform actions and them, or by adding new entities using the Canvas Diagram page of a business interaction. See "Working with the Canvas Diagram Page of a Business Interaction".
- You can define content for a business interaction by creating or modifying entities from a Business Interaction Summary page. In this case, the changes are included in the interaction without your having to set the context explicitly. See "Creating New Inventory Entities from the Business Interaction Summary Page" and "Modifying Entities from the Business Interaction Summary Page".
- You can associate a workflow with the business interaction. Activities in the workflow can include the creation of resources, which become items in the parent business interaction.

The items in a business interaction are displayed in the Business Interactions Items section on its Summary page. For each item, the entity type, name, ID, action (**Add**, **Delete**, or **Change**), and status are displayed. You can remove items from the list and transfer items between business interactions. See "Deleting Items from Business Interactions" and "Transferring Items Between Business Interactions".

Related Topics

Understanding Business Interaction Content

Completing a Business Interaction

Canceling a Business Interaction

Setting the Business Interaction Context

The business interaction context is set by the application when you create a business interaction or access the business interaction Summary page for an existing business interaction.

All actions you take in a business interaction context become effective in the inventory when the business interaction is completed. See "Completing a Business Interaction" for more information. If you set a business interaction context in the Search Results section, any actions you take on groups of entities from that page are included in the interaction.

If the business interaction includes a workflow, the context indicator includes activities. If you are working in an activity, its name is appended to the business interaction name in the indicator. You can also select from all the in-progress activities in business interaction.

To set the business interaction context:

1. In a Summary or Search page, click the context indicator in the upper-left of the page.

   The menu initially displays **Current**, the name of a business interaction, or the name of a business interaction and activity.
2. Do one of the following:
   - Select **Current** if you want all subsequent actions to take place in current inventory. Actions you take after selecting **Current** are applied directly to the inventory, without being included in a business interaction.
   - Select a business interaction from the list of the five most recently used business interactions.
   - Select **Search** to select a business interaction that is not among the five most recently used. See "Searching for Entities" for more information.

   Your selection sets the business interaction context and appears in the menu in the upper-left of the page.
3. If you set the context to a business interaction with a workflow and want to set the context to an activity, click the context indicator again.
4. Select **Activities**, and then select an activity.

Related Topics

Defining the Content of a Business Interaction

Creating New Inventory Entities from the Business Interaction Summary Page

To create an entity from the Business Interaction Summary page:

1. Open the Summary page of a business interaction.
2. In the Business Interactions Items section, click **Items**.

   A list of entity types appears.
3. Select an entity type.

   The entity Search page appears.
4. Search for or create an entity of the type you selected.
5. In the Search Results section, select the entity to add.

6. Click **OK**.

   The Business Interactions Items section is updated with the entity you added, and the business interaction context is automatically set to the business interaction from which you started.

Related Topics

Defining the Content of a Business Interaction

Adding Configuration Versions and Design Versions to Business Interactions

You can add design versions of Connectivity entities and configuration versions of other entities to business interactions. A configuration version or design version is automatically added to a business interaction if you set a business interaction context in an entity Summary page before creating the version.

You can also set the business interaction context for a configuration version or design version in its Configuration Summary page.

To set a business interaction context for a configuration version or design version:

1. Do one of the following:
   - Open or create a configuration version. See "Working with Entity Configurations" for more information.
   - Open or create a Connectivity design version. See "Managing Design Versions" for more information.
2. In the Configuration Summary page or **Connectivity Design** tab, select a business interaction from the menu in the upper-left of the page.
3. From the Actions menu, select **Associate Business Interaction**.

   The configuration version or design version is added to the selected business interaction.

Related Topics

Working with Entity Configurations

Working with Multiple Pending Configurations

Removing Configuration Versions and Design Versions from Business Interactions

You can remove configuration versions and Connectivity design versions from business interactions. You can remove them by deleting the corresponding items from the Summary page of the business interaction. See Defining the Content of a Business Interaction.

You can also remove a configuration version or design version from a business interaction while working in the configuration Summary page or **Connectivity Design** tab.

To remove a configuration version or design version from a business interaction:

1. Do one of the following:
   - Open the configuration version. See "Working with Entity Configurations" for more information.
   - Open the Connectivity design version. See "Managing Design Versions" for more information.
2. Click the red X next to the business interaction name in the tab.

3. Click **OK** in the confirmation dialog box.

   The configuration version or design version is removed from the business interaction.

Related Topics

Working with Entity Configurations

Modifying Entities from the Business Interaction Summary Page

You can modify entities individually or as a group from a Business Interaction Summary page.

To modify an entity from the Business Interaction Summary page:

1. Open the Summary page of a business interaction.
2. In the Business Interactions Items section, click the ID of an entity you want to modify.

   The Summary page of the entity appears. See the Help topics for the specific entity type for information about modifying it.

Related Topics

Defining the Content of a Business Interaction

Deleting Items from Business Interactions

You can delete items from a business interaction at any time prior to the completion of the business interaction.

If you delete an entity from the Items section in a Business Interaction Summary page, all associated entities are also deleted. To avoid deleting associated entities, you can:

- Search for the entity while in the business interaction context and delete it from the Search Results section.
- Manually remove the associations before deleting the entity from the Business Interaction Summary page.

To delete items from a business interaction:

1. Open the Summary page of a business interaction.
2. In the Items section, select an entity to delete.
3. Click **Delete**.

Related Topics

Defining the Content of a Business Interaction

Transferring Items Between Business Interactions

You can transfer items from one business interaction to another active business interaction at any time prior to the completion of the business interaction.

To transfer items between business interactions:

1. Open the Summary page of a business interaction.
2. In the Business Interaction Items section, select an entity to transfer.
3. Click **Transfer Items**.

The Business Interaction Search page appears.

4. Search for the business interaction to which you want to transfer the item.

   See "Searching for Entities" for more information.

5. In the Search Results section, select a business interaction and click **Transfer**.

   When the Business Interaction Items page refreshes, the transferred item no longer appears.

Related Topics

Defining the Content of a Business Interaction

Filtering Specifications while Searching Business Interactions

While searching for Business Interactions, you can filter the specifications grouped under different clusters by choosing cluster values. However, you can only search for business interactions using clusters when you have assigned a cluster while creating a business interaction. You can customize clusters by selecting specifications you want to group. For more information on adding specifications to clusters see *Service Catalog and Design - Design Studio Modeling Inventory*.

You can add the **Cluster** field to the search page if not already present by using **Add Fields**.

> **Note:**
>
> A specification can be grouped into multiple clusters if necessary.

To filter specifications for searching Business Interactions:

1. Open Business Interaction Search page.
2. From the **Cluster** field dropdown, select a cluster.
3. Click on the **Specifications** field.

   The dropdown menu shows only entries related to the cluster selected.

Working with the Canvas Diagram Page of a Business Interaction

You use the Canvas Diagram page of a business interaction to do the following:

- Search for and add existing entities onto the canvas and perform actions on them.
- Create new entities by clicking the corresponding icons on the canvas diagram toolbar.

See "Canvas Diagram Page".

See the following topics:

- Adding Existing Entities from the Search by Entity Section
- Creating Entities Using the Canvas Diagram Toolbar
- Opening the Canvas Diagram Page
- Using the Overview Section
- Changing the Canvas Diagram Layout and View

- Creating Child Entities
- Adding Preferences to Canvas Diagram
- Opening Summary Pages for Entity Nodes
- Editing Entity Nodes
- Isolating Entity Nodes
- Deleting Entity Nodes

Adding Existing Entities from the Search by Entity Section

You can add the following existing entities from the **Search by Entity** section of the Canvas Diagram page:

- Equipment
- Logical Device
- Network/Entity Location
- Physical Device
- Place
- Pipe
- Network

After adding the existing entities onto the canvas, you can perform various tasks on the entities, such as associating a connectivity between logical devices, associating a pipe between logical devices, associating network locations to entities, and so on.

To add existing entities from the Search By Entity section:

1. In the **Tasks - All Tasks** group of the navigation section, click **Business Interactions**.
2. In the **Search Results** section, click **Create**.

   The Business Interaction - New page appears.
3. From the **Specification** list, select **Planning Diagram**.

> **Note:**
>
> Only the user who has a role of **NetworkRole** can create a business interaction based on the **Planning Diagram** specification. See *UIM System Administrator's Guide* for information about granting application roles.

4. In the **Name** field, enter a name for the business interaction.

   The **Effective Date** field is auto-populated with the effective date and time of the last activity in the workflow. This field is read-only.
5. Click **Save and Continue**.

   The Canvas Diagram page appears.
6. Click the **Palette** icon in the top-right corner of the diagram pane.
7. In the **Search by Entity** section, select any **Entity Type** from the list:
   - Equipment

- Logical Device
- Network/Entity Location
- Physical Device
- Place
- Pipe
- Network

8. In the **Name** field, type the name of the entity and select the entity from the list.

   An icon representing the entity appears beside the **Name** field.

9. (Optional) Click the **Browse** icon to select name by searching the entity.

   The corresponding entity search page appears.

   a. Enter the search criteria and then click **Search**.

      The search results appear.

   b. Select the entity and then click **OK**.

      The selected entity name appears in the **Name** field and its icon appears beside the Name field.

10. Drag and drop the entity icon onto the canvas.

    The entity is added onto the canvas area and is represented as a node.

> **Note:**
>
> Network with nodes of type Custom Object, Custom Network Address, Device Interface, Party, and Physical Port cannot be added to Canvas Diagram.

Related Topics

Canvas Diagram Page

Opening the Canvas Diagram Page

You can open the Canvas Diagram page in one of the following ways:

- Create a new business interaction by selecting **Planning Diagram** from the **Specification** list.
- In the Search Results section of a Business interaction Search page, click the **ID** link for a business interaction that was created using the **Planning Diagram** specification.

Related Topics

Canvas Diagram Page

Creating Entities Using the Canvas Diagram Toolbar

You can create new entities by selecting the following icons from the toolbar of the Canvas Diagram page:

- Quantity
- Create Network

- Create Logical Device
- Create Physical Device
- Create Equipment
- Create Connectivity

To create entities using the toolbar:

1. In the **Tasks - All Tasks** group of the navigation section, click **Business Interactions**.
2. In the Search Results section, click **Create**.

   The Business Interaction - New page appears.
3. From the **Specification** list, select **Planning Diagram**.

> **Note:**
>
> Only the user who has a role of **NetworkRole** can create a business interaction based on the **Planning Diagram** specification. See *UIM System Administrator's Guide* for information about granting application roles.

4. In the **Name** field, enter a name for the business interaction.

   The **Effective Date** field is auto-populated with the effective date of the last activity in the workflow. This field is read-only.
5. Click **Save and Continue**.

   The Canvas Diagram page appears.
6. Adjust the **Quantity** slider control to specify the number of entities that you want to create. For example, set the slider to 3 to create three quantities of a specific entity type.

> **Note:**
>
> You can select **Quantity** only while creating new entities. The entities are represented by nodes on the canvas area.

7. Click **Create Network** icon to create a new network.

   The Network - New page appears. See "Creating Networks" for more information.
8. Click **Create Logical Device** icon to create a new logical device.

   The Logical Device - New page appears. See "Logical Device - New Page" for more information.
9. Click **Create Physical Device** icon to create a new physical device.

   The Physical Device - New page appears. See "Physical Device - New Page" for more information.
10. Click **Create Equipment** icon to create a new equipment.

    The Equipment - New page appears. See "Equipment - New Page" for more information.
11. From the **Create Connectivity** list, select the following:
    - Select **Connectivity** to create a new connectivity.

The Connectivity - New page appears. See "Creating Connectivity Entities" for more information.

- Select **Pipe** to create a new pipe.

  The Pipe - New page appears. See "Creating Pipes" for more information.

> **Note:**
>
> A pipe or a connectivity can be created between two nodes. You can select two nodes by pressing **Ctrl** key from your keyboard.

You can create child entities with in any network. See "Creating Child Entities" for more information.

Related Topics

Canvas Diagram Page

Changing the Canvas Diagram Layout and View

You can change the layout of the canvas diagram as:

- **Force Directed Layout**: This layout displays all one-to-one connections between the nodes. This is the default layout.
- **Circular Layout**: This layout displays the nodes of the canvas diagram in a circle.
- **Grid Layout**: This layout displays the nodes of the canvas diagram in a grid. This layout has the pipe or connection crossings.

You can change the canvas diagram view as:

- **Collapsed Network View**: This view displays all the parent network nodes and independent nodes in the canvas diagram. The child nodes of a network node are not displayed in this view. This view provides an overview of the canvas diagram.
- **Expanded Network View**: This view displays all the nodes, including the child network nodes, in the canvas diagram. This view provides a detailed view of all nodes and their corresponding pipes or connections.

Adding Preferences to Canvas Diagram

You can set the following preferences to canvas diagram:

- Node type
- Display label
- Label position

To set preferences to canvas diagram:

1. In the **Tasks - All Tasks** group of the navigation section, click **Business Interactions**.
2. (Optional) Open an existing by entering the search criteria and clicking **Search**.
3. In the Search Results section, click **Create**.

   The Business Interaction - New page appears.
4. From the **Specification** list, select **Planning Diagram**.

> **Note:**
>
> Only the user who has a role of **NetworkRole** can create a business interaction based on the **Planning Diagram** specification. See *UIM System Administrator's Guide* for information about granting application roles.

5. In the **Name** field, enter a name for the business interaction.

   The **Effective Date** field is auto-populated with the effective date of the last activity in the workflow. This field is read-only.

6. Click **Save and Continue**.

   The Canvas Diagram page appears.

7. Create a canvas diagram using the toolbar options.

   See Creating Entities Using the Canvas Diagram Toolbar for creating canvas diagram.

8. Click **Preferences** icon.

   The Preferences window appears.

9. In the **Node Type** field, select the node type as follows:

   - **Icon**: Displays the corresponding icons of the entities in the canvas diagram.
   - **Shape**: Displays the entities of canvas diagram as colored circles. Similar entities appear in one color.

10. Select **Display Label**.

    The Display Label option displays the names of the entities in the canvas diagram.

11. In the **Label Position** list, select a position for the entity names.

12. Click **OK**.

    The canvas diagram appears according to the preferences.

Opening Summary Pages for Entity Nodes

To open a Summary page for an entity node:

1. Open the Canvas Diagram page of a business interaction. See "Opening the Canvas Diagram Page".
2. Right-click an entity node and select **View Summary**.

   The Summary page for the entity that represents the node appears. For example, if the entity node represents a logical device, the Logical Device Summary page appears.

Related Topics

Canvas Diagram Page

Creating Child Entities

You can create child entities within a network. A child entity can be either of the following entities:

- Network
- Logical Device

- Physical Device
- Equipment

To create child entities within a network:

1. In the **Tasks - All Tasks** group of the navigation section, click **Business Interactions**.
2. In the Search Results section, click **Create**.

   The Business Interaction - New page appears.
3. From the **Specification** list, select **Planning Diagram**.

> **Note:**
>
> Only the user who has a role of **NetworkRole** can create a business interaction based on the **Planning Diagram** specification. *See UIM System Administrator's Guide* for information about granting application roles.

4. In the **Name** field, enter a name for the business interaction.

   The **Effective Date** field is auto-populated with the effective date of the last activity in the workflow. This field is read-only.
5. Click **Save and Continue**.

   The Canvas Diagram page appears.
6. From the Canvas Diagram Toolbar, create a network.

   See Creating Entities Using the Canvas Diagram Toolbar for more information.
7. Drag and drop any of the following icons on to the network:
   - Create Network icon
   - Create Logical Device icon
   - Create Physical Device icon
   - Create Equipment icon

   The corresponding entity creation page appears.
8. Enter the details in the entity creation page.
9. Click **OK**.

> **Note:**
>
> Click **Expanded Network View** icon to view the child entity.

Editing Entity Nodes

To edit an entity node:

1. Open the Canvas Diagram page of a business interaction. See "Opening the Canvas Diagram Page".
2. Right-click an entity node and select **Edit Node**.

The Information page for the entity that represents the node appears. For example, if the entity node represents a logical device, the Logical Device Information page appears.

3. Make any changes required for the entity and click **Save and Close**.

Related Topics

Canvas Diagram Page

Isolating Entity Nodes

To isolate an entity node:

1. Open the Canvas Diagram page of a business interaction. See "Opening the Canvas Diagram Page".
2. Click an entity node.

   The node is surrounded by a black rectangle and two icons appear. The icon on the left is the **Isolate** icon.
3. Click the **Isolate** icon.

   All nodes disappear except the one whose icon you clicked.
4. Click the **Restore** icon (two arrows facing each other) to return to the full display of nodes.

Related Topics

Canvas Diagram Page

Deleting Entity Nodes

To delete an entity node:

1. Open the Canvas Diagram page of a business interaction. See "Opening the Canvas Diagram Page".
2. Click an entity node.

   The node is surrounded by a black rectangle and two icons appear. The icon on the right is the **Delete** icon.
3. Click the **Delete** icon.

   The node is deleted from the canvas.

Related Topics

Canvas Diagram Page

Managing the Business Interaction Life Cycle

Business interactions have a life cycle that begins at their creation and ends with their completion or cancellation. See *UIM Concepts* for more information about the business interaction life cycle.

You manage the business interaction life cycle with menu commands. In some cases, you can make lifecycle changes for an entire business interaction life cycle with one command. Some commands apply only to business interactions created by web services.

For multiple pending configurations of non-network service entities, the life cycle is managed from the business interaction.

See the following topics for more information about managing business interaction life cycles:

- Approving a Service Configuration in a Business Interaction
- Issuing a Service Configuration in a Business Interaction
- Completing a Business Interaction
- Canceling a Business Interaction
- Working with Multiple Pending Configurations

Approving a Service Configuration in a Business Interaction

Business interactions created by web services can contain service configurations. Their lifecycle transitions are normally run by web services, but you can also perform these operations manually.

The **Approve Configuration** command in the Business Interaction Summary page **Actions** menu changes service configurations in the business interaction from In Progress to Designed status. Service configurations already in Designed status are not affected.

The status of the business interaction itself is not affected by **Approve Configuration** command. Only the statuses of the service configuration and its items are affected.

To approve a service configuration in a business interaction:

1. Open the Summary page of the business interaction whose service configurations you want to approve.
2. From the **Actions** menu, select **Approve Configuration**.

   The statuses of service configurations in the business interaction change from In Progress to Designed.

Issuing a Service Configuration in a Business Interaction

Business interactions created by web services can contain service configurations. Their lifecycle transitions are normally run by web services, but you can also perform these operations manually.

The **Issue Configuration** command in the Business Interaction Summary page **Actions** menu changes service configurations in the business interaction from Designed to Issued status. Service configurations already in Issued status are not affected.

The status of the business interaction itself is not affected by **Issue Configuration** command. Only the statuses of the service configuration and its items are affected.

To issue a service configuration in a business interaction:

1. Open the Summary page of the business interaction whose service configurations you want to issue.
2. From the **Actions** menu, select **Issue Configuration**.

   The statuses of service configurations in the business interaction change from Designed to Issued.

Completing a Business Interaction

You can complete a business interaction when all changes included in it have been made and are ready to be processed. The changes become effective when the business interaction is

completed. Any service configurations included in the business interaction are completed when the business interaction is completed.

You cannot complete a parent business interaction when it has one or more open child business interactions (not in Canceled or Complete status) or if it includes service configurations in In Progress or Designed status. You can, however, complete the entire hierarchy in a single operation. If you use the **Complete Hierarchy** menu command, UIM completes all business interactions in a parent business interaction's hierarchy, starting from the lowest level.

> **Note:**
>
> You cannot reopen a business interaction after you have completed it.

To complete a business interaction:

1. Open the Summary page of the business interaction you want to complete.
2. From the **Actions** menu, select **Complete** or **Complete Hierarchy**.

   The business interaction is completed. If you selected **Complete Hierarchy**, all business interactions in the hierarchy are completed. The **Actions** menu now contains no commands.

Related Topics

Understanding Business Interaction Content

Defining the Content of a Business Interaction

Canceling a Business Interaction

Business Interaction Summary Page

Working with Multiple Pending Configurations

Canceling a Business Interaction

Canceling a business interaction makes it permanently unavailable. You cannot reactivate it. Any incomplete service configuration versions included in the business interaction are also cancelled.

You cannot cancel a business interaction when it has one or more active child business interactions (not canceled or incomplete) or if it includes any completed service configurations. You can, however, cancel the entire hierarchy in a single operation. If you use the **Cancel Hierarchy** menu command, UIM cancels all business interactions in a parent business interaction's hierarchy, starting from the lowest level.

To cancel a business interaction:

1. Open the Summary page of the business interaction you want to cancel.
2. From the **Actions** menu, select **Cancel** or **Cancel Hierarchy**.

   The business interaction is canceled. If you selected **Cancel Hierarchy**, all business interactions in the hierarchy are canceled. The **Actions** menu now contains no commands.

Related Topics

Understanding Business Interaction Content

Defining the Content of a Business Interaction

Business Interaction Summary Page

Working with Multiple Pending Configurations

Viewing XML Data for Business Interactions with External Systems

Business interactions can be created as the result of web service requests from external systems. For these business interactions, you can view the XML data passed into UIM by the web service. If the business interaction includes data that was sent from UIM to an external system, the output data is also visible in the transaction log.

The Summary pages of business interactions created by web services include a Transactions Log section. This section lists all of the XML inputs and outputs for that business interaction. The XML inputs and outputs are listed in descending order by date. Each row includes a hyperlinked sequence number, a timestamp, and a description.

Clicking a link opens a dialog box in which the XML data is displayed.

To view XML data:

1. Open the Summary page of a business interaction that was created by a web service.
2. In the Transactions Log section, click the hyperlinked sequence number of an XML input or output.

   The XML data is displayed, replacing the Business Interaction Summary page.
3. Click the **Back** button in the upper-right corner of the XML page to return to the Business Interaction Summary page.

Business Interaction - New Page

You use the Business Interaction - New page to create new business interactions.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Select a Business Interaction specification. You use Business Interaction specifications to define arrangements or transactions that affect entities in the inventory. After you create an entity from the specification, you add the resources that are included in the interaction to the business interaction.

Field	Description
ID	If the entity specification requires a manually entered ID, enter a unique ID for the entity. Most entity specifications are defined in Design Studio so that IDs are generated automatically. The **ID** field for these specifications contains the text AUTOGENERATE.
Name	Enter a name for the business interaction.
Effective Date	Enter the date and time by which the business interaction becomes active. **Note:** If you select **Workflow Template**, the system displays current date and time in **Effective Date** and changes the field to non-editable.
Workflow Template	(Optional) Select a workflow template to associate with the business interaction. If you associate a workflow template with the business interaction, its Summary page includes two additional tabs, the **Activity Details** tab and the **Gantt Chart** tab.
Status	Displays the current business interaction status. See *UIM Concepts* for more information about business interaction life cycles and statuses.
Description	(Optional) Enter a description of the business interaction.

Related Topics

Creating a Business Interaction

Business Interaction Summary Page

Business Interaction - Information Page

You use the Business Interaction - Information page to edit the information that appears in the Summary page Information section. Some data elements, such as the ID, cannot be changed after the entity is created.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Displays the specification used to create the business interaction. This field is read-only.
ID	Displays the unique ID for the business interaction. This field is read-only.
Name	Edit the name for the business interaction.
Effective Date	Displays the date and time by which the business interaction becomes active. If the business interaction is associated to a service configuration version, changing this field will affect the date on the service configuration version.

Field	Description
Status	Displays the status of the business interaction. For example, after creating a new business interaction, the status is automatically set to Created. This field is read-only. See *UIM Concepts* for more information about business interaction life cycles and statuses.
Description	Edit the description of the business interaction.
Workflow Template	Displays the workflow template associated with the business interaction, if any. (Optional) You can select a workflow template to associate with the business interaction. If you associate a workflow template with the business interaction, its Summary page includes two additional tabs, the **Activity Details** tab and the **Gantt Chart** tab.
Arrangement	(Visible only in data cooperation scenarios.) The cooperation model for the entity as defined by the parties or systems exchanging entity data.
Entity Name	(Visible only in data cooperation scenarios.) The name of the entity in the context specified in the **Other System** field.
Entity ID	(Visible only in data cooperation scenarios.) The identifier of the entity. This identifier is unique in the context specified in the **Other System** field.
Other System	(Visible only in data cooperation scenarios.) The name of the external system or domain that is participating in the data cooperation.

Related Topics

Creating a Business Interaction

Business Interaction Summary Page

Business Interaction Summary Page

You use the Business Interaction Summary page to define the content for a business interaction.

If you associate a workflow template with a business interaction, the Summary page includes two additional tabs:

- Activity Details Tab
- Gantt Chart Tab

See the following topics for more information about summary pages:

- Related Pages Menu
- Actions Menu

> **Note:**
>
> The sections listed in the following table are specific to the Business Interaction Summary page. See "Entity Summary Page" for information about Summary page fields that are common among all entities.

Section	Description
Information	Displays basic information about the entity, most of which was defined when you created the entity. Click **Edit** to change this information. Some data elements, such as the ID, cannot be changed after the entity is created. See "Creating Entities " and "Business Interaction - New Page" for more information. Click **Other System** to view fields related to systems with which UIM is cooperating. These fields are visible by default when populated and are hidden by default when not populated.
Business Interaction Hierarchy	Displays a tree view of the business interaction and any child business interactions. Business interactions can include hierarchies of other business interactions. For example, a capital improvement project could be broken into smaller engineering projects, each of which is broken into work orders. Options available in the **View** and **Format** menus enable you to control how the business interactions appear in the Business Interaction Hierarchy section. See "Working with Entity Hierarchies" for more information.
Parent Business Interactions	Displays the parent business interaction if the business interaction is a child of another business interaction. Click the value in the **ID** field to navigate to the Summary page of the parent business interaction.
Business Interaction Items	Do one of the following: • Click **Items** to add an item to the business interaction. You can search for existing items or create and add new items. See "Modifying Entities from the Business Interaction Summary Page" for more information. • Click **Transfer** to transfer items from one business interaction to another. See "Transferring Items Between Business Interactions" for more information. • Select a row and click **Delete** to remove the item from the business interaction. See "Deleting Items from Business Interactions" for more information.
Transactions Log	For business interactions created by web services, contains a list of all XML inputs. Click the sequence number of an XML input to view its full contents.
Arrangement	(Visible only in data cooperation scenarios.) The cooperation model for the entity as defined by the parties or systems exchanging entity data.
Entity Name	(Visible only in data cooperation scenarios.) The name of the entity in the context specified in the **Other System** field.
Entity ID	(Visible only in data cooperation scenarios.) The identifier of the entity. This identifier is unique in the context specified in the **Other System** field.
Other System	(Visible only in data cooperation scenarios.) The name of the external system or domain that is participating in the data cooperation.

Related Topics

Managing the Business Interaction Life Cycle

Defining the Content of a Business Interaction

Business Interactions - Bulk Edit Page

You use the Business Interactions - Bulk Edit page to edit the characteristics of one or more Business Interaction entities with the same specification. The **Bulk Edit** option appears only after you select one or more Business Interactions from the search results.

To enable the **Bulk Edit** option, you must do the following:

1. Navigate to Business Interactions.
2. Select a specification in the Business Interaction search criteria.
3. In the Search Results section, select one or more entities.
4. Click **Bulk Edit**.

   The Business Interaction - Bulk Edit page appears.

To bulk edit the characteristics of Business Interaction entities:

1. In the Business Interaction - Bulk Edit page, click **Add Fields** to select the characteristics.

   The Add Fields page appears.
2. Use the arrow buttons to move fields from the Available Fields column to the Selected Fields column to select the fields to display and edit. You can also move fields from the selected fields column back to available fields.

   > **Note:**
   >
   > If there are no characteristics for the selected specification, the page columns appear empty. In this case, you need to add characteristics to the specification. See *UIM Concepts* for information on characteristics.

3. Click **OK**.

   The selected characteristics appear in the bulk edit page.
4. Enter values in the relevant fields for the characteristics.
5. Click **Save And Close**.

   The following confirmation message is displayed:

```
You are about to update all the selected entities of specification
specificationName. The following characteristics values will be updated.
characteristic1 - value1
characteristic2 - value2
.
.
characteristicN - valueN
Do you want to proceed?
```

> **Note:**
>
> The confirmation message displays the selected characteristic values along with their updated values. For characteristics with no values, `null` is displayed.

6. Click **Yes**.

   The characteristics with updated values are added to all selected entities.

Canvas Diagram Page

You use the Canvas Diagram page of a business interaction to do the following:

- Search for and add existing entities onto the canvas and perform actions on them.
- Create new entities by clicking the corresponding icon on the canvas diagram toolbar.

The following controls appear in the Canvas Diagram page:

Control	Description
Search By Entity section	This section is collapsible. It contains the following options: **Entity Type** drop-down list: Enables you to search for and add the following entities onto the canvas area: • Equipment • Logical Device • Network/Entity Location • Network • Physical Device • Place • Pipe **Name** field: Enables you to search for the selected entity type by specifying the entity name.
Quantity slider control	Drag the **Quantity** slider control to choose the number of entities you want to create.
Toolbar section	The Toolbar section enables you to create entities, change diagram view, change diagram layout by clicking the following icons: • Create Network • Create Equipment • Create Logical Device • Create Physical Device • Create Connectivity • Force Directed Layout • Circular Layout • Grid Layout • Collapsed Network View • Expanded Network View
Preferences icon	Enables you to set the display preferences of the entities. Contains the following options: • Node Type The options are: – Icon – Shape • Display Label • Label Position
Editor section	Displays information about the entity node selected in the canvas area, including the name, ID, network/entity location, and the characteristics associated to the entity specification. Clicking the **ID** link opens the Summary page of an entity. Clicking the **Network/Entity Location** link opens the Property Location page. The Editor section is read-only and collapsible.

Control	Description
Actions menu	Contains the following options: • **Complete:** Select to complete the canvas diagram business interaction. • **Cancel:** Select to cancel the canvas diagram business interaction.
Control Panel icon	Clicking this icon displays the following icons: • **Zoom to Fit:** Click to automatically zoom the display to fit the canvas. • **Zoom In:** Click to zoom into the canvas. • **Zoom Out:** Click to zoom out from the canvas.
Overview section	Displays a rectangle around the portion of the diagram that you have zoomed in on. If you zoom out, the rectangle becomes larger until it disappears when the entire diagram is displayed in the main view.

Related Topics

Working with the Canvas Diagram Page of a Business Interaction

Working with Engineering Work Orders

You use engineering work orders to plan and implement resource infrastructure changes and have your changes all take effect at the same time.

Engineering work orders are closely related to business interactions and share almost identical functionality. Unless otherwise noted in the UIM documentation or Help, you should follow the same procedures when working with engineering work orders that you do when working with business interactions.

For example, you use the same context indicator to set an engineering work order context that you use to set a business interaction context. You also add items to engineering work orders the same way that you add items to a business interaction.

Like business interactions, you associate workflow templates with engineering work orders. See "Creating an Engineering Work Order".

See the following topics for more information about working with engineering work orders:

- Working with Business Interactions
- Engineering Work Order - New Page
- Engineering Work Order - Information Page
- Engineering Work Order Summary Page
- Deleting an Engineering Work Order

Controlling Configuration Version Life Cycles from Engineering Work Orders

Configuration version life cycles are controlled by engineering work orders or by the configuration versions themselves. For example, if you include a Service entity with a configuration in an engineering work order, you can determine whether the life cycle of the work order controls the status transitions of the Service configurations.

You control this behavior with the **Controls Configuration Lifecycle** check box in Engineering Work Order pages. You can enable or disable this check box at any time, even if the engineering work order already includes items.

- When **Controls Configuration Lifecycle** is selected, completing the engineering work order means that all included inventory items are set to Installed status and all related entity configurations are completed.
- When **Controls Configuration Lifecycle** is not selected, completing the engineering work order means that all inventory items are set to Installed status, but all related entity configurations remain in In Progress status.

> **Note:**
>
> The **Controls Configuration Lifecycle** setting is ignored for Pipe and Connectivity entities in Pending Disconnect status. Their design versions are always completed when an engineering work order to which they belong is completed.

To control configuration version life cycles from engineering work orders:

- In an Engineering Work Order - New or Engineering Work Order - Information page, select **Controls Configuration Lifecycle**.

  The setting applies to all configurations currently in the engineering work order and to configurations added subsequently.

Related Topics

Working with Business Interactions

Engineering Work Order - New Page

Engineering Work Order - Information Page

Engineering Work Order Summary Page

Deleting an Engineering Work Order

Engineering Work Order - New Page

You use the Engineering Work Order - New page to create new engineering work orders.

> **Note:**
>
> Additional fields may be displayed if the Engineering Work Order specification has been modified in Design Studio.

Field	Description
Specification	(Read-only) Displays the name of the Engineering Work Order specification.
ID	If the entity specification requires a manually entered ID, enter a unique ID for the entity. Most entity specifications are defined in Design Studio so that IDs are generated automatically. The **ID** field for these specifications contains the text AUTOGENERATE.
Name	Enter a name for the engineering work order.

Field	Description
Type	(Optional) Select a type that applies to this engineering work order. The following types are available by default: • Commissioning • Decommissioning • Field Work • Network Reconfiguration • Installation • Upgrade • Replacement Additional types may be available if the Engineering Work Order specification has been extended in Design Studio.
Standard Operating Procedure	(Optional) Enter a URL that points to a standardized document such as a schedule or job definition.
Desired Due Date	Enter the date and time by which the engineering work order should be competed.
Actual Completion Date	Enter the date when the engineering work order was actually completed.
Engineering Drawings	(Optional) Enter a URL that points to a drawing related to this engineering work order.
Effective Date	Enter the date and time by which the engineering work order becomes active. **Note:** If you select a **Workflow Template**, the system displays current date and time in **Effective Date** and changes the field as non-editable.
Workflow Template	(Optional) Select a workflow template to associate with the engineering work order. If you associate a workflow template with the engineering work order, its Summary page includes two additional tabs, the **Activity Details** tab and the **Gantt Chart** tab.
Status	Displays the current engineering work order status. See *UIM Concepts* for more information about engineering work order life cycles and statuses.
Description	(Optional) Enter a description of the engineering work order.
Work Order Document	(Optional) Enter a URL that points to a document related to this engineering work order.
Organization	(Optional) Enter the organization responsible for completing this engineering work order.
Assigned To	Select the person who is responsible for completing this engineering work order.
Controls Configuration Lifecycle	(Optional) Select if you want the engineering work order to control the life cycle of entity configurations associated with it.

Related Topics

Creating an Engineering Work Order

Business Interaction Summary Page

Engineering Work Order - Information Page

You use the Engineering Work Order - Information page to edit the information that appears in the Summary page Information section. Some data elements, such as the ID, cannot be changed after the entity is created.

> **Note:**
>
> Additional fields may be displayed if the Engineering Work Order specification has been modified in Design Studio.

Field	Description
Specification	(Read-only) Displays the name of the Engineering Work Order specification.
ID	If the entity specification requires a manually entered ID, enter a unique ID for the entity. Most entity specifications are defined in Design Studio so that IDs are generated automatically. The **ID** field for these specifications contains the text AUTOGENERATE.
Name	Enter a name for the engineering work order.
Type	(Optional) Select a type that applies to this engineering work order. The following types are available by default: • Commissioning • Decommissioning • Field Work • Network Reconfiguration • Installation • Upgrade • Replacement Additional types may be available if the Engineering Work Order specification has been extended in Design Studio.
Standard Operating Procedure	(Optional) Enter a URL that points to a standardized document such as a schedule or job definition.
Desired Due Date	Enter the date by which the engineering work order should be competed.
Actual Completion Date	Enter the date and time by which the engineering work order was completed.
Engineering Drawings	(Optional) Enter a URL that points to a drawing related to this engineering work order.
Effective Date	Enter the date and time by which the engineering work order becomes active. **Note**: If you select **Workflow Template**, the system displays current date and time in **Effective Date** and changes the field to non-editable.
Status	Displays the current engineering work order status. See *UIM Concepts* for more information about engineering work order life cycles and statuses.

Field	Description
Workflow Template	Displays the workflow template associated with the engineering work order, if any. (Optional) You can select a workflow template to associate with the engineering work order. If you associate a workflow template with the engineering work order, its Summary page includes two additional tabs, the **Activity Details** tab and the **Gantt Chart** tab.
Description	(Optional) Enter a description of the engineering work order.
Work Order Document	(Optional) Enter a URL that points to a document related to this engineering work order.
Organization	(Optional) Enter the organization responsible for completing this engineering work order.
Assigned To	Select the person who is responsible for completing this engineering work order.
Controls Configuration Lifecycle	(Optional) Select if you want the engineering work order to control the life cycle of entity configurations associated with it.

Related Topics

Creating an Engineering Work Order

Business Interaction Summary Page

Deleting an Engineering Work Order

Engineering Work Order Summary Page

You use the Engineering Work Order Summary page to define the content for an engineering work order.

If you associate a workflow template with an engineering work order, the Summary page includes two additional tabs:

- Activity Details Tab
- Gantt Chart Tab

See the following topics for more information about summary pages:

- Related Pages Menu
- Actions Menu

> **Note:**
>
> The sections listed in the following table are specific to the Engineering Work Order Summary page. See "Entity Summary Page" for information about Summary page fields that are common among all entities.

Section	Description
Information	Displays basic information about the entity, most of which was defined when you created the entity. Click **Edit** to change this information. Some data elements, such as the ID, cannot be changed after the entity is created. See "Creating Entities " and "Business Interaction - New Page" for more information. Click **Other System** to view fields related to systems with which UIM is cooperating. These fields are visible by default when populated and are hidden by default when not populated.
Engineering Work Order Hierarchy	Displays a tree view of the engineering work order and any child engineering work orders. Engineering work orders can include hierarchies of other engineering work orders. For example, a capital improvement project could be broken into smaller engineering projects, each of which is broken into work orders. Options available in the **View** and **Format** menus enable you to control how the engineering work orders appear in the Engineering Work Order Hierarchy section. See "Working with Entity Hierarchies" for more information.
Parent Engineering Work Order	Displays the parent engineering work order if the engineering work order is a child of another engineering work order. Click the value in the **ID** field to navigate to the Summary page of the parent engineering work order.
Engineering Work Order Items	Do one of the following: • Click **Items** to add an item to the engineering work order. You can search for existing items or create and add new items. See "Modifying Entities from the Business Interaction Summary Page" for more information. • Click **Transfer** to transfer items from one engineering work order to another. See "Transferring Items Between Business Interactions" for more information. • Select a row and click **Delete** to remove the item from the engineering work order. See "Deleting Items from Business Interactions" for more information.
Transactions Log	For engineering work orders created by web services, contains a list of all XML inputs. Click the sequence number of an XML input to view its full contents.

Related Topics

Understanding Business Interaction Content

Defining the Content of a Business Interaction

Managing the Business Interaction Life Cycle

Deleting an Engineering Work Order

Creating an Engineering Work Order

You can create an engineering work order from the Engineering Work Order - New page.

To create an engineering work order:

1. In the **Tasks - All Tasks** group of the navigation section, click **Engineering Work Orders**.
2. In the Search Results section, click **Create**.

   The Engineering Work Order - New page appears.

3. In the **Name** field, enter a name for the engineering work order.
4. In the **Desired Due Date** field, enter the date and time by which the engineering work order should be competed.
5. In the **Effective Date** field, enter the date and time by which the engineering work order becomes active.

> **Note:**
>
> If you select a **Workflow Template**, the system displays current date and time in **Effective Date** and changes the field as non-editable.

6. (Optional) From the **Workflow Template** list, select a workflow.

   You can optionally associate a workflow template with an engineering work order. A workflow template defines an ordered, managed set of activities. The workflow must be completed before you can complete the engineering work order.

   When you associate a workflow with an engineering work order, the Engineering Work Order Summary page adds two tabs: the **Activity Details** tab and the **Gantt Chart** tab. You use these tabs to manage the workflow and its activities.

   When you select a workflow from the **Workflow Template** list, the following occurs:

   - The **Name** field is auto-populated with a name in the format:

     templateName_user_sequenceNumber

     where:

     templateName is the name of the workflow template.

     user is the name of the UIM user.

     sequenceNumber indicates the nth workflow that the user is associating with the engineering work order. For example, a sequence number of 3 indicates that this is the third workflow that the user is associating with the engineering work order.

     For example, EWOWORKFLOWTEMP_inv_3

     You can edit the autopopulated name in the **Name** field.
   - The **Desired Due Date** field is auto-populated with the effective date of the last activity in the workflow. This field is editable.
   - The **Effective Date** field is auto-populated with the effective date of the last activity in the workflow. This field is read-only.
7. (Optional) Enter information into non-required fields.
8. (Optional) To create an additional engineering work order, click **Save and Add Another**.
9. Click **Save and Continue**.

   The **Activity Details** tab appears, displaying a list of all the activities in the workflow in chronological order. See "Managing Activities" for more information.

Deleting an Engineering Work Order

You can request a delete of an Engineering Work Order from the search page. You can only delete an Engineering Work Order that is cancelled. A delete of an Engineering Work Order requires you to have an additional security role of **ProjectManager**. See *UIM System Administrator's Guide* for information about granting application roles.

Related Topics

Working with Engineering Work Orders

Engineering Work Order - Information Page

Engineering Work Order Summary Page

Working with Projects

You use projects for two purposes:

- To create and manage channelized connectivity maintenance activities such as grooming and rehoming. Each project can include any number of activities.

> **Note:**
>
> Projects can be used only for maintaining channelized connectivity. You cannot use projects for maintaining packet connectivity.

- To manage related business interactions and engineering work orders.

See the following topics for more information about working with projects:

- Editing Project Information
- Working with Maintenance Activities
- Completing a Project
- Project - New Page
- Project Summary Page

Editing Project Information

After you create a project, you can edit some of the basic identifying information you supplied when you created it.

To edit project information:

1. Open the Project Details page of a project.
2. In the **Project Details** tab, click the **Edit** button.

   The **Name**, **Description**, and **Due Date** fields become editable.
3. Make changes to the editable fields.
4. Click **Save** or **Save and Close**.

   Your changes are saved. If you clicked **Save and Close**, the fields are no longer editable.

Related Topic

Working with Maintenance Activities

Completing a Project

You can complete a project to indicate that you have finished working with it. You can complete a project even if it has maintenance activities in Ready or Finished status.

> **Note:**
>
> After you complete a project, it cannot be made active again. Its activities are no longer available to be processed.

To complete a project, do one of the following:

- In a Project Search Results table, select a project and then select **Complete** from the **Actions** menu.
- In a Project Details page, select **Complete** from the **Actions** menu.

Associating Business Interactions and Engineering Work Orders with Projects

You can associate business interactions and engineering work orders with projects so that you can manage them collectively. For example, if you have a complex network infrastructure project, it might be useful to divide it into several engineering work orders that you include in a project.

To associate a business interaction or engineering work order with a project:

1. In the Business Interactions section of the **Project Details** tab, click the **Associate** button.

   The Business Interaction Search page appears.
2. Search for and select a business interaction, and then click **OK**.

   The dialog box closes and the business interaction appears in the Business Interactions section.

Related Topics

Viewing Business Interaction Activities

Viewing Business Interaction Activities

You can view the activities included in the workflows of business interactions and engineering work orders associated with projects.

To view activities in associated business interactions:

- In the Business Interactions section of the **Project Details** tab, select a business interaction.

  UIM displays the activities in the workflow of the selected business interaction in the Business Interaction Activities section.

Related Topics

Associating Business Interactions and Engineering Work Orders with Projects

Working with Maintenance Activities

You add activities, such as grooming or rehoming connectivities, to projects. You perform actions on activities individually or in groups rather than as part of the entire project.

See the following topics for more information about working with maintenance activities:

- Adding a Maintenance Activity to a Project
- Submitting Maintenance Activities
- Canceling Maintenance Activities
- Deleting Maintenance Activities
- Validating Maintenance Activities

Adding a Maintenance Activity to a Project

When you add a maintenance activity to a project, you specify its type. There are four maintenance activity types:

- Groom
- Rehome
- Insert Node
- Remove Node

To add a maintenance activity to a project:

1. In a Project Details page, click the **Project Activities** tab.
2. In the table toolbar, click the **Create** button.
3. In the dialog box that appears, select the activity type and enter a name.
4. Click **OK**.

   The dialog box closes and the activity is added to the list.

Related Topics

Performing a Groom Activity

Performing a Rehome Activity

Inserting Network Nodes

Removing Network Nodes

Submitting Maintenance Activities

You can submit maintenance activities to UIM individually or in groups. When you submit an activity, UIM processes it in the background. A progress bar indicates its percentage of completion. Activities must be in Ready or Failed status when you submit them.

To submit maintenance activities:

1. In the **Project Activities** tab of a Project Details page, select one or more activities in Ready or Failed status.
2. From the **Actions** menu, select **Submit**.

   UIM begins to process the activities. Their status changes to In Progress and the progress bar indicates their completion percentage. The **Change Items** tab is updated to include a list of entities changed during the processing of the activities. When UIM finishes processing, the status of the activities change to Completed.

Related Topics

Performing a Groom Activity

Performing a Rehome Activity

Inserting Network Nodes

Removing Network Nodes

Canceling Maintenance Activities

You can cancel maintenance activities that are in In Progress status (submitted, but not yet complete). Canceling an activity rolls back all actions already taken.

To cancel maintenance activities:

1. In the **Project Activities** tab of a Project Details page, select one or more activities in In Progress status.
2. From the **Actions** menu, select **Cancel**.

   UIM stops processing the selected activities and rolls back any changes already made. The activity is placed in Canceled status.

Related Topics

Performing a Groom Activity

Performing a Rehome Activity

Inserting Network Nodes

Removing Network Nodes

Deleting Maintenance Activities

You can delete maintenance activities that you have added to projects. You can delete only activities that are in Ready status.

To delete maintenance activities:

1. In the **Project Activities** tab of a Project Details page, select one or more activities.
2. From the **Actions** menu, select **Delete**.
3. In the confirmation dialog box that appears, click **OK**.

   The activities are removed from the **Project Activities** tab.

Related Topics

Performing a Groom Activity

Performing a Rehome Activity

Inserting Network Nodes

Removing Network Nodes

Validating Maintenance Activities

You can validate maintenance activities to ensure that they can be completed successfully. If the activity is not configured properly, UIM displays error messages that list issues that must be addressed.

You can validate activities that are in Ready or Failed status.

To validate maintenance activities:

1. In the **Project Activities** tab of a Project Details page, select one or more activities.
2. From the **Actions** menu, select **Validate**.
3. In the confirmation or error dialog box that appears, click **OK**.

Related Topics

Performing a Groom Activity

Performing a Rehome Activity

Inserting Network Nodes

Removing Network Nodes

Creating a Project Activity

UIM includes features that enable you to create a new activity and add it to your project.

You can perform the following maintenance operations:

- Performing a Groom Activity
- Performing a Rehome Activity
- Inserting Network Nodes
- Removing Network Nodes

You configure and perform these operations as activities in a project. See "Working with Projects" for information about projects. See "Working with Maintenance Activities" for information about adding activities to projects and about submitting activities to UIM for processing.

Performing a Groom Activity

After you have added a groom activity to a project, you specify the source and target entities and the source and target channels, riders, and locations provided by the corresponding entities. The source is the connectivity or pipe you are grooming and the target is the connectivity or pipe where the riders will be reassigned.

The source and target entities can be within the connectivity or pipe (intra-facility grooming) or different (inter-facility grooming).

You can perform the groom activity on the following entities:

- Connectivities
- Pipes

> **Note:**
>
> The Groom Activity does not work for the pipes having signal structure.

After configuring the grooming activity, you can preview the changes, then submit the activity for processing.

To perform the groom activity:

1. In the **Activities** tab of a Project Summary page, select a grooming activity.

   The Groom area displays Source, Target, and Activity Items sections for this activity.
2. In the Source section:
   a. Click the **Connectivity** or **Pipe** icon.

      The corresponding Search dialog box appears.
   b. Search for the entity that you want to groom.
   c. Select one or more source entities in the search results, then click **OK**.

      The entity Search dialog box closes and the selected entities appear in the Source section visualization.
3. In the Target section:
   a. Click the **Connectivity** or **Pipe** icon.

      The corresponding entity Search dialog box appears.
   b. Search for target entity to which groomed riders will be reassigned.
   c. Select one or more target entities in the search results, then click **OK**.

      The entity Search dialog box closes and the selected entities appear in the Target section visualization.
4. In the Source section, expand the entity record, and select one or more channels, locations, or riders.
5. In the Target area, expand the record, and select one or more parent circuits you are grooming to.
6. Repeat steps 4 through 7 for additional channels or riders you want to include in the grooming activity.
7. Click the **Add to Groom** button.

   UIM validates your selections and the changes you specified are listed in the **Change Items** tab of the Groom area.
8. Go to **Project Activities** and select **Submit** from the **Activities** list.

   See "Submitting Maintenance Activities" for information about submitting the activity for processing.
9. After the successful submission of the activity, open **Impacted Items** tab under the Groom section.
10. Verify the groom activity.

11. (Optional) Click **View Design** to view the assignment changes from the corresponding summary page.

Related Topics

Working with Projects

Working with Maintenance Activities

Performing a Rehome Activity

After you have added a rehome activity, to a project you specify the source and target devices or equipments and device interfaces or physical ports. You can preview the results of the activity and submit it for processing.

You can perform a rehome activity on the following entities:

- Logical device
- Physical device
- Equipment

To perform a rehome activity:

1. In the **Activities** tab of a Project Summary page, select a rehoming activity.

   The Rehome area displays Source, Target, and Change Items sections for this activity.
2. In the Source section:
   a. Click the **Logical Device**, **Physical Device**, or **Equipment** icon.

      The entity Search dialog box appears.
   b. Search for the entity that you want to rehome.
   c. In the search results, select one or more entities, then click **OK**.

      The entity Search dialog box closes and the selected entities appear in the Source section visualization.
3. In the Target section:
   a. Click the **Logical Device**, **Physical Device**, or **Equipment** icon.

      The entity Search dialog box appears.
   b. Search for the entities to which you want to rehome.
   c. In the search results, select one or more entities, then click **OK**.

      The entity Search dialog box closes and the selected entities appear in the Target section visualization.
4. In the Source area, expand the entity record, and select a device interface or physical port you want to rehome.
5. In the Target area, expand the entity record, and select the device interface or physical port to which you want to rehome.
6. Repeat steps 4 through 7 for every connectivity you want to rehome.
7. Click the **Add to Rehome** button.

   UIM validates your selections and the changes you specified in the dialog boxes are listed in the **Change Items** tab of the Rehome area.
8. Go to **Project Activities** section and select **Submit** from the **Activities** list.

See "Submitting Maintenance Activities" for information about submitting the activity for processing.

9. After the successful rehome, open the **Impacted Items** tab under the Rehome section.
10. Verify the changes.
11. (Optional) You can click **View Design** to view the assignment changes from the corresponding summary page.

Related Topics

Working with Projects

Working with Maintenance Activities

Inserting Network Nodes

After you have added an activity for inserting a network node to a project, you select the network that contains the network nodes and edges you want to work with. You then select the network edge into which you want to insert the node and the device that you want the node to represent. The edge into which you insert the node must represent a bearer facility and not a rider.

See *UIM Concepts* for information about the rules that govern node insertion.

To insert a network node:

1. In the **Activities** tab of a Project Summary page, select an insert network node activity.

   The Insert Network Node area displays a blank network canvas and an Activity Items section.
2. In the toolbar, click the **Network** icon.

   The Network Search dialog box appears.
3. Search for a network.

   The network canvas displays the network you selected.
4. Click the **Insert Node** button.

   The Insert Node dialog box appears, displaying the Select Network Edge area. This dialog box includes a wizard interface. You can return to previous steps by clicking the **Back** button.
5. Select the network edge into which you want to insert a node, then click **Next**.

   The Select Device area appears, displaying Logical Device Search and Search Results sections.
6. Search for a logical device to be represented by the node you insert.
7. From the results of the search, select a logical device.
8. Click **Next**.

   The Select Interfaces area appears, displaying Connectivity Device Interfaces and Device Interfaces sections.

   The Source area in the Connectivity Device Interfaces section displays the existing connectivity represented by the edge into which you are inserting a node. The Target area shows the two connectivities that will result from the insertion of the node. The Z interface of the first connectivity and the A interface of the second connectivity are undefined.

The Device Interfaces section shows the device interface hierarchy of the logical device you selected previously.

9. In the Target area of the Connectivity Device Interfaces section, select the first new connectivity.
10. In Device Interfaces section, select the device interface to assign to the Z interface of the first connectivity, then click the **Assign** button.

    UIM assigns the interface and refreshes the Target area. A green check mark appears next to the icon for the Z interface of the first connectivity.
11. In Device Interfaces section, select the device interface to assign to the A interface of the second connectivity, then click the **Assign** button.

    UIM assigns the interface and refreshes the Target area. A green check mark appears next to the icon for the A interface of the second connectivity.
12. Click **Next**.

    The Review area appears, displaying the actions that will be performed to complete the activity.
13. Click **Finish**.

    The Insert Node dialog box closes. The planned node insertion is displayed in the network visualization with changes highlighted in color. The actions required by the activity are listed in the **Change Items** tab.

    See "Submitting Maintenance Activities" for information about submitting the activity for processing.

Related Topics

Working with Projects

Working with Maintenance Activities

Removing Network Nodes

After you have added an activity for removing a network node to a project, you select the network that contains the network nodes and edges you want to work with. You then select network node that you want to remove.

See *UIM Concepts* for information about the rules that govern node removal.

To remove a network node:

1. In the **Activities** tab of a Project Summary page, select a remove network node activity.

   The Remove Network Node area displays a blank network canvas and an Activity Items section.
2. In the toolbar, click the **Network** icon.

   The Network Search dialog box appears.
3. Search for a network.

   The network canvas displays the network you selected.
4. Click the **Remove Node** button.

   The Remove Node dialog box appears, displaying a list of nodes in the network. This dialog box includes a wizard interface. You can return to the previous step by clicking the **Back** button.

5. Select the node that you want to remove, then click **Next**.

   The Review area appears, displaying the actions that will be performed to complete the activity.

6. Click **Finish**.

   The Remove Node dialog box closes. The planned node removal is displayed in the network visualization with changes highlighted in color. The actions required by the activity are listed in the **Change Items** tab.

   See "Submitting Maintenance Activities" for information about submitting the activity for processing.

Related Topics

Working with Projects

Working with Maintenance Activities

Project - New Page

You use the Project - New page to create new projects.

Field	Description
Name	Enter a name for the project.
Description	(Optional) Enter a description of the project.
Due Date	(Optional) Enter the date by which the project should be completed.
Status	Displays the status (Created) of the project.

Related Topics

Creating Entities

Project Summary Page

Working with Projects

Project Summary Page

You use the Project Summary page to define the content for a Project entity.

> **Note:**
>
> The following sections and tabs are specific to the Project Summary page. See "Entity Summary Page" for information about Summary page fields that are common among all entities.

Section or Tab	Description
General Information	Displays basic information about the project, most of which was defined when the entity was created. Click **Edit** to change the project name, description, or due date.

Section or Tab	Description
Project Activities	Use this tab to add and manage activities. Existing activities are listed in a table. See "Working with Maintenance Activities" for more information.
Groom	Use this section to configure grooming activities. The Groom section includes the Source section in which you select the source connectivity or pipe and the Target section in which you select the target connectivity or pipe. The **Add to Groom** button becomes available after you have made the source and target selections. Clicking this button adds the changes to the **Change Items** section, in which you can view the configuration of the activity. See "Performing a Groom Activity" for more information.
Rehome	Use this section to configure rehoming activities. The Rehome section includes the Source section in which you select a source logical device, physical device, or equipment and the Target section in which you select a target logical device, physical device, or equipment. The **Add to Rehome** button becomes available after you have made the source and target selections. Clicking this button adds the changes to the **Change Items** section, in which you can view the configuration of the activity. See "Performing a Rehome Activity" for more information.
Insert Node	Use this section to configure insert node activities. The Insert Node section includes the Source section in which you select the network that includes the network edge into which you want to insert a node. The Source section includes a network visualization that you use to make your selection. See "Visualization Area" for more information. The **Insert Node** button becomes available after you have made the source selection. Clicking this button opens the Insert Node dialog box in which you complete the configuration of the activity. See "Inserting Network Nodes" for more information.
Remove Node	Use this section to configure remove node activities. The **Remove Node** section includes the Source section in which you select the network that includes the network edge from which you want to remove a node. The Source section includes a network visualization that you use to make your selection. See "Visualization Area" for more information. The **Remove Node** button becomes available after you have made the source selection. Clicking this button opens the Remove Node dialog box in which you complete the configuration of the activity. See "Removing Network Nodes" for more information.
Change Items	This tab lists actions that are direct results of the activity. For example, if you selected two channels to rehome, the table in this section lists two Rehome actions. The affected entity is shown along with other information such as the source and target interfaces. This section is populated only after the activity has been fully configured.
Impact Items	This tab lists actions that are indirect results of the activity. For example, a grooming activity may result in the creation of gaps. The section lists the actions and includes links to the affected entities. Actions that cannot be completed by UIM are in In Progress status. You can follow the entity links in the table to complete the actions. This section is populated during the processing of the activity.

Visualization Area

Groom, Rehome, Insert Node, and Remove Node sections include one or two visualization areas in which you select entities. Most of the toolbar buttons are the same for all sections, but some are specific to certain sections.

The visualization area also includes an Overview section that displays a small-scale view that you can use for navigation. A Details section shows information about the element currently selected in the visualization.

Toolbar Button	Description
Select	Click this button, and then select an entity in the visualization. After you select an entity, you can perform actions on the entity. For example, you can associate resources with nodes in a network visualization. When you select an entity, information about it is displayed in the Information section.
Zoom	Click this button, and then drag out an area in the visualization to zoom into.
Pan	Click to pan within the visualization. When you click the **Pan** button, the cursor changes to a hand and enables you to drag the visualization. Panning is useful when the visualization is zoomed in and only part of the network is visible.
Show All	Click to refresh the visualization to the zoom level required to show all elements in the network.
Zoom In	Click to zoom into the current center point of the visualization.
Zoom Out	Click to zoom out from the current center point of the visualization.
Add Connectivity	(Groom activities only) Click to add a connectivity to the visualization.
Add Device	(Rehome activities only) Click to add a logical device to the visualization.
Add Network	(Insert Node and Remove Node activities only) Click to add a network to the visualization.
Save	Click to save the current positions in the visualization. If you do not save the current positions, changes you make to the layout or position of elements are lost when you navigate away from the page. **Note:** Saving positions affects only the appearance and arrangement of the visualizations, not the content of the related entities.
Clear	Click to clear the contents of the visualization.
Spring Embedder Layout	Click to arrange elements with no edge crossings or very few edge crossings. This layout is useful for depicting small- and medium-sized networks.
Random Layout	Click to arrange the elements randomly, with random-length edges.

Toolbar Button	Description
Uniform Length Edges Layout	Click to arrange elements to create edges of approximately equal length while minimizing edge crossings. The initial position of nodes affects the layout. This layout is useful for visualizing WANs. Networks with a star topology are automatically displayed in this layout.
Tree Layout	Click to arrange elements orthogonally in levels depending on their relationships.
Circular Layout	Click to arrange elements in a circle. Networks with a ring topology are automatically displayed in this layout.
Topological Mesh Layout	Click to arrange elements so that mesh relationships are visible. This layout is valid only in networks whose topologies include loops, such as mesh topologies. You see an error message if you try to apply it another topology. Networks with a mesh topology are automatically displayed in this layout.

Generating Bills of Materials

You can generate a Bill of Materials (BOM) for engineering work orders, business interactions, and projects. The BOM is based on the resource and activity specifications included in the associated workflow template, including any modifications made in UIM. (For projects, the BOM reflects the combined BOMs of the engineering work orders and business interactions in the project.)

You can generate the following types of BOM:

- Activity: Lists all activities in the workflow.
- Quote: Lists and provides the cost for all activities and resources in the workflow whose specifications have been tagged as billable in Design Studio.
- Resource: Lists all resources associated with activities in the workflow.
- Engineering: Combines the content of the Activity and Resource types.

To generate a BOM:

1. Navigate to one of the following:
   - The Summary page of an engineering work order or business interaction that has a workflow template.
   - The Summary page of a Project that includes engineering work orders or business interactions that have workflow templates.
2. From the **Actions** menu, select **Bill of Materials**, and then select the type.

   UIM processes data and then displays the Bill of Materials dialog box.
3. Click the **Close** button to close the dialog box.

Related Topics

Exporting a Bill of Materials to an XML File

Exporting a Bill of Materials to an XML File

You can export a BOM from UIM in XML format for use in other applications.

To export a BOM to an XML file.

1. In a Bill of Materials dialog box, click the **Export to XML** button.

   The Save dialog box appears.
2. Enter a file name and click **Save**.

Related Topics

Generating Bills of Materials

6

Managing Workflows and Assigned Activities

Engineering work orders and business interactions can include workflow templates that define an ordered series of activities to complete. You can use projects to group related engineering work orders and business interactions so that you can manage them as a whole.

UIM provides tools that enable you to manage workflows and the activities they include. You manage workflows in the same way whether they are part of an engineering work order or a business interaction.

Two groups of UIM users work with workflows and activities:

- Project managers work with workflows as a whole by monitoring progress, assigning users to activities, tracking the schedule, and so on. Project managers work mainly from the **Activity Details** and **Gantt Chart** tabs of engineering work orders and business interactions that include workflow templates. For information about managing workflows and their activities as a project manager, see Managing Workflows.
- Assigned users work with activities that are assigned to them or to their workgroup. For information about working with activities assigned to you or to your workgroup, see "Working with Assigned Activities".

Project managers and assigned users can perform some of the same tasks, such as starting, updating, and completing activities. They usually perform these tasks in different pages, however.

Managing Workflows

You can manage workflows as a whole by monitoring progress, assigning users to activities, tracking the schedule, and so on. Project managers work mainly from the **Activity Details** and **Gantt Chart** tabs of engineering work orders and business interactions that include workflow templates.

See the following topics when managing workflows:

- Viewing the Workflow as an Activity List
- Monitoring Workflow Progress in a Gantt Chart
- Activity Details Tab
- Gantt Chart Tab

Viewing the Workflow as an Activity List

You can view a workflow associated with an engineering work order or business interaction as an ordered list of activities. From this list, you can manage the workflow by starting, updating, and completing activities, among other actions.

Many of the actions you can take on an activity in the list can also be done from the Activity Summary page.

To view a workflow as an activity list:

- In the Summary page of a business interaction or engineering work order that has an associated workflow template, click the **Activity Details** tab.

Related Topics

Opening the Activity Summary Page from the Activity List

Assigning a User to Multiple Activities at a Time

Inserting Activities into Workflows

Updating the Progress of Activities

Opening the Activity Summary Page from the Activity List

You can open the Summary page for an activity from the **Activity Details** tab. In the Activity Summary page, you can change the status of the activity, update its progress, associate resources, and work with checklists.

To open the Activity Summary page:

- In the **Activity Details** tab of an Engineering Work Order or Business Interaction page, click a link in the Name column of an activity.

  The Activity Summary page appears.

Related Topics

Assigning a User to Multiple Activities at a Time

Updating the Progress of Activities

Starting Activities

Completing Activities

Monitoring Workflow Progress in a Gantt Chart

You can view the overall progress of a workflow as a Gantt chart. Each activity is shown as a separate line, with the length of the bar representing its duration. Activities that have been identified as critical are shown in red. Completed activities are in bold.

You can change the way the Gantt chart displays the workflow. You can also change the dependencies of activities in the workflow.

To monitor progress in a Gantt chart:

- In the Summary page of an engineering work order or business interaction that has an associated workflow template, click the **Gantt Chart** tab.

Related Topics

Modifying Dependencies Between Activities

Changing the Gantt Chart List

Changing the Appearance of Dependencies

Going to a Specific Date

Changing the Gantt Chart Time Scales

Setting the Gantt Chart Time Period

Modifying Dependencies Between Activities

You can use the **Gantt Chart** tab to modify the dependencies among activities in the workflow. For example, if a workflow creates sequential activities A, B, C, and D, you can make activity D directly dependent on activity A. This means that work on activity D can begin at the same time as activity B. All other dependencies are updated accordingly and the Gantt chart redisplays to reflect the changes.

UIM prevents you from creating circular dependencies.

To modify dependencies between activities:

1. In the **Gantt Chart** tab of an Engineering Work Order or Business Interaction page, select an activity.
2. Click the **Modify Dependencies** icon in the toolbar.

   The Modify Dependencies dialog box appears. The activities on which the selected activity depends appear in the Current Dependencies section. All other activities in the workflow appear in the Activities section.
3. To add a new dependency, select an activity in the Activities section, and then click the down arrow button.

   The activity moves to the Current Dependencies section.
4. To remove a dependency, select an activity in the Current Dependencies section, and then click the up arrow button.

   The activity moves to the Activities section.
5. (Optional) Preview the changes to the Gantt chart:
   a. Click the **Preview** button.

      The Modify Dependencies dialog box displays a preview of the Gantt chart reflecting your modifications.
   b. Do one of the following:

      Click **Back** to return to the normal Modify Dependencies dialog box.

      Click **Apply** to accept the modifications and close the dialog box.

      Click **Cancel** to close the dialog box and discard the modifications.

   If you accept the modifications, the Gantt chart redisplays to reflect them.

Related Topics

Changing the Gantt Chart List

Changing the Appearance of Dependencies

Going to a Specific Date

Changing the Gantt Chart Time Scales

Setting the Gantt Chart Time Period

Changing the Gantt Chart List

You can change the way the Gantt chart lists activities.

To change the Gantt chart list:

1. In the **Gantt Chart** tab, select **List Pane** from the **View** menu.
2. Do one of the following:
   - Select **Columns** and then select the columns you want to display.
   - Select **Expand All** or **Collapse All** to show all or none of the rows in the list.

Related Topics

Changing the Appearance of Dependencies

Going to a Specific Date

Changing the Gantt Chart Time Scales

Setting the Gantt Chart Time Period

Changing the Appearance of Dependencies

You can change the way that the Gantt chart displays dependencies between activities.

To change the appearance of dependencies:

1. In the **Gantt Chart** tab, select **Show Dependencies** from the **View** menu.
2. Select one of the following options:
   - **As Lines** (Default)
   - **As Menu Items**
   - **None**

Related Topics

Changing the Gantt Chart List

Going to a Specific Date

Changing the Gantt Chart Time Scales

Setting the Gantt Chart Time Period

Going to a Specific Date

You can move the Gantt chart to a specific date.

To go to a specific date:

1. In the **Gantt Chart** tab, select **Go to Date** from the **View** menu.
2. In the Go to Date dialog box, enter a date, and then click **OK**.

   The dialog box closes and the Gantt chart displays information for the selected date.

Related Topics

Changing the Gantt Chart List

Changing the Appearance of Dependencies

Changing the Gantt Chart Time Scales

Setting the Gantt Chart Time Period

Changing the Gantt Chart Time Scales

To change the Gantt chart time scales:

1. In the **Gantt Chart** tab, select **Time Scale** from the **View** menu.

   The Time Scale dialog box appears.
2. In the **Major Axis** field, select the time period you want displayed for the upper row in the chart heading.
3. In the **Minor Axis** field, select the time period you want displayed for the lower row in the chart heading.
4. Click **OK**.

   The dialog box closes and the Gantt chart displays the selected time scales.

Related Topics

Changing the Gantt Chart List

Changing the Appearance of Dependencies

Going to a Specific Date

Setting the Gantt Chart Time Period

Setting the Gantt Chart Time Period

To change time period displayed in the Gantt chart, do one of the following:

- Click the magnifier tools to zoom the chart to a shorter time period or out to a longer one.
- Select a predefined period of time from the menu in the toolbar.

Related Topics

Changing the Gantt Chart List

Changing the Appearance of Dependencies

Going to a Specific Date

Changing the Gantt Chart Time Scales

Activity Details Tab

The **Activity Details** tab displays the Activities list. The Activities list displays all the activities in the workflow in chronological order, with columns that show specific items of information.

Column	Description
Activity Name	The name of the activity, formatted as a link to its Activity Summary page.
Proposed Start Date	The originally scheduled start date and time.
Proposed End Date	The originally scheduled end date and time.
Actual Start Date	The date and time at which the activity was started. Blank if the activity is in Pending or Ready status.

Column	Description
Actual End Date	The date and time at which the activity was completed. Blank for all statuses except Completed.
Status	The activity's status (Pending, Ready, In Progress, or Completed).
Duration	The scheduled duration of the activity in days.
Assigned User	The user assigned to the activity. You can assign a user from this list or from the Activity Summary page.
Percent Complete	The percentage complete based on the **Percent Complete** field in the Activity Summary page.

Related Topics

Viewing the Workflow as an Activity List

Gantt Chart Tab

The **Gantt Chart** tab displays the workflow as a table with an associated Gantt chart. The table is collapsible. When collapsed, it shows information for the workflow as a whole. When expanded, each activity is listed in a separate row with corresponding information displayed. The calendar portion of the chart includes bars that reflect the duration of each activity (or of the workflow as a whole).

Column	Description
Activity Name	The name of the engineering work order, business interaction, or activity. Names of activities are indented.
Resource Name	The user assigned to the activity.
Start Date	The activity start date.
End Date	The activity end date.
Calendar	The calendar area displays the Gantt chart itself. The heading shows the dates. The corresponding activity information is displayed below the dates. You can change the date range to show a shorter or longer period of time. See Setting the Gantt Chart Time Period.

Related Topics

Monitoring Workflow Progress in a Gantt Chart

Managing Activities

Both project managers and assigned users work with activities. They can perform some of the same actions, but usually start from different UIM pages. Some activity actions can be performed from both the **Activity Details** tab and the Activity Summary page. Some can be performed in only one or the other.

When managing activities, see the following topics:

- Assigning Users to Activities
- Assigning a User to Multiple Activities at a Time
- Associating Resources with Activities

- Searching for Telephone Number Blocks from within Activities
- Inserting Activities into Workflows
- Updating the Progress of Activities
- Starting Activities
- Completing Activities
- Reopening Activities
- Working with Checklists

Assigning Users to Activities

You assign activities to the users who will complete them. After you assign a user to an activity, only that user and the project manager can modify the activity.

The users from which you can select are determined by the permissions assigned to users in Oracle Enterprise Manager. Task specifications can also restrict which users can be assigned to activities. The specification can include a list of user groups to which assigned users must belong. You set up user groups in WebLogic Server Administration Console. See *UIM System Administrator's Guide* for more information about assigning permissions and defining user groups. If email notification is set up in UIM, users receive notification when they are assigned an activity and also when the activity is ready to be worked on. See the section “About Email Notification" in the chapter, “Managing Workflow" in *UIM Concepts* and the chapter, "Extending Notifications" in *UIM Developer's Guide* for more information about email notifications.

To assign a user to an activity:

1. In the **Activity Details** tab of an Engineering Work Order or Business Interaction page, select an activity.
2. Click the **Assign** icon in the toolbar.

   The Assign Activity dialog box appears.
3. In the **Assign User** field, select a user.
4. Click **Save**.

   The dialog box closes and the assigned user appears in the Assigned User column for the selected activity.

Related Topics

Associating Resources with Activities

Inserting Activities into Workflows

Updating the Progress of Activities

Starting Activities

Completing Activities

Reopening Activities

Working with Checklists

Assigning a User to Multiple Activities at a Time

You can assign a user to multiple activities at a time from the **Activity Details** tab of the Engineering Work Order Summary page.

> **Note:**
>
> Only the user who has a role of **ProjectManager** can assign a user to multiple activities. See *UIM System Administrator's Guide* for information about granting application roles.

The users from which you can select are determined by the permissions assigned to users in Oracle Enterprise Manager. Task specifications can also restrict which users can be assigned to activities. The specification can include a list of user groups to which assigned users must belong. You set up user groups in WebLogic Server Administration Console. See *UIM System Administrator's Guide* for more information about assigning permissions and defining user groups. If email notification is set up in UIM, users receive notification when they are assigned an activity and also when the activity is ready to be worked on. See the section “About Email Notification" in the chapter, “Managing Workflow" in *UIM Concepts* and the chapter, "Extending Notifications" in *UIM Developer's Guide* for more information about email notifications.

To assign a user to multiple activities at a time:

1. In the **Activity Details** tab of an Engineering Work Order or Business Interaction page, select one or more activities.
2. Click the **Assign** icon in the toolbar.

   The Assign Activity dialog box appears.
3. In the **Assign User** field, select a user.
4. Click **Save**.

   The dialog box closes and the assigned user appears in the **Assigned User** column for all the selected activities.

Related Topics

Associating Resources with Activities

Inserting Activities into Workflows

Updating the Progress of Activities

Starting Activities

Completing Activities

Reopening Activities

Working with Checklists

Assigning a User to Multiple Activities from My Activities and My Group Activities

To assign a user to multiple activities:

1. Navigate to the My Activities or My Group Activities page.

2. Enter the search criteria and click **Search**.
3. In the Search Results section, select one or more activities.
4. Click the Assign icon on the top-right corner of the My Activities or My Group Activities search page.

   The Assign User page appears.
5. Select a user from the **Select User** list.
6. Click **Assign User**.

   The selected user is assigned to the activities.

Inserting Activities into Workflows

You can insert activities into a workflow to reflect work that was not included in the original template or to divide the work processes into different chunks. When you insert an activity, you can select from all the Task specifications for all the activities deployed to UIM.

The activity you insert can depend on the previous activity in the flow or parallel to it.

To insert an activity into a workflow:

1. In the **Activity Details** tab of an Engineering Work Order or Business Interaction page, select the activity after which you want to insert a new activity.
2. Click the **Create Activity** icon in the toolbar.

   The Insert Activity dialog box appears.
3. In the **Specification** field, select a Task specification.
4. In the **Name** field, enter a name for the activity.
5. In the **Duration** field, enter the duration of the activity in days.
6. Select the **Parallel** check box if you want the activity to be worked on at the same time as the activity that precedes it in the workflow.
7. Click **Save**.

   The dialog box closes and the activity is inserted.

Related Topics

Associating Resources with Activities

Assigning a User to Multiple Activities at a Time

Updating the Progress of Activities

Starting Activities

Completing Activities

Reopening Activities

Working with Checklists

Associating Resources with Activities

You can associate resources with activities in the Activity Workspace area of an Activity Summary page. Most resources you associate with activities become items in the business interaction or engineering work order to which the activity's workflow belongs. When a resource

is not business-interaction-enabled, associating it to an activity does not result in a business interaction item. See "Understanding Business Interaction Content" for more information about business interaction items.

If the Task specification on which the activity is based includes an association with a resource specification, you can create that resource from the **Actions** menu.

To associate a resource with an activity:

1. Open an Activity Summary page.
2. In the Activity Workspace section, do one of the following:

   To associate a resource based on a related specification:

   a. In the **Actions** menu, select the name of a specification that has been related to the Task specification on which the activity is based.

      A New page for the relevant entity type appears, with the specification already entered.

   b. Create the new entity normally, and then return to the Activity Summary page.

      The Activity Workspace section includes the new entity. The entity is also added as an item to the parent business interaction or engineering work order.

   To associate a resource not based on a related specification:

   a. Click the **Associate** button, and then select an entity type.

      A New page for the entity type appears.

   b. Create the new entity normally, and then return to the Activity Summary page.

      The Activity Workspace section includes the new entity. The entity is also added as an item to the parent business interaction or engineering work order.

Related Topics

Assigning a User to Multiple Activities at a Time

Inserting Activities into Workflows

Updating the Progress of Activities

Starting Activities

Completing Activities

Reopening Activities

Working with Checklists

Activity Summary Page

Searching for Telephone Number Blocks from within Activities

You can search for telephone number blocks from within activities in the Activity Workspace area of an Activity Summary page.

To search for telephone number blocks from within an activity:

1. Open an Activity Summary page.
2. In the Activity Workspace section, from the **Actions** menu, select **TN Bulk Actions**, and then select **Telephone Number Blocks**.

The Telephone Number Blocks page appears.

3. Enter the search criteria in the desired fields. Some fields require that you enter text; others allow you to select from lists.
4. In the **Block Size** field, enter the telephone number block size. This is a mandatory field.
5. Click **Search TN Blocks**.

   The telephone number blocks that meet your search criteria are displayed in the Blocks Results section.

Related Topics

Assigning a User to Multiple Activities at a Time

Inserting Activities into Workflows

Updating the Progress of Activities

Starting Activities

Completing Activities

Reopening Activities

Working with Checklists

Activity Summary Page

Updating the Progress of Activities

Project managers keep track of the progress of activities in engineering work orders and business interactions for which they are responsible. To keep this information up to date, you record your progress on an activity as you work on it.

You can update the progress of an in-progress activity and change its duration. Changing the duration of an activity affects the dates for other activities dependent on it.

To update activity progress from the Activity Summary page:

1. In the Activity Information section of an Activity Summary page, click the **Edit** button.
2. In the **Percent Complete** field, adjust the slider to the appropriate value.
3. Click **Save**.

Related Topics

Assigning a User to Multiple Activities at a Time

Inserting Activities into Workflows

Associating Resources with Activities

Starting Activities

Completing Activities

Reopening Activities

Working with Checklists

Starting Activities

You can start working on an activity when it is in Ready status and it has been assigned to you. An activity reaches Ready status when all the previous activities in its workflow have been completed. When you start working on an activity, you change its status to In Progress.

You can start an activity from the Activities list in the **Activity Details** tab or from the activity's Summary page.

Related Topics

Starting an Activity from the Activities List

Starting an Activity from the Activity Summary Page

Starting an Activity from the Activities List

To start an activity from the Activities List:

1. In the **Activity Details** tab of an Engineering Work Order or Business Interaction page, select the activity you want to start.
2. Click the **Start** icon in the toolbar.

   The status of the activity changes to In Progress. If a checklist is associated with the activity, it is created.

Related Topics

Starting an Activity from the Activity Summary Page

Starting an Activity from the Activity Summary Page

To start an activity from the Activity Summary page:

1. Navigate to the Activity Summary page of the activity.
2. From the **Actions** menu, select **Start**.

   The status of the activity changes to In Progress. If a checklist is associated with the activity, it is created and appears in the Checklist section.

Related Topics

Starting an Activity from the Activities List

Completing Activities

Completing an activity means that work on it is finished. If the activity has a checklist, all of the checklist items must be completed before you can complete the activity.

Completing an activity means that the next activity (or activities when there are more than one in parallel) changes to Ready status.

Related Topics

Completing an Activity From the Activity Details Tab

Completing an Activity From the Activity Summary Page

Completing an Activity From the Activity Details Tab

To complete an activity from the **Activity Details** tab:

1. In the **Activity Details** tab of an Engineering Work Order or Business Interaction page, select an activity that is finished.
2. Click the **Complete** icon in the toolbar.

   The activity status changes to Completed and the next activity or activities change to Ready status. If you complete an activity before or after its schedule completion date, the dates of other activities may change.

Related Topics

Completing an Activity From the Activity Summary Page

Completing an Activity From the Activity Summary Page

To complete an activity from the Activity Summary Page:

1. Navigate to the Activity Summary page of an activity that is ready to be completed.
2. In the **Actions** menu, select **Complete**.

   The activity status changes to Completed and the next activity or activities change to Ready status. If you complete an activity before or after its schedule completion date, the dates of other activities may change.

Related Topics

Completing an Activity From the Activity Details Tab

Reopening Activities

After an activity has been completed, you can reopen it for additional work. After you reopen the activity, its status is reset to Ready and you must start it again to make changes.

You can reopen a completed activity from the **Activity Details** tab or from the **Activity Summary** page. Reopening activities requires that you have a project manager role and privileges.

Related Topics

Reopening an Activity from the Activity Details Tab

Reopening an Activity from the Activity Summary Page

Reopening an Activity from the Activity Details Tab

If you reopen a completed activity, dependent activities in Ready status revert to Pending status. In-progress activities remain in that status.

To reopen an activity from the **Activity Details** tab:

1. In the **Activity Details** tab of an Engineering Work Order or Business Interaction page, select an activity in Completed status.
2. Click the **Reopen** icon in the toolbar.

The activity status changes to In Progress. Other activities may also change status.

Related Topics

Reopening an Activity from the Activity Summary Page

Reopening an Activity from the Activity Summary Page

If you reopen a completed activity, dependent activities in Ready status revert to Pending status. In-progress activities remain in that status.

To reopen an activity from the Activity Summary page:

1. Navigate to the Activity Summary page of the activity.
2. From the **Actions** menu, select **Reopen**.

   The activity status changes to In Progress. Other activities may also change status.

Related Topics

Reopening an Activity from the Activity Details Tab

Working with Checklists

Checklists can be associated with activities to provide specific steps that must be completed. If a checklist is associated with an activity, it is created when you start the activity.

As you work, you mark checklist items as complete. You do not have to complete the items in order, but they must all be complete before you complete the activity.

The Activity Summary pages of activities with associated checklists include a Checklist section. Activities with checklist include a checklist icon in the Activities list.

When working with checklists, see the following topics:

- Adding Items to a Checklist
- Editing Checklist Items
- Marking Checklist Items as Complete

Adding Items to a Checklist

You can add items to checklist. For example, if the specification for the checklist does not include steps that are necessary for this particular activity, you can add them.

To add an item to a checklist:

1. In the Checklist section of an Activity Summary page, click the **New Item** button.

   A new row appears at the end of the list in the Checklist section.
2. Click in the Item Name column of the new row and enter a name for the item.
3. (Optional) Click in the Comment column of the new row to enter additional information.

Related Topics

Editing Checklist Items

Marking Checklist Items as Complete

Editing Checklist Items

You can edit the name and comments of a checklist item.

To edit a checklist item:

1. In the Checklist section of an Activity Summary page, click in the row of the item you want to edit.
2. Click the **Edit** button.

   The **Edit** button is highlighted and the row becomes editable.
3. Edit the text in the **Item Name** or **Comments** field.
4. Click the **Edit** button.

   The **Edit** button returns to its normal appearance and the row contains your edited text.

Related Topics

Editing Checklist Items

Marking Checklist Items as Complete

Marking Checklist Items as Complete

You mark checklist items as you complete them. When all checklist items are complete, you can complete the activity.

To mark a checklist item as complete:

- In the Checklist section of an Activity Summary page, click the check mark in the Status column of the item you want to complete.

  The check mark turns green to signify that the item is complete.

Related Topics

Completing Activities

Creating Entities and Performing Entity-Specific Tasks in Bulk

Entity bulk operations enable you to create multiple entities and perform various operations on multiple entities at a time, based on the data you provide as input in various tabs in a spreadsheet file. You can create entities and perform entity-specific tasks in bulk using the Automated Bulk Import section in the Activity Summary page.

You can create the following entities by specifying the required information in the spreadsheet file:

- Property location
- Network entity code
- Logical device
- Physical device
- Equipment
- Connectivity

- Network

You can perform the following actions by specifying entity-specific information in the spreadsheet file:

- Associate logical devices, physical devices, and equipment
- Add a shelf in a rack
- Add a card to a slot in a shelf
- Map a physical device to a logical device
- Map a physical device to equipment, and map a physical device to a logical device at the same time
- Map a device interface to a port
- Add connectivities to a network
- Add network nodes
- Add network edges

To create entities and perform entity-specific tasks in bulk:

> **Note:**
>
> You can use the *UIM_Home***/config/inventoryimport.properties** file to define column headers in spreadsheets for importing entities.

1. Create an engineering work order. See "Creating an Engineering Work Order" for more information
2. Assign users to activities. See "Assigning Users to Activities" for more information.
3. In the **Activity Details** tab of an Engineering Work Order page, click a link in the **Name** column of an activity.

   The Activity Summary page appears.
4. In the Automated Bulk Import section, do one of the following:
   a. In the **Field** field, navigate to and select a spreadsheet file that contains the required entity information.
   b. Click **Download Excel Template** to download the sample spreadsheet file in which you can provide the required entity information.
   c. Open the downloaded spreadsheet and update the tabs with data that you want to upload.

   > **Note:**
   >
   > In the respective tab of the downloaded spreadsheet, always fill the **Action** column as **Create**.
   >
   > You can add any number of characteristics to the elements you want to create by adding new characteristic columns in the corresponding spreadsheet tabs.

d. Save and close the spreadsheet.

5. Click **Process**.

   UIM processes the input data you provided in various tabs in the spreadsheet file.

Related Topics

Activity Summary Page

Activity Summary Page

You use the Activity Summary page to define the content and status of an activity that is included in a workflow.

See the following topic for more information about summary pages:

- Actions Menu

> **Note:**
>
> The sections listed in the following table are specific to the Activity Summary page. See "Entity Summary Page" for information about Summary page fields that are common among all entities.

Section	Description
Activity Information	Displays identifying information about the activity along with its status, proposed and actual start and end dates, assigned user, and percentage complete. You can update the percentage complete. See "Updating the Progress of Activities" for more information.
Automated Bulk Import	Enables you to process the entity-specific operations, based on the data you provide in a spreadsheet file. This section has the following options: • **File:** Lets you navigate to and select a spreadsheet file that contains the required information about the entities. • **Download Excel Template:** Click to download the sample excel template. • **Process:** Click to start the entity bulk operation process.
Activity Workspace	Lists resources that are created as part of the activity. Also, enables you to search for telephone number blocks from within activities. See "Associating Resources with Activities" and "Searching for Telephone Number Blocks from within Activities".
Checklist	(Present only for activities with associated checklists.). Displays the items in the checklist. You can add items to the checklist, modify existing checklist items, and mark items as complete. See "Working with Checklists" for more information.

Related Topics

Creating Entities and Performing Entity-Specific Tasks in Bulk

Working with Assigned Activities

Project managers assign users to complete activities. When activities have been assigned to you, you use the My Activities page or the My Group Activities page to view information about your assignments, update their statuses, open activities to work on them, and complete other tasks.

When working with assigned activities, see the following topics:

- Receiving Notification
- Working on Your Assigned Activities
- Viewing Activities Assigned to Your Workgroup
- My Activities Page
- My Group Activities Page

Receiving Notification

If UIM is configured to send notifications, you receive emails when you are assigned an activity and when the activity is ready to work. You may receive additional notifications depending on how UIM is configured.

Notifications include a link that takes you directly to the Activity Summary page of the assigned activity.

Related Topics

Working on Your Assigned Activities

Working on Your Assigned Activities

You can manage the activities assigned to you by using the My Activities page. The page has these sections:

- The Recent Activity Summary section displays a pie chart that shows the distribution of your activities by their statuses (Completed, In Progress, Ready, and Pending). Mousing over a section in the chart displays additional information, including the total duration of the activities in the section.
- The Activity Trends section displays a graph that represents the number of activities assigned to you and the number you have completed.
- The Activities list displays a scrolling list of all activities assigned to you, ordered by their start dates. The list includes detailed information for each activity. You can click an activity name in the list to open its Activity Summary page. From the Activity Summary page, you can record your work on the activity and update your status. See "Managing Activities" for more information.

Related Topics

My Activities Page

Viewing Activities Assigned to Your Workgroup

You can view the activities assigned to you by using the My Group Activities page. The page has these sections:

- The Recent Activity Summary section displays a pie chart that shows the distribution of your group activities by their statuses (Completed, In Progress, Ready, and Pending). Mousing over a section in the chart displays additional information, including the total duration of the activities in the section.
- The Activity Trends section displays a graph that represents the number of activities assigned to your group and the number that have been completed.
- The Activities list displays a scrolling list of all activities assigned to your workgroup, ordered by their start dates. The list includes detailed information for each activity. You can click an activity name in the list to open its Activity Summary page. From the Activity Summary page, you can record your work on the activity and update your status. See "Managing Activities" for more information.

Related Topics

My Group Activities Page

My Activities Page

You use the My Activities page to search and view information about activities assigned to you and to record your progress on completing those activities. The My Activities page has three sections, two of which display read-only information.

Search

You can search for activities assigned to you by entering the search criteria in this section.

Column	Description
Activity Name	The name of the activity. From the Activity Summary page, you can record your work on the activity and update your status. See "Managing Activities" for more information.
Work Order Name	The engineering work order or business interaction to which the activity belongs.
Organization	The organization responsible for completing the engineering work order or business interaction that contains the activity and its parent workflow.
Type	The type of the activity.
Desired Due Date	The due date of the engineering work order or business interaction to which the activity belongs.
Specification	The Task specification on which the activity is based.
Start Date	The date by which the activity is scheduled to start based on the dates of the preceding activities in its workflow.
End Date	The date by which the activity is scheduled to be completed based on its start date and duration.
Duration	The scheduled duration of the activity in days.
Status	The activity's status (Pending, Ready, In Progress, or Completed).

Column	Description
Percent Complete	The percentage complete based on the value of the **Percent Complete** field in the Activity Summary page.
Workflow Template	The workflow template associated with the activity.
Assigned User	The user assigned to the activity.

Recent Activity Summary Section

This section displays a pie chart that shows the distribution of your activities by their statuses (Completed, In Progress, Ready, and Pending). Mousing over a section in the chart displays additional information, including the total duration of the activities in the section.

Activity Trends Section

The Activity Trends section displays a graph that represents the number of activities assigned to you and the number you have completed.

Activities List

The Activity list displays a scrolling list of all activities assigned to you, which includes detailed information about each. You can click an activity name in the list to open its Activity Summary page. From the Activity Summary page, you perform actions such as assigning users, updating progress, and associating resources.

You can select multiple activities and change their status using Start and Complete icons on the top-right corner of the page. Click the Start icon to move all the activities in **Ready** state to **In-Progress**. Click the Complete icon to move all the activities in **In-Progress** state to **Complete**.

Column	Description
Activity Name	The name of the activity, formatted as a link to its Activity Summary page. From the Activity Summary page, you can record your work on the activity and update your status. See "Managing Activities" for more information.
Work Order	The engineering work order or business interaction to which the activity belongs.
Organization	The organization responsible for completing the engineering work order or business interaction that contains the activity and its parent workflow.
Type	Engineering Work Order or Business Interaction.
Desired Due Date	The due date and time of the engineering work order or business interaction to which the activity belongs.
Activity Specification	The Task specification on which the activity is based.
Start Date	The date and time by which the activity is scheduled to start based on the dates of the preceding activities in its workflow.
End Date	The date and time by which the activity is scheduled to be completed based on its start date and duration.
Duration	The scheduled duration of the activity in days.
Status	The activity's status (Pending, Ready, In Progress, Aborted, or Completed).

Column	Description
Percent Complete	The percentage complete based on the value of the **Percent Complete** field in the Activity Summary page.

My Group Activities Page

You use the My Group Activities page to search and view information about activities assigned to members of a work group to which you belong. The My Group Activities page has three sections, two of which display read-only information.

Search

You can search for the work groups that you belong to by entering the search criteria in this section.

Column	Description
Activity Name	The name of the activity. From the Activity Summary page, you can record your work on the activity and update your status. See "Managing Activities" for more information.
Work Order Name	The engineering work order or business interaction to which the activity belongs.
Organization	The organization responsible for completing the engineering work order or business interaction that contains the activity and its parent workflow.
Type	The type of the activity.
Desired Due Date	The due date of the engineering work order or business interaction to which the activity belongs.
Specification	The Task specification on which the activity is based.
Start Date	The date by which the activity is scheduled to start based on the dates of the preceding activities in its workflow.
End Date	The date by which the activity is scheduled to be completed based on its start date and duration.
Duration	The scheduled duration of the activity in days.
Status	The activity's status (Pending, Ready, In Progress, or Completed).
Percent Complete	The percentage complete based on the value of the **Percent Complete** field in the Activity Summary page.
Workflow Template	The workflow template associated with the activity.
Assigned User	The user assigned to the activity.

Recent Activity Summary Section

This section displays a pie chart that shows the distribution of group activities by their statuses (Completed, In Progress, Ready, and Pending). Mousing over a section in the chart displays additional information, including the total duration of the activities in the section.

Activity Trends Section

The Activity Trends section displays a graph that represents the number of activities assigned to your group and the number completed.

Activity List

The Activity list displays a scrolling list of all activities assigned to your group, which includes detailed information about each. You can click an activity name in the list to open its Activity Summary page. From the Activity Summary page, you perform actions such as assigning users, updating progress, and associating resources.

Column	Description
Activity Name	The name of the activity, formatted as a link to its Activity Summary page. From the Activity Summary page, you can record your work on the activity and update your status. See "Managing Activities" for more information.
Work Order	The engineering work order or business interaction to which the activity belongs.
Organization	The organization responsible for completing the engineering work order or business interaction that contains the activity and its parent workflow.
Type	Engineering Work Order or Business Interaction.
Desired Due Date	The due date and time of the engineering work order or business interaction to which the activity belongs.
Activity Specification	The Task specification on which the activity is based.
Start Date	The date and time by which the activity is scheduled to start based on the dates of the preceding activities in its workflow.
End Date	The date and time by which the activity is scheduled to be completed based on its start date and duration.
Duration	The scheduled duration of the activity in days.
Status	The activity's status (Pending, Ready, In Progress, Aborted, or Completed).
Assigned User	The user assigned to the activity.
Percent Complete	The percentage complete is based on the **Percent Complete** field in the Activity Summary page.

Activities - Bulk Edit Page

You use the Activities - Bulk Edit page to edit the characteristics of one or more activity entities with the same specification. The **Bulk Edit** option appears only if you select one or more activity entities from the search results.

To enable the **Bulk Edit** option, you must do the following:

1. Navigate to the My Activities or My Group Activities page.
2. Select a specification in the search criteria.
3. In the Search Results section, select one or more entities.
4. Click **Bulk Edit**.

   The Activity - Bulk Edit page appears.

To bulk edit the characteristics of My Activities or My Group Activities:

1. In the Activity - Bulk Edit page, click **Add Fields** to select the characteristics fields to display.

The Add Fields page appears.

2. Use the arrow buttons to move fields from the **Available Fields** column to the **Selected Fields** column to select the fields to display and edit. You can also move fields from the **Selected Fields** column back to the **Available Fields** column.

> **Note:**
>
> If there are no characteristics for the selected specification, the page columns appear empty. In this case, you need to add characteristics to the specification. See *UIM Concepts* for information on characteristics.

3. Click **OK**.

   The selected characteristics appear in the bulk edit page.

4. Enter values in the relevant fields for the characteristics.

5. Click **Save And Close**.

   The following confirmation message is displayed:

```
You are about to update all the selected entities of specification
specificationName. The following characteristics values will be updated.
characteristic1
characteristic2
.
.
characteristicN
Do you want to proceed?
```

> **Note:**
>
> The confirmation message displays the selected characteristic values along with their updated values. For characteristics with no values, `null` is displayed.

6. Click **Yes**.

   The characteristics with updated values are added to all selected entities.

7

Working with Services and Service Configurations

Service entities and their service configurations represent how resources in your inventory are used to deliver products to customers.

- Service entities store the basic information that is unlikely to change, such as the service name and description.
- Service configurations capture the details about the resources used by the service. As the facts about a service change over time, new versions of the service configuration can be created.

Service entities share many of the same features as other entities. You can control the service life cycle, associate parties and places, and validate the service's content. See "Managing Entity Life Cycles", "Adding the First Version of a Configuration to an Entity", "Associating Places to Entities", and "Validating Entities and Entity Configurations" for more information. You can also assign conditions to services and reserve them.

UIM includes specialized functionality for network-oriented services that support packet connectivity. For example, UIM supports Carrier Ethernet services. See About Network-Oriented Services for more information.

See the following topics for more information about working with service entities and service configurations:

- About Service Configurations
- About Service and Service Configuration Topology
- Viewing the Service or Service Configuration Topology
- About Network-Oriented Services

About Service Configurations

You can create configurations for Service entities. Using configurations enables you to create new versions as a service evolves over time.

Service configurations have the same features and functionality as other configurations. You can assign or reference resources and maintain characteristics. If auto-assignment rulesets have been defined for the service, you can automatically assign or reference required resources.

In some cases, service configurations can be created automatically. You can configure UIM so that when there is only a single Service Configuration specification associated with a Service specification, a configuration version is created automatically when you create a service. See *UIM Concepts* and *UIM System Administration Guide* for more information.

Unlike other types of configurations, service configurations include a topology diagram. Also, unlike other types of configurations, non-network services can have multiple pending configurations. See *UIM Concepts* for more information.

See the following topics for more information about working with service configurations:

- About Service and Service Configuration Topology
- Viewing the Service or Service Configuration Topology
- Working with Entity Configurations
- Working with Multiple Pending Configurations

About Service and Service Configuration Topology

You can view the topology of a service or a service configuration using the UTIA application. See "Working with the Inventory Topology" for more information.

> **Note:**
>
> Network-oriented services do not use the service topology feature. Because network-oriented services are always associate with a service network, you view the topology of the network instead. See "About Network-Oriented Services" for more information.

If you view the topology of the service, it reflects the current configuration. If you view the topology of a specific configuration, it reflects the content of that configuration.

The topology is displayed graphically, with icons representing resources assigned to configuration items. The following resources are shown in the Topology page by default:

- Custom object
- Equipment
- Logical device
- Network
- Physical device
- Place (site or location only)

Physical ports and connectors in the service are represented by an icon for the equipment or physical device in which they are located. Device interfaces are represented by an icon for their parent logical devices. Pipes are represented by lines that connect resources.

> **Note:**
>
> In most cases, the topology diagram shows only resources that are included in the current service or service configuration. If one of the resources is the termination point of a pipe, however, the other termination point is also shown even if it is not part of the service or service configuration.

The topology diagram includes a canvas area where the diagram is displayed. The page has a number of tools that enable you to control the topological display, including a toolbar, an overview section, and an information section. See "Working with the Inventory Topology" for more information.

Related Topics

About Service Configurations

Viewing the Service or Service Configuration Topology

Viewing the Service or Service Configuration Topology

You can view service and service configuration topologies to identify the resources assigned or referenced to configuration items. You can view the service and service configuration topologies using the UTIA application.

To view the service or service configuration topology:

1. Open a Service Summary or Service Configuration Summary page.
2. Click **Topology**. (This command is visible only for services with the **Network Oriented Service Type** set to **None**.)

   The UTIA application displays the corresponding topology diagram. The topology canvas displays icons for assigned resources. If no resources have been assigned, the display is blank. See "Working with the Inventory Topology" for more information.

Related Topics

About Service Configurations

About Service and Service Configuration Topology

Viewing Service and Service Configuration Information in Map View

You can view service and service configuration design in a map using the UTIA application.

See "Working with the Inventory Topology" for more information.

About Network-Oriented Services

UIM supports network-oriented services that include multipoint and point-to-point connectivity. For example, the Carrier Ethernet cartridge includes specifications for E-Line, E-LAN, and E-Tree services. Each of these Service specifications is accompanied by a matching Service Configuration specification.

> **Note:**
>
> Network service configurations have a different life cycle from those of other service configurations. They do not have to be complete before the creation of a new configuration.

Multipoint and rooted multipoint service arrangements, such as E-Tree services, comprise a parent or *network service* along with two or more member services. There is a separate member service for each service location. A *service network*, which specifies the devices and connectivities that fulfill the service, provides a unified view of the arrangement. This service network is automatically created when you create the service.

Point-to-point service arrangements do not require separate network and member services. A single service, such as an E-Line service, represents the entire arrangement. The service configuration includes items for service locations and other required resources.

See Configuring Network-Oriented Services for information about how you assign and reference the resources required for network-oriented services.

Configuring Network-Oriented Services

You specify the resources required for a network service by assigning and referencing them as configuration items in the service configuration. See "Working with Entity Configurations" for information about working with configurations in general.

UIM automates some configuration operations for network-oriented services under certain circumstances. This automation relies on the definition of specifications as Network Services and Member Services in Design Studio.

- When you create an entity based on a Service specification that has been defined as a network service, UIM automatically creates a service network and assigns it to the Service configuration.
- When you assign a member service to the service configuration, UIM automatically populates the service network configuration and topology with data from the member service. This information, including the service location and the PVN, is gathered from the Service connectivity. If no connectivity has been assigned, then the data is not added to the network configuration and topology. When the connectivity is assigned, however, the data is added automatically.
- The service network assigned to the network service is updated automatically as you make configuration changes. For example, if you make a change to a member service assigned to the network service, that change is automatically reflected in the service network.

Service - New Page

You use the Service - New page to create new services.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Select a specification to use to define the new service.
Name	Enter the name of the new service.
ID	This field displays **AUTOGENERATE** and is read only. By default, most entity specifications are defined in Design Studio so that IDs are generated automatically.
Description	(Optional) Enter a description of the new service.

Related Topics

Service Summary Page

Creating Entities

Searching for Entities

Service - Information Page

You use the Service - Information page to edit the information that appears in the Summary page Information section. Some data elements, such as the ID, cannot be changed after the entity is created.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Displays the specification used to define the service. This field is read only.
Name	Edit the name of the new service.
ID	Displays the ID generated for the entity. This field is read only.
Description	Edit the description of the service.
Network Oriented Service Type	Displays the network oriented service type defined in the specification of this entity: • **None**. (Default) This is not a network-oriented service or is a point-to-point network service. • **Network**. This is the parent service in a network-oriented service arrangement. For example, in an E-LAN service arrangement, a service of this type represents the network as a whole. • **Member**. This is a member service in a network-oriented service arrangement. A separate member service is created for each service location in the arrangement. All member services have a Network service parent and appear as configuration items in the parent Service configuration.
Arrangement	(Visible only in data cooperation scenarios.) The cooperation model for the entity as defined by the parties or systems exchanging entity data.
Entity Name	(Visible only in data cooperation scenarios.) The name of the entity in the context specified in the **Other System** field.
Entity ID	(Visible only in data cooperation scenarios.) The identifier of the entity. This identifier is unique in the context specified in the **Other System** field.
Other System	(Visible only in data cooperation scenarios.) The external system or domain that is participating in the data cooperation.

Related Topics

Service Summary Page

Creating Entities

Searching for Entities

Service Summary Page

You use the Service Summary page to define the content for a service.

See the following topics for more information about summary pages:

- Related Pages Menu
- Actions Menu

> **Note:**
>
> The sections listed in the following table are specific to the Service Summary page. See "Entity Summary Page" for information about Summary page fields that are common among all entities.

Section	Description
Information	Displays basic information about the entity, most of which was defined when you created the entity. Click **Edit** to change this information. See "Service - New Page" and "Creating Entities " for more information.
Configurations	Displays the configurations defined for the Service entity. You can define configurations to version implementation details. For example, when you add a new VPN site to an MPLS VPN service, you can create a new version of the service configuration to reflect the change. The fields that appear in the Configurations section are common among multiple entities. See "Entity Summary Page" for more information. See "Adding the First Version of a Configuration to an Entity" and "Adding Additional Configuration Versions" for information about creating configurations.
Parties	Displays any parties that are associated with the Service entity. You can associate parties to services to identify related individuals or organizations. If the parties have roles assigned to them, you can specify the role that is relevant to the association. The fields that appear in the Parties section are common among multiple entities. See "Entity Summary Page" for more information. See "Associating Parties to Entities" and "Deleting Party Associations from Entities" for information about managing party associations.
Places	Displays any places that are associated to the service. The association can imply that the service is completed at the place or that there is some kind of relationship between the entities. The fields that appear in the Places section are common among multiple entities. See "Entity Summary Page" for more information. See "Associating Places to Entities" for information about creating new place associations.
Topology	Click to view the topology diagram using the UTIA application. See "Working with the Inventory Topology"

Service Configuration Information - New Version Page

You use the Service Configuration Information - New Version page to create new service configurations.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Select a Service Configuration specification to use for the new configuration version. See *UIM Concepts* for more information about configuration specifications.
ID	Enter a unique ID for the configuration or accept the default. The default value is based on the ID of the parent service with an incremented version number.
Name	Enter a name for the configuration or accept the default. The default value is based on the name of the parent service with an incremented version number.
Previous Configuration	Displays the version number of the previous configuration, if any. If you are creating the first configuration version, this value is **0**.
Version	Displays the sequential version number of the configuration you are creating.
Start Date	Enter the date and time at which the configuration will become active. If this Service Configuration is in the context of a business interaction, then the start date field is populated from the effective date value in the associated business interaction. **Note**: You can create multiple configurations on the same day with different timestamp values.

Related Topics

About Service Configurations

Working with Entity Configurations

Working with Multiple Pending Configurations

Service Configuration Page

You use the Service Configuration page to define the content for a service configuration.

See the following topics for more information about tasks you can complete in Service Configuration pages:

- Related Pages Menu
- Actions Menu

> **Note:**
>
> The sections listed in the following table are specific to the Service Configuration page. See "Entity Summary Page" for information about features that are common among all entities.

Section	Description
Information	Displays basic information about the configuration, most of which was defined when you created the entity. Click **Edit** to change this information. Some data elements, such as the ID, cannot be changed after the configuration is created. The **Edit** button is available only until the configuration is completed or canceled.
Configuration Items	Displays configuration items associated with the configuration. See "Adding Configuration Items " for information about adding new configuration items.
Business Interactions	Lists the business interactions that include the service configuration. See "Working with Business Interactions" for more information.
Topology	Click to view the topology diagram using the UTIA application. See "Working with the Inventory Topology"

Related Topics

Viewing the Service or Service Configuration Topology

Service Configuration Information Page

You use the Service Configuration Information page to modify a service configuration. This page is available only before the configuration is completed.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Displays the name of the specification used to create the configuration. See *UIM Concepts* for more information about configuration specifications.
ID	Modify the ID for the configuration. The default value is based on the ID of the parent service with an incremented version number.
Name	Modify the name of the configuration. The default value is the same as the ID.
Previous Configuration	Displays the version number of the previous configuration, if any. If you are creating the first configuration version, this value is **0**.
Version	Displays the sequential version number of the configuration you are creating.

Field	Description
Start Date	Modify the date and time at which the configuration will become active. If the configuration is associated to a business interaction then the start date must be the same date and time as the effective date on the business interaction. If you change the effective date and time the change is reflected automatically in the start date.

Related Topics

About Service Configurations

Working with Entity Configurations

Working with Multiple Pending Configurations

8

Working with Parties

Party entities represent the people and organizations that interact with your inventory. For example, you could have Party entities for individuals such as contacts, employees, subscribers, and decision makers. You could also have Party entities for vendors, resellers, service providers, and customers.

You can associate parties to different types of entities, including products, services, network nodes, places, and pipe termination points. The method you use to make the associations varies by to entity type.

An association with a party is often qualified with a role. You can select the roles that are valid for a party in its Summary page. Additionally, you can associate places with parties (for example, to specify the location of a business or location), and parties can be included in inventory groups.

See the following topics for more information about working with parties:

- Associating Parties to Entities
- Deleting Party Associations from Entities
- Deleting Roles from a Party
- Selecting Roles for Parties
- Party - New Page
- Party - Information Page
- Party Summary Page

Associating Parties to Entities

You can associate parties to entities to identify related individuals or organizations. If the parties have roles assigned to them, you can specify the role that is relevant to the association.

To associate a party to an entity:

1. Open the Summary page for an entity.
2. Click the **Groups and Infrastructure** tab.
3. In the Parties section/subtab, click **Associate**.

   The Associate Party dialog box appears.
4. Search for or create a Party entity.
5. In the Search Results section, select the party that you want to associate with the entity.
6. Click **OK**.

   The Parties section/subtab in the Summary page refreshes to include the entity.
7. (Optional) In the **Party Role** list, select a role.

   The list is empty if no roles are assigned to the party. For Service entities, you can create a new role if necessary.

Related Topics

Deleting Party Associations from Entities

Creating a Role While Associating a Party to a Service

Deleting Party Associations from Entities

To delete party associations from an entity:

1. Open the Summary page of the entity associated with the party that you want to delete.
2. Click the **Groups and Infrastructure** tab.
3. In the Parties section/subtab, select the party you want to delete.
4. Click **Delete**.

   The selected party is removed from the list.

Related Topics

Associating Parties to Entities

Selecting Roles for Parties

You can select the roles that can be used to qualify an entity's association with a particular Party entity. For example, if you have a Party entity for a company, you could limit its possible roles to Supplier, Customer, and Partner.

> **Note:**
>
> Role specifications define the entity types to which the role can be applied. The list of roles from which you select includes only the roles that can be applied to Party entities.

To select roles for a party:

1. Open the Summary page of the Party entity for which you want to select roles.
2. Click the **Groups and Infrastructure** tab.
3. In the Roles section, click **Associate**.

   The Party Role Information dialog box appears.
4. From the **Specification** list, select the specification of the role you want to include.

   If characteristics have been added to the specification for the role you selected, additional fields appear in the page.
5. If any additional fields appear, enter the required information.
6. (Optional) To add additional roles, click **Save and Add Another**
7. Click **Save and Close**.

   The role appears in the Roles section for the party.

Related Topics

Deleting Roles from a Party

Working with Roles

Deleting Roles from a Party

To delete roles from a party:

1. Open the Summary page of the Party entity from which you want to delete roles.
2. Click the **Groups and Infrastructure** tab.
3. In the Roles section, select a role and click **Delete**.

   The role is deleted from the list.

Related Topics

Selecting Roles for Parties

Working with Roles

Party - New Page

You use the Party - New page to create new Party entities.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Select a Party specification. You can represent your parties in UIM without creating specifications in Design Studio; however, using specifications allows you to capture custom information about a party. If you do not use a specification to define the new party, you must manually enter a value in the **ID** field.
ID	If the entity specification requires a manually entered ID, enter a unique ID for the entity. Most entity specifications are defined in Design Studio so that IDs are generated automatically. The **ID** field for these specifications contains the text AUTOGENERATE.
Name	Enter a name for the party.
Description	Enter a description of the party.

Related Topics

Creating Entities

Party Summary Page

Party - Information Page

You use the Party - Information page to edit the information that appears in the Summary page Information section. Some data elements, such as the ID, cannot be changed after the entity is created.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Displays the specification used to define the party. This field is read only.
ID	Displays the ID generated or entered when the entity was created. This field is read only.
Name	Edit the name for the party.
Description	Edit the description of the party.

Related Topics

Creating Entities

Party Summary Page

Party Summary Page

You use the Party Summary page to define the content for a Party entity. The page is arranged into tabs, each of which is used for a different purpose:

- General Information Tab
- Associated Resources Tab
- Groups and Infrastructure Tab

See "Entity Summary Page" for information about Summary page fields that are common among all entities.

Related Topics

Creating Entities

Party - New Page

General Information Tab

You use the **General Information** tab to view basic information about the entity, most of which was defined when you created the entity. Click **Edit** to change this information. Some data

elements, such as the ID, cannot be changed after the entity is created. See "Creating Entities ", "Party - New Page", and "Party - Information Page" for more information.

Associated Resources Tab

You use the **Associated Resources** tab to view any network nodes with which a Party entity is associated. The association occurs when you select a Party entity to be represented by a node or element in a network.

The same entity can be represented by nodes in different networks. For each network association, you can see the network name, network description, node name, and node description. Click the ID to view the Network Summary page.

Groups and Infrastructure Tab

You use the **Groups and Infrastructure** tab to view information about the places, inventory groups, and roles associated with the party.

Section	Description
Places	Displays any places that are associated with the party. The association can imply that the party is located at the place or that there is some kind of relationship between the entities. The fields that appear in the Places section are common among multiple entities. See "Entity Summary Page" for more information. See "Associating Places to Entities" for information about creating new place associations.
Inventory Groups	Displays any inventory groups to which the party is associated. You use inventory groups to organize entities for a particular purpose. The fields that appear in the Inventory Group section are common among multiple entities. See "Entity Summary Page" for more information. See "Adding an Entity to an Inventory Group from the Entity Summary Page " for information about associating entities with an inventory group.
Roles	Displays any roles that are associated with the Party entity. You can associate roles with entities to define the functions they perform in your inventory. An entity can have multiple roles simultaneously, and its roles can change over time. See "Assigning a Role in an Entity Summary Page" for more information.

9

Working with Equipment and Devices

In Oracle Communications Unified Inventory Management (UIM), you use three different groups of entity types to represent logical and physical equipment and devices in your inventory:

- Equipment entities represent physical units of hardware. Their hierarchies can include other Equipment entities as well as equipment holders, physical ports, and physical connectors.
- Physical Device entities group physical resources. Physical devices can provide physical ports and connectors. Their hierarchies can contain other physical devices as well as equipment.
- Logical Device, Device Interface, and Logical Device Account entities represent logical inventory in the network. Logical devices and logical device accounts can have configurations. Logical devices can include device interfaces.

These different types of entities can have associations that represent their relationships in the network. You can associate a physical device to a logical device. This association enables the more granular mapping of ports and connectors provided by the physical device (including equipment and physical devices in its hierarchy) to the device interfaces of the associated logical device. Equipment in a physical device hierarchy is indirectly associated to a logical device associated with the parent physical device.

See the following topics for more information about working with equipment and devices:

- Working with Equipment
- Working with Logical Device Entities and Logical Device Configurations
- Working with Logical Device Accounts
- Working with Physical Devices
- Mapping Device Interfaces to Physical Ports and Connectors

Working with Equipment

Equipment entities represent physical units of hardware such as cards, racks, and shelves. Equipment can provide slots (represented by Equipment Holder entities) that hold cards. Cards can occupy a single slot or multiple slots depending on how they are defined.

Equipment entities can include a hierarchy of other equipment, equipment holders (slots), physical ports, and physical connectors.

Equipment entities share many of the same features as other entities. They are topology-enabled, so you can search for them in the topology diagram using the UTIA application. See "Working with the Inventory Topology" for more information. You can include them in inventory groups, custom involvements, reservations, and business interactions. You can also apply conditions to them, associate them with places, and manage their life cycles.

Because you might require many entities of the same type of equipment, you can create multiple Equipment entities simultaneously.

See the following topics for more information about working with equipment and equipment visualizations:

- Creating an Equipment Range
- About Equipment Hierarchies
- Associating Equipment to Physical Devices
- Deleting Physical Device Associations from Equipment Entities
- Viewing Network Associations

Creating an Equipment Range

In a single operation, you can create a range of Equipment entities based on the same Equipment specification. For example, you could simultaneously create a number of interface cards based on the same specification.

When you create a range of Equipment entities that automatically generate IDs, you specify only the quantity of entities to create. If the Equipment specification requires manual entry of IDs, you must specify both a starting ID and a quantity.

To create a range of Equipment entities:

1. In the **Inventory - Resources** group of the navigation section, click **Equipment**.

   The Equipment Search page appears.
2. In the Search Results section, click **Create Range**.

   The Equipment Range - New page appears.
3. In the **Specification** list, select the Equipment specification you want to use for the entities you create.

   The page refreshes to reflect the characteristics in the selected specification.
4. In the **Starting ID** field, enter the first ID to use for the entities. This is required only if the Equipment specification does not include ID autogeneration.

   The ID must be numeric so that it can be incremented.
5. In the **Quantity** field, enter the number of entities to create.
6. Click **Save and Close**.

   The Equipment page reappears, listing the newly created entities in a search results table.

Related Topics

Working with Equipment

About Equipment Hierarchies

Like other entity types, Equipment entities can include a hierarchy. The way you work with an equipment hierarchy is different from the way you work with other types of hierarchies, however.

You use the Equipment View page to view and manage the hierarchy. This page includes a tree view and a visualization of the equipment. See "Equipment View Page" for information about this page.

An equipment hierarchy can include:

- Other equipment, such as a shelf in a rack
- Equipment holders (or slots) that contain cards, such as interface cards
- Physical ports, which are the places where communication begins or ends
- Physical connectors, which are used to physically connect hardware for signal or power transmission
- Parent equipment to which the selected equipment is associated

Equipment holders, physical ports, and physical connectors are defined by specifications, but you cannot work with them independently. You can work with them only in the context of Equipment entities. (Physical ports and connectors can also be provided by physical devices.)

Specifications for Equipment entities can require that equipment holders, physical ports, and physical connectors be created automatically when you create the equipment. Equipment holders can be added *only* automatically during the creation of an Equipment entity, but you can add ports and connectors manually. See "Adding Physical Ports and Connectors in an Equipment Hierarchy" for instructions.

You can also manually add equipment in an equipment hierarchy; for example, by adding cards to slots or shelves to racks. See "Adding Equipment to an Equipment Hierarchy" and "Adding New Equipment to an Equipment Hierarchy" for more information.

Opening the Equipment View Page

There are two ways to open the Equipment View page. One is from the Summary page of an Equipment entity. The other is from search results. If you open the Equipment View page from search results, it can include more than one Equipment entity.

When you open the Equipment View page, a visualization of the equipment is displayed automatically in the middle column.

To open the Equipment View page from a Summary page:

1. Open the Summary page of an Equipment entity.
2. Click the **Tree View** tab.

   In the Equipment View page, the tree view is in the left section. The right section can contain an equipment visualization.

To open the Equipment tree view from a search results:

1. Search for Equipment entities.

   See "Searching for Entities" for more information.
2. In the Search Results section, select an Equipment entity.
3. From the **Actions** menu, select **Tree View**.

   The **Tree View** tab opens, displaying the Equipment View page. The tree view is in the left section. It contains top-level entries for the Equipment entities that you selected.

Related Topics

About Equipment Visualizations

Equipment View Page

Working with Equipment Hierarchy

On the **Tree View** tab of an Equipment Summary page, the Equipment View page displays an equipment hierarchy as a collapsible table. The top-level Equipment entity is labeled with its specification name followed by its ID; child entities are labeled with their slot numbers followed by their IDs. If a slot has been assigned a value for the Native EMS Name data element, it is displayed in parentheses after the slot number.

The tree view and the visualization are synchronized. Selections you make in the tree view are reflected in the visualization. The reverse is also true. See "Selecting Entities in the Equipment View Page" for more information.

In most cases, you can perform tasks in either the tree view or the visualization (or a combination of the two). There are several tasks you can perform in only the tree view. See "Removing and Deleting Child Entities from an Equipment Hierarchy" for more information.

Related Topics

Opening the Equipment View Page

Working with Equipment

Equipment View Page

Selecting Entities in the Equipment View Page

To select entities in the Equipment View page:

1. On the **Tree View** tab, in an Equipment View page, click the arrow icons next to child entities to expand the hierarchy and display the entity you want to select.
2. Click an entity to select that entity.

   The entity is highlighted and the entity is surrounded by a red rectangle in the visualization.

The legend at the top of the visualization shows different states of ports, slots, sub-cards, etc, with their corresponding colors used to represent them in the visualization. This can be customized according to your requirements by using the properties present in the *visualization.properties* file. For more information on using these properties, see "Customizing Visualization for Equipment View" in *UIM System Administrator's Guide.*

The name of the entity is displayed in the visualization as a label. You can refer to the information icon at the bottom of the visualization that details the information about the entity itself.

Related Topics

Working with Equipment Hierarchy

Equipment Summary Page

Equipment View Page

About Equipment Visualizations

You can use a visualization of an Equipment entity to see and modify its composition. The content of the visualization is defined by the specification used to create the entity and by the type of entity. For example, the visualization for a card is different from the visualization of a

rack, sub-card, holder or sub-holder. The visualization of a shelf with 8 slots is different from one with 12 slots.

> **Note:**
>
> If an entity is based on a specification that does not have a visualization defined, the equipment visualization feature is not available.

The visualization is displayed on a canvas that includes a number of tools that enable you to control the view. Many of these tools are common to other graphically based features in UIM. See "Working with Visualizations and Diagrams" for information about these tools.

You can view additional information about the entity selected in the visualization such as occupied slots, free slots, consumed ports, free ports and so on, in the table that appears next to the visualization.

Related Topics

Clearing an Equipment Visualization

Moving Shelves in an Equipment Visualization

Opening an Equipment Visualization

You can open the visualization of an equipment from the Equipment View Page.

To view the visualization of any equipment:

1. Select the desired equipment from the tree view on the left.
2. From the **Actions** menu, select **Open Visual**.

   The visualization of the desired equipment will appear.

For any card or sub-card selected on the visualization canvas, you can view its visualization by right-clicking on it and selecting the **Open Visual** from the menu that appears. This will open the visualization of only the card and sub-card.

Clearing an Equipment Visualization

You can clear the contents of an equipment visualization. When you reopen the visualization after clearing, it displays items in their last-saved positions.

To clear an equipment visualization:

- Open an Equipment View page.

  See "Opening the Equipment View Page" for more information.
- In the toolbar, click **Clear Visual**.

  The visualization canvas is cleared.

Related Topics

Moving Shelves in an Equipment Visualization

Moving Shelves in an Equipment Visualization

You can move equipment of the type Shelf from one position in an Equipment visualization to another.

To move a shelf in a visualization:

1. Open an Equipment View page.

   See "Opening the Equipment View Page" for more information.
2. Select a shelf in a visualization.
3. Drag the shelf to a new location.

Related Topics

Clearing an Equipment Visualization

Adding Equipment to an Equipment Hierarchy

You can add existing equipment to an equipment hierarchy. For example, you can add a card that you created previously to a slot in a shelf. You can also add an existing shelf to a rack.

To add existing equipment to an equipment hierarchy:

1. Open the Equipment View page for the equipment.

   See "Equipment View Page" for more information about the fields in this page.
2. Expand the hierarchy in the tree view to display the location where you are adding the equipment.

   For example, to add a card, display the empty slot that will hold it.
3. Select the holder, then select **Add** from the **Actions** menu.

   The Search page appears.
4. Search for or create an Equipment entity.
5. In the Search Results section, select the equipment you want to add and click **OK**.

   The equipment is added and appears in both the tree view and the visualization. If you add a card that occupies multiple slots, cards appear in all the required slots. In the tree view, the first slot displays the card name; other required slots display the word **Occupied**. UIM prevents you from adding a multi-slot card if not enough contiguous slots are available.

Related Topics

Adding New Equipment to an Equipment Hierarchy

Adding New Equipment to an Equipment Hierarchy

You can add new equipment to an equipment hierarchy. For example, you add a new card to an empty slot or a new shelf to a rack. You can use either the tree view or the visualization to add the new equipment. The following procedure demonstrates the task using the tree view.

To add new equipment to an equipment hierarchy:

1. Open the Equipment View page for the Equipment entity to whose hierarchy you are adding.

See "Opening the Equipment View Page" for more information.

2. Expand the hierarchy to display the location where you are adding the new equipment.

   For example, to add a card, display the empty slot that will hold it.

3. Select the holder, then select **Create** from the **Actions** menu.

   The Equipment - New dialog box appears.

4. Select the specification for the new equipment and enter any relevant optional information.

5. Click **Save and Close**.

   The dialog box closes and the new equipment appears in both the tree view and the visualization. If you add a card that occupies multiple slots, cards appear in all the required slots. In the tree view, the first slot displays the card name; other required slots display the word **Occupied**. UIM prevents you from adding a multi-slot card if not enough contiguous slots are available.

Related Topics

Adding Equipment to an Equipment Hierarchy

Adding Physical Ports and Connectors in an Equipment Hierarchy

You can add physical ports and connectors to an equipment hierarchy.

- A physical port is where communication begins or ends on a physical device or unit of equipment.
- A physical connector links or connects hardware units for the transmission of signals or power.

You can add physical ports and connectors only if the Equipment specification is related to port or connector specifications. In some cases, this relationship requires a minimum number of ports or connectors. The minimum number is added automatically when you create an Equipment entity based on that specification. You can add additional ports and connectors up to the maximum prescribed by the relationship. Typically, the minimum and maximum values are the same because the number of ports and connectors provided by a particular type of equipment does not vary.

Physical ports and connectors are themselves defined by specifications, but you can work with them only in the context of an Equipment or Physical Device hierarchy. You can add only new physical ports and connectors. You cannot add existing ports and connectors because there is no way to create them independently.

You can add physical jumpers to connect ports in the same Equipment entity or in different entities that share the same location.

To add physical ports and connectors to an equipment hierarchy:

1. Open an Equipment View page.

   See "Opening the Equipment View Page" for more information.

2. Expand the hierarchy to display the Equipment entity to which you are adding ports or connectors.

3. Select the entity, then select **Create Port** or **Create Connector** from the **Actions** menu.

   The Physical Port - New dialog box or Physical Connector - New dialog box appears.

4. Enter a quantity.

You can add only the number of ports or connectors allowed by the relationship between the Equipment specification and the Port or Connector specification. If you attempt to create more, you will see an error message when you save and close the dialog box.

5. Enter any other required or optional information.
6. Click **Save and Close**.

   The dialog box closes and the new ports or connectors appear in the tree view.

Related Topics

Working with Equipment

Adding Physical Jumpers Between Ports

Adding Physical Jumpers Between Device Interfaces

Moving Equipment within an Equipment Hierarchy

You can move equipment within an equipment hierarchy. For example, you can move a card from one slot to any empty slot. You can also move between different subhierarchies. If there are two racks with hierarchies in the tree view, for example, you could move a shelf from one rack to the other.

To move equipment within an equipment hierarchy:

1. Open an Equipment View page.

   See "Opening the Equipment View Page" for more information.
2. Expand the hierarchy to display the equipment that you want to move.
3. Select the equipment, then select **Move** from the **Actions** menu.
4. Select the destination, then select **Move To** from the **Actions** menu.

   The tree view and visualization display the equipment in its new location.

Related Topics

Copying Equipment in an Equipment Hierarchy

Working with Equipment

Copying Equipment in an Equipment Hierarchy

You can copy and paste equipment in equipment hierarchies. For example, you can copy a shelf, including any slots and cards it contains, and paste it to another location in a rack. You can also copy and paste between different subhierarchies. If there are two racks with hierarchies in the tree view, you could copy a shelf from one rack and paste it in the other.

UIM creates all the new entities required, copies the characteristics of the originals, and changes the IDs. The copy process does not copy associations such as those to places and inventory groups, however.

To copy equipment in an equipment hierarchy:

1. Open an Equipment View page.

   See "Opening the Equipment View Page" for more information.
2. Expand the hierarchy to display the equipment that you want to copy.

3. Select the equipment, then select **Copy** from the **Actions** menu.
4. Select the destination, then select **Paste** from the **Actions** menu.

   The tree view and visualization display the copied equipment in the new location. You can edit identifying information if necessary, but you cannot change the IDs.

Related Topics

Moving Equipment within an Equipment Hierarchy

Working with Equipment

Removing and Deleting Child Entities from an Equipment Hierarchy

You can remove or delete child entities from an equipment hierarchy.

Some kinds of relationships can be deleted only from the tree view.

- Shelf to port or connector
- Card to port or connector
- Equipment rack to equipment shelf
- Equipment holder to equipment card

To remove or delete a child entity from an equipment hierarchy:

1. Open an Equipment View page.

   See "Opening the Equipment View Page" for more information.
2. Expand the hierarchy to display the child entity you want to remove or delete.
3. Select the child entity, then select **Remove** or **Delete** from the **Actions** menu.

   The child entity, including any of its own children, is removed. If you selected **Delete**, the child entity is also deleted from the inventory.

Related Topics

Working with Equipment

Editing Entity Information in an Equipment Hierarchy

You can edit the name, description, and characteristic values of entities in an equipment hierarchy. You cannot change an entity's specification or ID.

To edit entity information in an equipment hierarchy:

1. Open an Equipment View page.

   See "Opening the Equipment View Page" for more information.
2. Expand the hierarchy to display the entity you want to edit.
3. Select the entity, then select **Edit** from the **Actions** menu.

   The Equipment Information dialog box appears.
4. Make any necessary changes and click **Save and Close**.

Related Topics

Working with Equipment

Refreshing Entities in an Equipment Hierarchy

You can refresh entities in an equipment hierarchy to ensure that the latest information is displayed.

To refresh an entity in an equipment hierarchy:

1. Open an Equipment View page.

   See "Opening the Equipment View Page" for more information.
2. Expand the hierarchy to display the entity you want to refresh.
3. Select the entity, then select **Refresh** rom the **Actions** menu.

   The tree view and visualization display the latest information about the entity.

Related Topics

Working with Equipment

Associating Equipment to Network Locations

You can associate Equipment entities to network locations to specify their locations.

You can associate network locations manually when you create an Equipment entity or by editing an existing entity. Associations can also be made automatically by propagation through logical device, physical device, and equipment hierarchies. You cannot manually associate a network location to an Equipment entity that has already been assigned one by propagation. See *UIM Concepts* for more information about the rules that govern these propagations.

To associate an Equipment entity to a network location:

1. Open the Equipment Summary page of an Equipment entity.
2. On the **General Information** tab, in the Equipment Information section, click **Edit**.
3. In the **Network Location** field, enter the first few characters of a network location, then select the location you want to associate.

   The location appears in the **Network Location** field.

Related Topics

Adding Network Entity Codes to Network Locations

Associating Logical Devices to Network Locations and Network Entity Locations

Associating Physical Devices to Network Locations

Associating Equipment to Physical Devices

You can associate an Equipment entity to a Physical Device entity to indicate that the physical device includes the equipment. The physical device can in turn be associated to a logical device.

An Equipment entity can be associated with only one physical device, but a physical device can be associated with any number of Equipment entities.

To associate an Equipment entity to a physical device:

1. Open the Summary page of the Equipment entity to which you want to associate a physical device.
2. Click the **Associated Resources** tab.
3. In the Physical Devices section, click **Associate**.

   The Associate Physical Devices dialog box appears.
4. Search for or create a physical device.
5. In the Search Results section, select a Physical Device entity.
6. Click **OK**.

   The dialog box closes and the Physical Devices section in the Summary page refreshes to include the entity.

Related Topics

Deleting Physical Device Associations from Equipment Entities

Working with Physical Devices

Working with Equipment

Deleting Physical Device Associations from Equipment Entities

You can delete the physical device association from an Equipment entity. You can associate a different physical device only after the first association is deleted.

To delete a physical device association:

1. Open the Summary page of the Equipment entity from which you want to remove a physical device association.
2. Click the **Associated Resources** tab.
3. In the Physical Devices section, select the physical device to delete and click **Delete**.

   The physical device is removed from the list.

Related Topics

Working with Physical Devices

Working with Equipment

Associating Equipment to Physical Devices

Viewing Network Associations

You can view the networks with which an Equipment entity is associated. The association occurs when you select an Equipment entity to be represented by a node in the network.

The same Equipment entity can be represented by nodes in different networks. For each network association, you can see the network name, network description, node name, and node description.

To view Equipment entity network associations:

1. Open the Summary page of the Equipment entity for which you want to view network associations.

2. Click the **Associated Resources** tab.
3. Expand the Network Nodes section.

   The section displays a list of network nodes with which the Equipment entity is associated.

Related Topics

Representing Resources with Nodes

Working with Equipment

Equipment - New Page

You use the Equipment - New page to create new Equipment entities.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Select an Equipment specification. Equipment specifications represent physical items of hardware such as racks, shelves, and cards. See *UIM Concepts* for more information about Equipment specifications.
ID	If the entity specification requires a manually entered ID, enter a unique ID for the entity. Most entity specifications are defined in Design Studio so that IDs are generated automatically. The **ID** field for these specifications contains the text AUTOGENERATE.
Network Location	Displays the network location associated to the Equipment entity. If no location code appears, you can enter or search for one. See *UIM Concepts* for more information about network location codes.
Name	Enter a name for the Equipment entity.
Description	Enter a description of the Equipment entity.
Inventory Status	Displays the stage in the life cycle of the Equipment entity. This field is read only. See *UIM Concepts* for more information about inventory statuses.
Assignment Status	Displays the stage in the life cycle of a specific assignment of the Equipment entity to another entity. This field is read only. See *UIM Concepts* for more information about assignment statuses.
Serial Number	Enter a serial number for the Equipment entity.

Related Topics

Equipment Summary Page

Equipment Range - New Page

You use the Equipment Range - New page to create a range of new Equipment entities.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Select an Equipment specification on which to base a range of Equipment entities. Equipment specifications represent physical items of hardware such as racks, shelves, and cards. See *UIM Concepts* for more information about Equipment specifications.
Starting ID	Enter a starting ID for the entity. The ID must be numeric so that it can be incremented. This field is available only if the selected specification requires manual ID entry.
Quantity	Enter the number of Equipment entities to be created.

Related Topics

Creating an Equipment Range

Equipment - Information Page

You use the Equipment - Information page to edit the information that appears in the Summary page Information section. Some data elements, such as the ID, cannot be changed after the entity is created.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
ID	Displays the ID generated for the entity. This field is read only.
Name	Displays the name of the Equipment entity.
Specification	Displays the specification used to define the equipment. This field is read only.
Description	Displays the description of the Equipment entity.

Field	Description
Network Location	Displays the network location associated to the Equipment entity. If no location code appears, you can enter or search for one. See *UIM Concepts* for more information about network location codes.
Inventory Status	Displays the stage in the life cycle of the Equipment entity. This field is read only. See *UIM Concepts* for more information about inventory statuses.
Vendor Name	The name of the equipment vendor.
Model Number	The equipment model number.
Logical Device	Displays a link to logical devices with which the equipment is associated.
Physical Device	Displays a link to physical devices with which the equipment is associated.
Parent Equipment	Displays the parent equipment to which the equipment is associated.
Parent Equipment Holder	Displays the parent equipment holder.
Assignment Status	Displays the stage in the life cycle of a specific assignment of the Equipment entity to another entity. This field is read only. See *UIM Concepts* for more information about assignment statuses.
Serial Number	Displays the serial number of the Equipment entity.

Related Topics

Equipment Summary Page

Equipment - Bulk Edit Page

You use the Equipment - Bulk Edit page to edit the characteristics of one or more Equipment entities. To enable this option, you must do the following:

- Select a specification in the equipment search.
- Be in the current or live business interaction context.
- In the Search Results section, select one or more entities.
- Then, select the **Bulk Edit** option, which opens the Equipment - Bulk Edit page.

To bulk edit the characteristics of Equipment entities:

1. In the Equipment - Bulk Edit page, click the **Add Fields** button to select the characteristics fields to display.

   The Add Fields page appears.

2. Use the arrow buttons to move fields from the available fields to the selected fields column to select the fields to display and edit. You can also move fields from the selected fields column back to available fields. Click **OK**.

> **Note:**
>
> If there are no characteristics for the selected specification, the page columns appear empty. In this case, you need to add characteristics to the specification. See *UIM Concepts* for information on characteristics.

The selected characteristics appear in the bulk edit page.

3. Enter values in the relevant fields for the characteristics.
4. Click **Save And Close**.

   The following confirmation message is displayed:

   ```
   You are about to update all the selected entities of specification
   specificationName. The following characteristics values will be updated.

   characteristic1
   characteristic2
   .
   .
   characteristicN

   Do you want to proceed?
   ```

5. Click **Yes**.

   The characteristics with set field values are added to all selected entities.

Related Topics

Creating Entities

Equipment Summary Page

You use the Equipment Summary page to define the content for an equipment entity. You can also view the topology diagram of the equipment, using the UTIA application, by clicking **Topology**. See "Working with the Inventory Topology" for more information.

The page is arranged into several tabs, each of which is used for a different purpose:

- General Information Tab
- Associated Resources Tab
- Consumers Tab
- Groups and Infrastructure Tab
- Tree View Tab

See the following topics for more information about summary pages:

- Related Pages Menu
- Actions Menu

See "Entity Summary Page" for information about Summary page fields that are common among all entities.

Related Topics

Working with Equipment

General Information Tab

You use the **General Information** tab to view and edit basic information about the entity, most of which was defined when you created the entity. Click **Edit** to change this information. Some data elements, such as the ID, cannot be changed after the entity is created. See "Equipment - Information Page" for more information.

Associated Resources Tab

You use the **Associated Resources** tab to view information about the network nodes, custom involvements, and physical devices of the equipment.

Section	Description
Network Nodes	Displays any network nodes with which an Equipment entity is associated. The association occurs when you select an Equipment entity to be represented by a node in the network. The same Equipment entity can be represented by nodes in different networks. For each network association, you can see the network name, network description, node name, and node description.
Custom Involvements	Displays any custom associations defined for the equipment with entities that are not otherwise associated. See "Working with Custom Involvements" for more information.
Physical Devices	Displays any physical devices with which the Equipment entity is associated. See "Associating Equipment to a Physical Device Hierarchy" for more information. A physical device is a collection of physical resources that have a common function in the inventory. See "Working with Physical Devices" for more information.

Consumers Tab

You use the **Consumers** tab to view any business interactions with which the equipment is associated. See "Working with Business Interactions" for more information.

Groups and Infrastructure Tab

You use the **Groups and Infrastructure** tab to view information about the inventory groups, roles, and places associated with the equipment.

Section	Description
Inventory Groups	Displays any inventory groups to which the equipment is associated. You use the inventory groups to organize entities for a particular purpose. The fields that appear in the Inventory Group section are common among multiple entities. See "Working with Inventory Groups" for more information. See "Adding an Entity to an Inventory Group from the Entity Summary Page " for information about associating entities with an inventory group.

Section	Description
Roles	Displays any roles that are associated with the equipment. You can associate roles with entities to define the functions they perform in your inventory. An entity can have multiple roles simultaneously, and its roles can change over time. See "Working with Roles" for more information.
Places	Displays any places that are associated with the equipment. The association can imply that the equipment is located at the place or that there is some kind of relationship between the entities. The fields that appear in the Places section are common among multiple entities. See "Entity Summary Page" for more information. See "Associating Places to Entities" for information about creating new place associations.

Tree View Tab

The **Tree View** tab contains the Equipment View page, which enables you to view and define an equipment hierarchy. See "Equipment View Page" for more information.

Equipment View Page

You use the Equipment View page to view and define an equipment hierarchy.

Equipment Area

The left column contains a tree view of the equipment hierarchy. You can expand the hierarchy to see, select, add, move, copy, and remove child entities. You also open the equipment visualization from the tree view. The tree view and visualization are synchronized. When you select a child entity in the tree view, that entity is also selected in the visualization. See "Working with Equipment Hierarchy" for more information.

Visualization Area

The middle column displays a canvas for the visualization of the Equipment entity and its children. You can select, add, move, copy, and remove child entities. You can also change the view. The visualization is synchronized with the tree view. When you select an item in the visualization, it is also selected in the tree view. See "About Equipment Visualizations" for more information.

Field	Description
Select	Click this button, then select an Equipment entity in the visualization area. After you select an entity, you can perform actions on the entity. For example, you can add child entities to the equipment hierarchy. When you select an entity, information about it is displayed in the Details section.
Zoom	Click this button, then drag out an area in the diagram to zoom in on that area.

Field	Description
Pan	Click to move the visualization within the canvas to display another area. When you click this button, the cursor changes to a hand, and enables you to drag the visualization to display a different area. Panning is useful when the visualization is enlarged so that only part of the visualization is viewable.
Show All	Click to refresh the diagram to the zoom level required to show all elements in the diagram.
Zoom In	Click to enlarge the diagram on the current center point of the diagram.
Zoom Out	Click to reduce the size of the diagram on the current center point of the diagram.
Save Shelf Positions	Click to save the current shelf positions in the visualization. If you do not save the current positions, changes you make to the layout or position of elements are lost when you navigate away from the page. **Note:** Saving positions affects only the appearance and arrangement of the visualization, not the content of the related entities.
Clear Visual	Click to clear the contents of an equipment visualization. When you reopen the visualization after clearing, it displays items in their last-saved positions

Details Area

The right column displays information about the item that is selected in the tree view and visualization. The name, ID, and specification of the selected item is shown. For cards, the ID and specification of the equipment holder is also displayed. The information is displayed as links that you can click to go to the Summary page of an entity or specification.

Working with Logical Device Entities and Logical Device Configurations

Logical Device entities and their configurations provide a functional view of resources in your inventory. Logical devices are not physical, but they can be mapped to the physical devices and the media streams that they control.

Logical device hierarchies can include other logical devices as well as device interfaces. Device interfaces define access points into the device. These interfaces can be mapped to ports and connectors on an associated physical device (or on equipment and physical devices in the hierarchy of the parent physical device).

Logical devices can also be associated with logical device accounts.

Logical device configurations represent the state of the device at a particular point in time. You can create new configuration versions to reflect changes.

Logical device entities include many of the same features as other entities. You can include them in custom involvements, reservations, business interactions, and inventory groups. You

can also assign conditions to them. In addition, you can associate places with them and manage their life cycles.

See the following topics for more information about working with logical devices and logical device configurations:

- Creating a Range of Logical Devices
- Working with Logical Device Configurations
- Working with Device Interfaces
- Adding Cross-Connects Between Device Interfaces
- Associating Logical Devices to Network Locations and Network Entity Locations
- Associating Logical Devices to Physical Devices
- Removing Physical Device Associations from Logical Devices
- Associating Logical Devices to Media Streams
- Removing Media Stream Associations from Logical Devices
- Viewing and Adding Accounts from a Logical Device Summary Page

Creating a Range of Logical Devices

In a single operation, you can create a range of logical devices based on the same specification. For example, you could simultaneously create a number channel banks based on the same specification.

When you create a range of logical devices that automatically generate IDs, you specify only the quantity of entities to create. If the specification requires manual entry of IDs, you must specify both a starting ID and a quantity.

To create a range of logical devices:

1. In the **Inventory - Resources** group of the navigation section, click **Logical Devices**.

   The Logical Device Search page appears.
2. In the Search Results section, click **Create Range**.

   The Logical Device Range - New page appears.
3. In the **Specification** list, select the Logical Device specification you want to use for the entities you create.

   The page refreshes to reflect the characteristics in the selected specification.
4. In the **Starting ID** field, enter the first ID to use for the entities. This is required only if the Logical Device specification does not include ID autogeneration.

   The ID must be numeric so that it can be incremented.
5. In the **Quantity** field, enter the number of entities to create.
6. Click **Save and Close**.

   The Logical Device page reappears, listing the newly created entities in a search results table.

Related Topics

Working with Logical Device Entities and Logical Device Configurations

Working with Logical Device Configurations

You can create configurations for Logical Device entities. Configurations enable you to create new versions as a device evolves over time. Logical device configurations can include configuration items to which you can assign the following types of resources:

- Custom network addresses
- Device interfaces

> **Note:**
>
> Allocating a device interface to a logical device configuration is not the same as adding a device interface to a logical device. Logical devices *provide* device interfaces and logical device configurations *consume* them.

- Custom objects

Logical device configurations have the same features and functionality as other configurations. See "Working with Entity Configurations" for more information about using configurations.

Related Topics

Working with Logical Device Entities and Logical Device Configurations

Including Logical Devices in Logical Device Hierarchies

Logical devices often include other logical devices in their hierarchies. For example, a Logical Device entity representing a router can include logical devices that represent virtual routers.

The logical devices you can include in a logical device hierarchy are governed by specification relationships. If a logical device specification includes one or more specification relationships, then only the related specifications can be included in its hierarchy. The type of relationship (Parent or Child) must be respected in the hierarchy.

In addition to other logical devices, logical device hierarchies can include a number of different entities, such as device interfaces, cross-connects, and physical device.

To add a logical device to a logical device hierarchy:

1. Open the Summary page of a Logical Device entity.
2. On the **General Information** tab, in the Logical Device Hierarchy section, expand the hierarchy to reveal the place where you want to add a logical device.
3. Select the device you want to be the parent of the logical device you are adding.
4. Click the **Add Logical Device** icon in the toolbar.

   The Child Logical Device dialog box appears.
5. Search for or create a logical device. See "Searching" for more information.

   If the logical device specification for the parent logical device has specification relationships, then the logical devices you can search for or create are limited.
6. In the Search Results section, select a logical device, then click **OK**.

   The dialog box closes and the logical device appears in the hierarchy.

Related Topics

Working with Device Interfaces

Adding Cross-Connects Between Device Interfaces

Associating Logical Devices to Physical Devices

Cloning Logical Devices

You can clone logical devices to copy the entity along with the logical devices, physical devices, and Equipment entities in its hierarchy or with which it is associated. Cloning is different from duplication because duplication copies only the entity itself.

To clone a logical device:

1. Do one of the following:
   - In the Search Results section of a Logical Device Search page, select a logical device and click the **Clone** button.
   - In the Search Results section of a Physical Device Search page, select a physical device that has a logical device association and click the **Clone** button.
   - In a Logical Device Summary page, select **Clone** from the **Actions** menu.
   - In the Physical Device Summary page of a physical device that has a logical device association, select **Clone** from the **Actions** menu.

   The Logical Device - Clone page appears. The page includes sections that display information about the existing logical device, some of which you can change for the cloned logical device.
2. (Optional) In the Entity Cloning Information section, enter text in the **Logical Device Name** and **Physical Device Name** fields.

   These names are used for all entities of the relevant types created during the cloning.
3. (Optional) In the Entity Cloning Information section, enter a prefix in the **Equipment Name Prefix** field.

   This prefix and an underscore character is added to the names of all Equipment entities created during the cloning.
4. (Optional) Specify a different property location for the cloned device:
   a. In the Location for Cloned Device section, click the **Select** button.

      The Property Location Search page appears.
   b. Search for property locations.
   c. Select a property location, then click **OK**.

      The Property Location Search area closes and the Location for Cloned Device section updates to reflect the new property location.
5. (Optional) Select devices and interfaces to exclude from cloning:
   a. In the Logical Device Hierarchy section, expand the hierarchy.

      Each logical device and device interface has a check box that is selected by default.
   b. De-select any logical devices or device interfaces that you do not want to include in the cloned logical device. De-selecting a parent device in the hierarchy automatically de-selects its children.

6. (Optional) Select mapped physical devices and equipment to exclude from cloning:
   a. In the Logical Device Hierarchy section, select a logical device or device interface.

      The Mapped Physical Device Hierarchy section displays the hierarchy of mapped physical devices and associated equipment for the selected logical device or device interface. Physical devices and equipment in the hierarchy are selected unless the corresponding logical device or device interface is de-selected in the Logical Device Hierarchy section.

   b. De-select any physical devices or equipment that you do not want to include in the cloned logical device.
7. Click the **Clone** button.

   The Logical Device - Clone page closes and the Summary page for the cloned logical device appears.

Related Topics

Duplicating Entities

Working with Device Interfaces

A logical device can provide one or more device interfaces to represent access points into the device. The relationship between the Logical Device specification and the Device Interface specification defines the types of device interfaces that can be added. Only device interfaces related to the Logical Device specification can be added to the device. The relationship also determines the minimum and maximum number of interfaces that can be added. The minimum number of device interfaces is added automatically to a logical device when it is created in UIM. You can add additional device interfaces up to the maximum number.

Device interfaces have hierarchies. A child device interface is called a sub-device interface. The highest-level device interface in a hierarchy is called a media interface.

Device interfaces specifications determine the type and number of sub-device interfaces they can have. Device interfaces cannot exist on their own, however. They must be provided by logical devices, either directly or, in the case of sub-device interfaces, indirectly through a parent device interface.

Device Interface specifications can include rate codes that define the technology and capacity of connectivity that they can terminate. See *UIM Concepts* for more information about rate codes.

A device interface can also be assigned to a logical device configuration, including a configuration of a logical device other than the one that provides it.

See the following topics for more information about working with device interfaces:

- Adding Device Interfaces to Logical Devices
- Deleting Device Interfaces and Sub-Device Interfaces from Logical Devices
- Viewing Information About Device Interfaces
- Adding Sub-Device Interfaces to Device Interfaces

Adding Device Interfaces to Logical Devices

You can add device interfaces to a logical device from the device's Summary page. You can also add interfaces to a logical device from the Summary page of another logical device whose hierarchy includes the device to which you are adding the interface. Interfaces you add to a

child logical device in a parent device's Summary page automatically appear in the Summary page of the child device.

> **Note:**
>
> You cannot create parent/child relationships among logical devices that are associated with network locations.

You can add only new interfaces; you cannot add device interfaces that were created previously.

You can create multiple device interfaces in a single operation, provided that the maximum number of interfaces defined by the Logical Device specification is not exceeded. The device interface names increment automatically based on the values of the **Rate Code**, **Name**, **Interface Number**, and **Quantity** fields. For example, if you define the name as SL04, the interface number as 10, and the quantity as 4, UIM creates four device interfaces named DS3/SL04/10, DS3/SL04/11, DS3/SL04/12, and DS3/SL04/13.

To add a device interface to a logical device:

1. Open the Summary page of the Logical Device entity whose hierarchy includes the device to which you want to add an interface.
2. On the **General Information** tab, in the Logical Device Hierarchy section, expand the hierarchy to reveal the device to which you want to add an interface.

   If you are adding an interface to the parent device, you do not have to expand the hierarchy.
3. Right-click a device and select **Create Device Interface**.

   The Device Interface - New dialog box appears.
4. In the **Specification** list, select the specification for the type of interface you want to create.

   If no specifications are listed, you cannot add an interface to the device. When you select a specification, the page refreshes to reflect the characteristics in the selected specification.
5. (Optional) Change the value of the **Quantity** field to create more than one interface of the same type.
6. Enter information into all required fields and any appropriate optional fields.
7. Click **Save and Close**.

   The dialog box closes and the new interface appears in the Logical Device Hierarchy section. If the device interface specification includes a rate code, it is displayed as part of the device interface information in the hierarchy.

   If adding the interface would exceed the maximum number defined in the relationship of the Logical Device and Device Interface specifications, UIM displays an error message and the interface is not added.

Related Topics

Deleting Device Interfaces and Sub-Device Interfaces from Logical Devices

Viewing Information About Device Interfaces

Adding Sub-Device Interfaces to Device Interfaces

Deleting Device Interfaces and Sub-Device Interfaces from Logical Devices

You can delete device interfaces and sub-device interfaces from logical devices. If deleting them would result in the device having fewer than the number of interfaces or sub-device interfaces required by the relationship between the Logical Device and Device Interface specifications, UIM displays and error message and the interfaces are not deleted.

In addition, you cannot delete a device interface that has a trail-bound cross-connect to another device interface. See *UIM Concepts* and "Adding an Interconnection" for more information about trail-bound cross-connects.

Deleting a device interface or sub-device interface also deletes any mappings from it to ports or connectors.

To delete a device interface or sub-device interface from a logical device:

1. Open the Summary page of the Logical Device entity whose hierarchy includes the device that you want to delete.
2. On the **General Information** tab, in the Logical Device Hierarchy section, expand the hierarchy to display the device interface that you want to delete.
3. Right-click the interface and select **Delete**.

   The device interface is deleted.

Related Topics

Adding Device Interfaces to Logical Devices

Viewing Information About Device Interfaces

Adding Sub-Device Interfaces to Device Interfaces

Viewing Information About Device Interfaces

The Logical Device Hierarchy section of a Logical Device Summary page includes a list of device interfaces associated with the logical device. The list includes the name of each interface, its ID, reservation status, conditions, and assignment status. The assigned rate code (if any) appears in parentheses.

You can view additional information about a device interface by opening its Summary page. The page includes a hierarchy that you can use to view, add, and delete sub-device interfaces.

You can also view information about consumers of the interface. Although the interface may technically be assigned to a configuration item or pipe termination point, the primary consumer is shown. Primary consumers are the Service, Pipe, Place, or Logical Device entities to which the configuration items or termination points belong. For each consumer of the interface, you see the name and inventory status. The name is a link to the Summary page for the entity.

To view device interface information:

1. Open the Summary page of the Logical Device entity whose hierarchy includes the device interface that you want to view.
2. On the **General Information** tab, in the Logical Device Hierarchy section, expand the hierarchy to reveal the interface about which you want information.

   The interfaces appear as clickable links.
3. Click the device interface link.

The Device Interface Summary page appears.

4. (Optional) In the Device Interface Hierarchy section, expand the hierarchy to view sub-device interfaces.

Related Topics

Adding Device Interfaces to Logical Devices

Deleting Device Interfaces and Sub-Device Interfaces from Logical Devices

Adding Sub-Device Interfaces to Device Interfaces

Adding Sub-Device Interfaces to Device Interfaces

You can add sub-device interfaces to device interfaces. Sub-device interfaces are virtual device interfaces used for connectivity. Sub-device interfaces can themselves have sub-device interfaces as children. A device interface can have sub-device interfaces only if its specification includes a relationship to one or more sub-device interface specifications.

You can add sub-device interfaces in the Summary page of the logical device that is the direct parent of the device interface or in the Summary page of any logical device that includes the device interface in its hierarchy.

You can also add sub-device interfaces from a device interface's own Summary page. See "Viewing Information About Device Interfaces " for information about opening Device Interface Summary pages.

To add a sub-device interface:

1. Open the Logical Device Summary page of the logical device whose hierarchy includes the device interface to which you want to add a sub-device interface.
2. On the **General Information** tab, in the Logical Device Hierarchy section, expand the hierarchy to reveal the device interface or sub-device interface to which you want to add a sub-device interface.
3. Right-click the interface and select **Create Sub Device Interface**.

   The Device Interface - New dialog box appears.
4. From the **Specification** list, select the specification for the type of sub-device interface you want to create.

   If no specifications are listed, you cannot add a sub-device interface to the interface.

   After you select a specification, the page refreshes to reflect the characteristics in the selected specification.
5. Enter information into all required fields and any appropriate optional fields.
6. Click **Save and Close**.

   The new sub-device interface appears in the Logical Device Hierarchy section.

   If adding the sub-device interface would exceed the maximum number defined by the relationship of the Device Interface specifications for the parent and sub-device interface, UIM displays an error message and the sub-device interface is not added.

Related Topics

Adding Device Interfaces to Logical Devices

Deleting Device Interfaces and Sub-Device Interfaces from Logical Devices

Viewing Information About Device Interfaces

Working with Flow Interfaces

Flow interfaces enable you to partition media interfaces into virtual channels based on bit rate. Flow interfaces are used with flow identifiers (such as VLAN IDs) to trace the path of services through the device interfaces and connectivities in multipoint and point-to-point service arrangements.

Flow interfaces always have a device interface parent. The device interface parent must be a media interface. Flow interfaces are similar to sub-device interfaces, but can have configurations that capture their attributes.

You cannot create flow interfaces directly from the logical device or device interface hierarchy in a Summary page. Rather, you create them in the packet virtual networks. Flow interfaces are dependant entities derived from the virtual network to which they belong.

Even though you do not create flow interfaces from the logical device or device interface hierarchies, they are displayed in those hierarchies. The hierarchies include information about consumption of the flow interfaces.

Flow interfaces describe the termination type of the connectivities terminated on their parent device interfaces. There are four termination types defined in flow interface specifications:

- Access. Indicates that the purpose of an interface is to terminate connectivity that provides access to the Provider's network, such as an Ethernet UNI Connectivity.
- Internetwork. Indicates that the purpose of an interface is to terminate connectivity that interconnects two networks.
- Trunk. Indicates that the purpose of an interface is to terminate connectivity between service provider equipment within the same network. This designation has no direct implication on how the port or interface is configured in the Provider's network.
- Unknown. Indicates that the purpose of the interface is unknown.

See the following topics for more information about working with flow interfaces:

- Viewing Information About Flow Interface Consumption
- Adding Flow Interfaces to Packet Virtual Networks from the Network Topological View
- Adding Flow Interfaces to Packet Virtual Networks As Configuration Items

Viewing Information About Flow Interface Consumption

Logical device and device interface hierarchies that include flow interfaces display information about the consumption of the flow interfaces. The **Percent Consumed** column shows the percentage of the interface capacity that is consumed.

In addition, the **Percent Consumed** columns for flow interfaces whose consumption has reached threshold values are highlighted. By default, flow interfaces with greater than 50% consumption are highlighted in yellow and flow interfaces with greater than 80% capacity are highlighted in red. An alert icon also replaces the standard icon in affected rows.

Both the threshold values and the colors are configurable. See *UIM System Administrator's Guide* for more information.

To view information about flow interface consumption:

1. Open the Logical Device Summary page of a logical device whose hierarchy includes flow interfaces.

2. On the **General Information** tab, in the Logical Device Hierarchy section, expand the hierarchy to display the flow interfaces.

   The **Percent Consumed** column and row highlighting indicate the consumption level of the flow interfaces.

Related Topics

Adding Flow Interfaces to Packet Virtual Networks

Flow Interface Summary Page

You use the Flow Interface Summary page to define the content for a Flow Interface entity.

See the following topics for more information about summary pages:

- Creating Entities
- Searching for Entities

> **Note:**
>
> The sections listed in the following table are specific to the Flow Interface Summary page. See "Entity Summary Page" for information about Summary page fields that are common among all entities.

Section	Description
Information	Displays basic information about the entity, most of which was defined when you created the entity. Click **Edit** to change this information. Some data elements, such as the ID, cannot be changed after the entity is created. The Information section includes a Logical Device area that displays information about the logical device that provides the parent device interface of the flow interface.
Flow Interface Hierarchy	Flow interfaces do not have their own hierarchies, so this displays only the flow interface itself.
IP Resources	Lists IP subnets assigned to the flow interface. Click **Assign** to assign a new IP subnet.
Network Nodes	Displays any network nodes that represent the flow interface. See "Representing Resources with Nodes" for more information.

Related Topics

Adding Flow Interfaces to Packet Virtual Networks

Flow Interface - Information Page

You use the Flow Interface - Information page to edit the information that appears in the Summary page Information section. Some data elements, such as the ID, cannot be changed after the entity is created.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Displays the specification used to define the flow interface. This field is read only.
ID	Displays the ID generated or entered when the entity was created. This field is read only.
Name	Edit the name of the flow interface.
Interface Number	Edit the interface number.
Bit Rate	Displays the bit rate associated with the rate code.
Custom Interface Number	Edit the customer interface number.
Description	Edit the description of the flow interface.
Parent Device Interface	Displays the rate code defined by the specification used for this flow interface.
Inventory Status	Displays the stage in the life cycle of the device interface. This field is read only. See *UIM Concepts* for more information about inventory statuses.
Assignment Status	Displays the stage in the life cycle of a specific assignment of the flow interface to another entity. This field is read only. See *UIM Concepts* for more information about assignment statuses.
Termination Type	Displays the termination type of the flow interface. The termination type when the flow interface is created in a packet virtual network. If you add a flow interface manually by searching, you set the termination type yourself. If you add the flow interface by associating a connectivity with the network, the termination type is set automatically based on the type of connectivity terminated on the parent device interface that terminates the connectivity. • Access. Indicates that the purpose of an interface is to terminate connectivity that provides access to the Provider's network, such as an Ethernet UNI Connectivity. This designation has no direct implication on how the port or interface is configured in the Provider's network. • Internetwork. Indicates that the purpose of an interface is to terminate connectivity that interconnects two networks • Trunk. Indicates that the purpose of an interface is to terminate connectivity between service provider equipment within the same network. This designation has no direct implication on how the port or interface is configured in the Provider's network • Unknown. Indicates that the purpose of the interface is unknown.
Terminates Packet Rider	Not used.
Logical Device Area	See Table 9-1 for more information.

Table 9-1 This table describes the fields concerning Logical Device Area

Field	Description
Logical Device	Displays the name of the logical device that provides the parent interface of the flow interface.
Device Identifier	Displays the ID of the logical device that provides the parent interface of the flow interface.
Network/Entity Location	Displays the network or network entity location of the logical device that provides the parent interface of the flow interface.
Service Location	Displays the service location of the logical device that provides the parent interface of the flow interface.

Related Topics

Adding Flow Interfaces to Packet Virtual Networks

Flow Interface Configuration Information - New Version Page

You use the Flow Interface Configuration Information - New Version page to create new logical device configurations.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Select a Flow Interface Configuration specification to use for the new configuration version. If only one configuration specification is associated with the parent Flow Interface specification, this field displays that configuration specification. See *UIM Concepts* for more information about configuration specifications.
Previous Configuration	Displays the version number of the previous configuration. If you are creating the first configuration version, this value is **0**. This field is read only.
Version	Displays the sequential version number of the configuration you are creating.
ID	Enter a unique ID for the configuration or accept the default. The default value is based on the ID of the parent flow interface with an incremented version number.
Name	Enter a name for the configuration or accept the default. The default value is based on the name of the parent flow interface with an incremented version number.
Start Date	Enter the date on which the configuration will become active.

Related Topics

Adding Flow Interfaces to Packet Virtual Networks

Working with Entity Configurations

Flow Interface Configuration Information Page

You use the Flow Interface Configuration Information page to modify a flow interface configuration. This page is available only before the configuration is completed or canceled.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Displays the name of the specification used to create the configuration. See *UIM Concepts* for more information about configuration specifications.
Previous Configuration	Displays the version number of the previous configuration, if any. If you are creating the first configuration version, this value is **0**.
Version	Displays the sequential version number of the configuration you are creating.
ID	Modify the ID for the configuration. The default value is based on the ID of the parent flow interface with an appended version number.
Name	Modify the name of the configuration. The default value is the same as the ID.
Start Date	Modify the date on which the configuration will become active.

Related Topics

Adding Flow Interfaces to Packet Virtual Networks

Working with Entity Configurations

Flow Interface Configuration Page

You use the Flow Interface Configuration page to define configuration items, to which you can assign resources.

See the following topics for more information about summary pages:

- Related Pages Menu
- Actions Menu

Field	Description
Information	Displays basic information about the configuration, most of which was defined when you created the entity. Click **Edit** to change this information. Some data elements, such as the ID, cannot be changed after the configuration is created. The **Edit** button is available only before the configuration is completed or canceled.
Configuration Items	Displays configuration items associated with the configuration. Flow identifiers such as VLAN IDs assigned in a packet virtual network to which the flow interface belongs are added automatically to the configuration. See "Adding Configuration Items " for information about adding new configuration items.

Related Topics

Adding Flow Interfaces to Packet Virtual Networks

Working with Entity Configurations

Adding Cross-Connects Between Device Interfaces

You can add cross-connects that interconnect device interfaces in a logical device. See *UIM Concepts* for more information about cross-connects.

To add cross-connects between device interfaces:

1. In a Logical Device Summary page, click the **General Information** tab.
2. In the Logical Device Hierarchy section, expand the logical device hierarchy to reveal the device interfaces you want to connect.
3. Right-click the first device interface or logical device and select **Cross Connect From** from the context menu.
4. Right-click the other device interface or logical device and select **Cross Connect To** from the context menu.

   The Cross Connect Visual dialog box appears. The dialog box includes two columns: one for your **Cross Connect From** selection and one for your **Cross Connect To** selection. Each column shows the device interfaces in the hierarchy of the devices or device interfaces you selected. If you selected device interfaces at the bottom of a hierarchy, they are shown alone.

   See "Using the Cross-Connect Visual Dialog Box" for information about the tools in the dialog box.
5. Click the circle next to the first device interface you want to connect.

   The circle is surrounded by a black box.
6. Ctrl-click the circle next to the second device interface you want to connect.

   The circle is surrounded by a black box.
7. Click the **Create Cross Connect** button in the toolbar.

   UIM validates that the rate codes of the two device interfaces are the same or compatible. It then creates an interface-bound cross-connect. A line connects the two black boxes in the dialog box.
8. Close the dialog box.

The logical device hierarchy is refreshed. The two device interfaces now have icons to indicate that they are connected.

Using the Cross-Connect Visual Dialog Box

The Cross-Connect Visual dialog box includes a number of tools that you use to change the display of device interfaces.

Field	Description
Select	Click this button, then select an interface in the canvas area. Ctrl-click to select a second interface.
Zoom	Click this button, then drag out an area to zoom in on.
Pan	Click to move within the canvas When you click the **Pan** button, the cursor changes to a hand and enables you to drag the diagram to display a different area.
Show All	Click to refresh the canvas to the zoom level required to show all interfaces.
Zoom In	Click to enlarge the display on the current center point.
Zoom Out	Click to reduce the size of the display on the current center point.
Delete Cross Connect	Click to delete the selected cross-connect.
Create Cross Connect	Click to create a cross-connect between two selected interfaces.

Associating Logical Devices to Network Locations and Network Entity Locations

You can associate logical devices to network locations and network entity locations, making the devices available for connectivity termination. A logical device with such an association is called a network device.

Network locations and network entity locations are propagated through logical device hierarchies and associations, even when the Logical Device has active consumers. See *UIM Concepts* for more information about the rules that govern these propagations.

To associate a logical device to a network location or network entity location:

1. Open the Logical Device Summary page of a logical device.
2. On the **General Information** tab, in the Logical Device Information section, click **Edit**.
3. In the **Network/Entity Location** field, enter the first few characters of a network location or network entity location, then select the location you want to associate.

   The location appears in the **Network/Entity Location** field.

Related Topics

Associating Logical Devices to Service Locations

Adding Network Entity Codes to Network Locations

Associating Equipment to Network Locations

Associating Physical Devices to Network Locations

Associating Logical Devices to Service Locations

You can associate logical devices to service locations.

To associate a logical device to a service location:

1. Open the Logical Device Summary page of a logical device.
2. On the **General Information** tab, in the Logical Device Information section, click **Edit**.
3. Near the **Service Location Name** field, click the Search icon.

   The Property Location Search dialog box appears.
4. Click the **Service Location Name** check box to limit you search to property locations that have been designated as service locations.
5. Enter additional search criteria as needed, then click **Search**.
6. In the Search Results section, select a service location.
7. Click **OK**.

   The dialog box closes and the **Service Location** field is populated with your selection.

Related Topics

Associating Logical Devices to Network Locations and Network Entity Locations

Associating Logical Devices to Physical Devices

You can associate logical devices to physical devices. You can make an association from a logical device's own Summary page or from the Summary page of another logical device that includes it in its hierarchy. A logical device can be associated with any number of physical devices, but a physical device can be associated with only one logical device.

This type of association makes it possible to map device interfaces provided by the logical device to ports and connectors provided by the physical device (or by equipment or physical devices in the hierarchy of the parent physical device). See "Mapping Device Interfaces to Physical Ports and Connectors" for more information.

You can also associate a logical device and a physical device from a Physical Device Summary page. See "Associating Physical Devices with Logical Devices" for more information. The association is the same whether you start from the physical device or the logical device.

To associate a logical device to a physical device:

1. Open the Logical Device Summary page of a logical device that you want to associate with a physical device or that includes such a device in its hierarchy.
2. On the **General Information** tab, in the Logical Device Hierarchy section, expand the hierarchy to reveal the device that you want to associate with a physical device.
3. Select the device and click **Associate Physical Devices** in the toolbar.

   The Associate Physical Device dialog box appears.
4. Search for or create a physical device.
5. In the Search Results section, select a Physical Device entity.
6. Click **OK**.

The link to the physical device appears after the logical device in the Logical Device Hierarchy section.

Related Topics

Removing Physical Device Associations from Logical Devices

Working with Logical Device Entities and Logical Device Configurations

Removing Physical Device Associations from Logical Devices

You can remove a physical device association from a logical device. Because logical devices can have any number of associations with physical devices, you do not have to unassociate a physical device before adding a new association.

The association can also be removed from the Summary page of the physical device.

To remove a physical device association from a logical device:

1. Open the Logical Device Summary page of a logical device from which you want to remove a physical device association.
2. On the **General Information** tab, expand the hierarchy in the Logical Device Hierarchy section to show the logical device whose association you want to remove.
3. Select the logical device, the click the **Unassociate Physical Devices** button in the toolbar.

   The Associate Physical Devices dialog box appears.
4. Select a physical device and click **Delete**.

   The physical device is removed from the list.

Related Topics

Associating Logical Devices to Physical Devices

Working with Logical Device Entities and Logical Device Configurations

Associating Logical Devices to Media Streams

You can associate logical devices to media streams from Logical Device Summary pages. A logical device can be associated with any number of media streams, and a media stream can be associated with any number of logical devices.

A media handle represents additional information (like a network-facing value) for a logical device and a media stream combination. When you associate a logical device to a media stream, you specify a value for the media handle, which identifies their association.

You can also associate a logical device and a media stream from a Media Stream Summary page. See "Associating Media Streams to Logical Devices" for more information. The association is the same whether you start from the media stream or the logical device.

To associate a logical device to a media stream:

1. Open the Logical Device Summary page of a logical device that you want to associate with a media stream.
2. Click the **Associated Resources** tab, and then click the **Grants Media Streams** subtab.
3. In the Grants Media Streams section, click **Add**.

The Associate Media Streams dialog box appears.

4. Search for or create a Media Stream entity.
5. In the Search Results section, select a Media Stream entity.
6. Click **OK**.

   The link to the media stream appears in the Grants Media Streams section.
7. (Optional) To add a media handle, select the media stream in the Grants Media Streams section and click **Edit**.

   The **Media Handle** field in the media stream's row becomes available and a **Save** button appears.
8. In the **Media Handle** field, enter a value for the media handle.
9. Click **Save**.

Related Topics

Removing Media Stream Associations from Logical Devices

Removing Media Stream Associations from Logical Devices

You can remove a media stream association from a logical device Summary page. Because logical devices can have any number of associations with media streams, you do not have to unassociate a media stream before adding a new association.

The association can also be removed from the Summary page of the media stream.

To remove a media stream association from a logical device:

1. Open the Logical Device Summary page of a logical device from which you want to remove a media stream association.
2. Click the **Associated Resources** tab, and then click the **Grants Media Streams** subtab.
3. In the Grants Media Streams section, select the media stream that you want to unassociate from the logical device.
4. Click **Delete**.

   The association is removed and the link to the media stream is removed from the Grants Media Streams section.

Related Topics

Associating Logical Devices to Media Streams

Viewing and Adding Accounts from a Logical Device Summary Page

Logical device accounts can be associated with logical devices. From a Logical Device Summary page, you can view the logical device accounts that are associated with a device in the Logical Device Accounts section. You can also add new or existing accounts to the device.

You can also associate a logical device account with a logical device from the Summary page of the account. See "Working with Logical Device Accounts" for more information.

See the following topics for more information about viewing and adding accounts from a Logical Device Summary page:

- Associating Logical Device Accounts with Logical Devices

- Deleting Logical Device Account Associations from Logical Devices

Associating Logical Device Accounts with Logical Devices

You can associate a logical device account with a logical device. The associations you can make depend on whether the specifications for the logical device and logical device account include specification relationships. If relationships exist, then you can make associations only based on the related specifications. If no relationships exist, then you can make an association with any logical device account.

To associate accounts with a logical device:

1. Open the Logical Device Summary page of a logical device with which you want to associate accounts.
2. On the **General Information** tab, in the Logical Device Accounts section, click **Associate**.

   The Associate Logical Device Accounts dialog box appears.
3. Search for or create a Logical Device Account entity.
4. In the Search Results section, select a Logical Device Account entity.
5. Click **OK**.

   The dialog box closes and the Logical Device Accounts section in the Summary page refreshes to include the entity.

Related Topics

Deleting Logical Device Account Associations from Logical Devices

Deleting Logical Device Account Associations from Logical Devices

You can delete logical device accounts that are associated with a logical device. Deleting the association does not remove the account itself, just the association.

To delete logical device account associations from a logical device:

1. Open the Logical Device Summary page of a logical device from which you want to remove an associated account.
2. On the **General Information** tab, in the Logical Device Accounts section, select the account to delete.
3. Click **Delete**.

   The selected account is removed from the list.

Related Topics

Associating Logical Device Accounts with Logical Devices

Logical Device - New Page

You use the Logical Device - New page to create new logical devices.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Select a Logical Device specification. A logical device represents a functional view of a set of resources. The logical device itself is not physical, but it can be supported by one or more physical resources that support it and act together logically to perform one or more functions. See *UIM Concepts* for more information about logical devices.
ID	If the entity specification requires a manually entered ID, enter a unique ID for the entity. Most entity specifications are defined in Design Studio so that IDs are generated automatically. The **ID** field for these specifications contains the text AUTOGENERATE.
Network/Entity Location	Enter or search for a network location code or a network location code/entity code combination. See *UIM Concepts* for more information about network location codes and network entity location codes.
Service Location Name	Enter or search for a service location name. Service location is a type of property location like network location. See *UIM Concepts* for more information about service locations.
Device Identifier	Available if you enter a value in the **Network/Entity Location**. You can enter an alphanumeric string that uniquely identifies the logical device in the network to which it is associated. If you do not enter a value, UIM creates one when you save the device.
Name	Enter a name for the logical device.
Description	Enter a description of the logical device.
Inventory Status	Displays the stage in the life cycle of the logical device. This field is read only. See *UIM Concepts* for more information about inventory statuses.
Assignment Status	Displays the stage in the life cycle of a specific assignment of the logical device to another entity. This field is read only. See *UIM Concepts* for more information about assignment statuses.

Related Topics

Logical Device Summary Page

Creating Entities

Searching for Entities

Logical Device Range - New Page

You use the Logical Device Range - New page to create a range of new Equipment entities.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Select an Logical Device specification on which to base the range of logical devices. A logical device represents a functional view of a set of resources. The logical device itself is not physical, but it can be supported by one or more physical resources that support it and act together logically to perform one or more functions. See *UIM Concepts* for more information about logical devices.
Starting ID	Enter a starting ID for the entity. The ID must be numeric so that it can be incremented. This field is available only if the selected specification requires manual ID entry.
Network Location	Enter a valid Network Location of the entities to be created. The unique Device Identifier values are generated with the Network Location as the prefix.
Quantity	Enter the number of Logical Device entities to be created.
Name	Enter a name for the logical devices to be created.
Description	Enter a description of the logical devices to be created.

Related Topics

Creating a Range of Logical Devices

Logical Device - Information Page

You use the Logical Device - Information page to edit the information that appears in the Summary page Information section. Some data elements, such as the ID, cannot be changed after the entity is created.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Displays the specification used to define the logical device. This field is read only.
ID	Displays the ID generated or entered when the entity was created. This field is read only.

Field	Description
Network/Entity Location	Enter or search for a network location code or a network location code/entity code combination. See *UIM Concepts* for more information about network location codes and network entity codes.
Device Identifier	Displays the value entered during creation or the default created by UIM. Only used when a **Network/Entity Location** value is present.
Name	Edit the name for the logical device.
Description	Edit the description of the logical device.
Physical Device	Displays the name of the physical device associated with the logical device. The name is formatted as a link that you can use to open the Summary page for the physical device.
Inventory Status	Displays the stage in the life cycle of the logical device. This field is read only. See *UIM Concepts* for more information about inventory statuses.
Assignment Status	Displays the stage in the life cycle of a specific assignment of the logical device to another entity. This field is read only. See *UIM Concepts* for more information about assignment statuses.

Related Topics

Logical Device Summary Page

Creating Entities

Searching for Entities

Logical Device - Bulk Edit Page

You use the Logical Device - Bulk Edit page to edit the characteristics of one or more Logical Device entities. To enable this option, you must do the following:

- Select a specification in the logical device search.
- Be in the current or live business interaction context.
- In the Search Results section, select one or more entities.
- Then, select the **Bulk Edit** option, which opens the Logical Device - Bulk Edit page.

To bulk edit the characteristics of Logical Device entities:

1. In the Logical Device - Bulk Edit page, click the **Add Fields** button to select the characteristics fields to display.

   The Add Fields page appears.

2. Use the arrow buttons to move fields from the available fields to the selected fields column to select the fields to display and edit. You can also move fields from the selected fields column back to available fields. Click **OK**.

> **Note:**
>
> If there are no characteristics for the selected specification, the page columns appear empty. In this case, you need to add characteristics to the specification. See *UIM Concepts* for information on characteristics.

The selected characteristics appear in the bulk edit page.

3. Enter values in the relevant fields for the characteristics.
4. Click **Save And Close**.

   The following confirmation message is displayed:

   ```
   You are about to update all the selected entities of specification
   specificationName. The following characteristics values will be updated.

   characteristic1
   characteristic2
   .
   .
   characteristicN

   Do you want to proceed?
   ```

5. Click **Yes**.

   The characteristics with set field values are added to all selected entities.

Related Topics

Creating Entities

Logical Device Summary Page

You use the Logical Device Summary page to define the content for a Logical Device entity. You can also view the topology diagram of the logical device, using the UTIA application, by clicking **Topology**. See "Working with the Inventory Topology" for more information.

The page is arranged into several tabs, each of which is used for a different purpose:

- General Information Tab
- Configurations Tab
- Associated Resources Tab
- Consumers Tab
- Groups and Infrastructure Tab

See the following topics for more information about summary pages:

- Related Pages Menu
- Actions Menu

See "Entity Summary Page" for information about Summary page fields that are common among all entities.

Related Topics

Working with Logical Device Entities and Logical Device Configurations

Searching for Entities

General Information Tab

You use the **General Information** tab to view and edit basic information about the logical device, to view and maintain the logical device hierarchy, and to view logical device accounts associated with the logical device.

Section	Description
Logical Device Information	Displays basic information about the entity, most of which was defined when you created the entity. Click **Edit** to change this information. Some data elements, such as the ID, cannot be changed after the entity is created. See "Creating Entities " and "Logical Device - New Page" for more information.
Logical Device Hierarchy	Displays the entities included in the logical device hierarchy. The toolbar includes buttons that enable you to maintain the hierarchy. Select an item in the hierarchy and do click the appropriate button: • Select **Add Logical Devices** or **Remove Logical Devices** to add or remove a child logical device from the hierarchy. • Select **Associate Physical Devices** to associate logical devices to physical devices. Click **Unassociate Physical Devices** to remove physical device associations. See "Associating Logical Devices to Physical Devices" and "Removing Physical Device Associations from Logical Devices" for more information. • Click **Maintain Mappings** to map device interfaces to physical ports or connectors in associated physical and logical devices. Click **Remove Mappings** to remove mappings one at a time from individual device interfaces, ports, or connectors. See "Mapping Device Interfaces to Physical Ports and Connectors" and "Removing Mappings" for more information. You can also right-click in the hierarchy and select the following commands from the context menu: • Select **Create Device Interface** to add device interfaces to the logical device. See "Adding Device Interfaces to Logical Devices" for more information. • Select **Create Sub Device Interface** add sub-device interfaces to device interfaces. See "Adding Sub-Device Interfaces to Device Interfaces" for more information.
Logical Device Accounts	Displays the logical device accounts associated with the logical device. See "Associating Logical Device Accounts with Logical Devices" for more information.
Total Capacity	Displays the total capacity of the logical device that you can consume. The Total Capacity of a logical device includes the bit rates of all device interfaces and flow interfaces, and the total capacities of all the child logical devices under the logical device.
Capacity Consumed	Displays the amount of capacity that is consumed from the total capacity that is available for the logical device. The capacity consumed includes the capacity consumed of all the child logical devices under the logical device. The value varies when you assign or unassign any device interfaces.

Section	Description
Percentage Consumed	Displays the percentage of the capacity consumed by the logical device.

Configurations Tab

You use the **Configurations** tab to view any configurations created for the logical device. You create configurations for Logical Device entities to create new versions as a device evolves over time. This tab displays the version, ID, name, specification, status, start and end dates of the configuration.

This tab is available only when the specification on which the logical device is based includes a reference to a Logical Device Configuration specification.

The fields that appear in the Configurations section are common among multiple entities. See "Entity Summary Page" for more information. See "Adding the First Version of a Configuration to an Entity" and "Adding Additional Configuration Versions" for information about creating configurations.

Associated Resources Tab

You use the **Associated Resources** tab to view information about the parent logical device, IP resources, network nodes, grants media streams, and custom involvements of the logical device.

Subtab	Description
Parent Logical Device	Displays any associations with a parent logical device. See "Adding Parent Entities" for information about creating new associations.
IP Resources	Lists IP subnets assigned to the logical device. Click **Assign** to assign a new IP subnet.
Network Nodes	Displays networks nodes that represent the logical device. The name of the network is included for each node as a link to its Summary page.
Grants Media Streams	Displays any media streams with which the logical device is associated. See "Working with Media Streams " for more information.
Custom Involvements	Displays any custom associations defined for the logical device with entities that are not otherwise associated. See "Working with Custom Involvements" for more information.

Consumers Tab

You use the **Consumers** tab to view information about assignments, references, and business interactions of the logical device.

Section	Description
Assignments	Lists the configurations to which the logical device has been assigned. For each assignment, you can see the entity to which the assignment has been made, that entity's type, and the start and end dates. You can also unassign a service configuration, but only if it has been completed. If a service configuration is in progress, it is ignored.

Section	Description
References	Lists the configurations to which the logical device has been referenced. For each assignment, you can see the entity to which the assignment has been made, that entity's type, and the start and end dates. You can also derefer service configuration (such as networks, pipes or places) but only if it has been completed. If a service configuration is in progress, it is ignored.
Business Interactions	Displays any business interactions with which the logical device is associated. See "Working with Business Interactions" for more information.

Groups and Infrastructure Tab

You use the **Groups and Infrastructure** tab to view information about the inventory groups, roles, and places associated with the logical device.

Section	Description
Inventory Groups	Displays any inventory groups to which the logical device is associated. You use the inventory groups to organize entities for a particular purpose. The fields that appear in the Inventory Group section are common among multiple entities. See "Entity Summary Page" for more information. See "Working with Inventory Groups" for information about associating entities with an inventory group.
Roles	Displays any roles that are associated with the logical device. You can associate roles with entities to define the functions they perform in your inventory. An entity can have multiple roles simultaneously, and its roles can change over time. See "Working with Roles" for more information.
Places	Displays any places that are associated with the logical device. The fields that appear in the Places section are common among multiple entities. See "Entity Summary Page" for more information. See "Associating Places to Entities" and for information about creating new place associations.

Logical Device - Clone Page

You use the Logical Device - Clone page to select options when cloning logical devices.

Section	Description
Existing Logical Device Information	Displays identifying information about the logical device being cloned.
Cloned Name Labels	In the **Logical Device Name** and **Physical Device Name** fields, enter names to be used for devices created as part of the cloning operation. In the **Equipment Name Prefix** field, enter a prefix for Equipment entities created as part of the cloning operation. If you leave these fields empty, the original names are used for the newly created entities.

Section	Description
Location for Cloned Logical Device	Search for and enter a different property location for the new logical device. If you do not specify a different property location, the new logical device is created at the same property location as the original logical device.
Existing Logical Device Hierarchy	Displays the hierarchy of the logical device being cloned. You can exclude specific logical devices and device interfaces from cloning by de-selecting them in the hierarchy. De-selecting a parent logical device in the hierarchy automatically de-selects its children.
Mapped Physical Device Hierarchy	Displays mapped physical devices and associated equipment for the logical device currently selected in the Existing Logical Device Hierarchy section. Physical devices and equipment in the hierarchy are selected unless the corresponding logical device or device interface is de-selected in the Logical Device Hierarchy section. You can exclude specific physical devices and equipment from cloning by de-selecting them in the hierarchy. De-selecting a parent in the hierarchy automatically de-selects its children.

Related Topics

Cloning Logical Devices

Device Interface - Information Page

You use the Device Interface - Information page to edit the information that appears in the Summary page Information section. Some data elements, such as the ID, cannot be changed after the entity is created.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Displays the specification used to define the device interface. This field is read only.
ID	Displays the ID generated or entered when the entity was created. This field is read only.
Name	Edit the name of the device interface.
Description	Edit the description of the device interface.
Interface Number	Edit the interface number.
Vendor Interface Number	Edit the vendor interface number.
Customer Interface Number	Edit the customer interface number.
Rate Code	Displays the rate code defined by the specification used for this device interface.
Bit Rate	Displays the bit rate associated with the rate code.

Field	Description
Inventory Status	Displays the stage in the life cycle of the device. interface This field is read only. See *UIM Concepts* for more information about inventory statuses.
Assignment Status	Displays the stage in the life cycle of a specific assignment of the device interface to another entity. This field is read only. See *UIM Concepts* for more information about assignment statuses.

Related Topics

Device Interface Summary Page

Creating Entities

Searching for Entities

Device Interface - Bulk Edit Page

You use the Device Interface - Bulk Edit page to edit the characteristics of one or more Device Interface entities. To enable this option, you must do the following:

- Select a specification in the device interface search.
- Be in the current or live business interaction context.
- In the Search Results section, select one or more entities.
- Then, select the **Bulk Edit** option, which opens the Device Interface - Bulk Edit page.

To bulk edit the characteristics of Device Interface entities:

1. In the Device Interface - Bulk Edit page, click the **Add Fields** button to select the characteristics fields to display.

   The Add Fields page appears.

2. Use the arrow buttons to move fields from the available fields to the selected fields column to select the fields to display and edit. You can also move fields from the selected fields column back to available fields. Click **OK**.

   > **Note:**
   >
   > If there are no characteristics for the selected specification, the page columns appear empty. In this case, you need to add characteristics to the specification. See *UIM Concepts* for information on characteristics.

   The selected characteristics appear in the bulk edit page.

3. Enter values in the relevant fields for the characteristics.
4. Click **Save And Close**.

   The following confirmation message is displayed:

   ```
   You are about to update all the selected entities of specification
   specificationName. The following characteristics values will be updated.
   ```

```
characteristic1
characteristic2
.
.
characteristicN

Do you want to proceed?
```

5. Click **Yes**.

   The characteristics with set field values are added to all selected entities.

Related Topics

Creating Entities

Device Interface Summary Page

You use the Device Interface Summary page to define the content for a Device Interface entity. The page is arranged into several tabs, each of which is used for a different purpose:

- General Information Tab
- Associated Resources Tab
- Consumers Tab
- Groups and Infrastructure Tab

See the following topics for more information about summary pages:

- Related Pages Menu
- Actions Menu

See "Entity Summary Page" for information about Summary page fields that are common among all entities.

Related Topics

Working with Logical Device Entities and Logical Device Configurations

Searching for Entities

General Information Tab

You use the **General Information** tab to view and edit basic information about the device interface, to view the logical devices with which the device interface is associate, and to view and maintain the device interface hierarchy.

Section	Description
Device Interface Information	Displays basic information about the entity, most of which was defined when you created the entity. Click **Edit** to change this information. Some data elements, such as the ID, cannot be changed after the entity is created. See "Creating Entities " and "Working with Device Interfaces" for more information.
Logical Device	Displays the name of the logical device to which the device interface is associated. The name is formatted as a link that you can use to open the Summary page for the logical device. See "Adding Device Interfaces to Logical Devices" for more information.

Section	Description
Device Interface Hierarchy	Displays the entities included in the device interface hierarchy. Right-click a device interface and do one of the following: • Select **Create Sub Device Interface** add sub-device interfaces to device interfaces. See "Adding Sub-Device Interfaces to Device Interfaces" for more information. • Select a sub-device interface and select **Delete** to remove the interface association.
Capacity Consumed	Displays the capacity consumed by the device interface.

Associated Resources Tab

You use the **Associated Resources** tab to view information about the IP resources, network nodes, and custom involvements of the device interface.

Section	Description
IP Resources	Lists IP subnets assigned to the device interface. Click **Assign** to assign a new IP subnet.
Network Nodes	Displays any network nodes that represent the device interface. See "Representing Resources with Nodes" for more information.
Custom Involvements	Displays any custom associations defined for the device interface with entities that are not otherwise associated. See "Working with Custom Involvements" for more information.

Consumers Tab

You use the **Consumers** tab to view any business interactions with which the device interface is associated. See "Working with Business Interactions" for more information.

Groups and Infrastructure Tab

You use the **Groups and Infrastructure** tab to view information about the roles and places associated with the device interface.

Section	Description
Places	Displays any places that are associated with the device interface. The fields that appear in the Places section are common among multiple entities. See "Entity Summary Page" for more information. See "Associating Places to Entities" and for information about creating new place associations.
Roles	Displays any roles that are associated with the device interface. You can associate roles with entities to define the functions they perform in your inventory. An entity can have multiple roles simultaneously, and its roles can change over time. See "Working with Roles" for more information.

Logical Device Configuration Information - New Version Page

You use the Logical Device Configuration Information - New Version page to create new logical device configurations.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Select a Logical Device Configuration specification to use for the new configuration version. See *UIM Concepts* for more information about configuration specifications.
ID	Enter a unique ID for the configuration or accept the default. The default value is based on the ID of the parent logical device with an incremented version number.
Name	Enter a name for the configuration or accept the default. The default value is based on the name of the parent logical device with an incremented version number.
Previous Configuration	Displays the version number of the previous configuration, if any. If you are creating the first configuration version, this value is **0**.
Version	Displays the sequential version number of the configuration you are creating.
Start Date	Enter the date on which the configuration will become active.

Related Topics

Working with Logical Device Configurations

Logical Device Configuration Information Page

You use the Logical Device Configuration Information page to modify a logical device configuration. This page is available only before the configuration is completed or canceled.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Displays the name of the specification used to create the configuration. See *UIM Concepts* for more information about configuration specifications.
ID	Modify the ID for the configuration. The default value is based on the ID of the parent logical device with an incremented version number.
Name	Modify the name of the configuration. The default value is the same as the ID.
Previous Configuration	Displays the version number of the previous configuration, if any. If you are creating the first configuration version, this value is **0**.
Version	Displays the sequential version number of the configuration you are creating.
Start Date	Modify the date on which the configuration will become active.

Related Topics

Working with Logical Device Configurations

Logical Device Configuration Page

You use the Logical Device Configuration page to define configuration items, to which you can assign resources.

See the following topics for more information about summary pages:

- Related Pages Menu
- Actions Menu

Field	Description
Information	Displays basic information about the configuration, most of which was defined when you created the entity. Click **Edit** to change this information. Some data elements, such as the ID, cannot be changed after the configuration is created. The **Edit** button is available only before the configuration is completed or canceled.
Configuration Items	Displays configuration items associated with the configuration. See "Working with Configuration Items" for information about adding new configuration items.

Related Topics

Working with Logical Device Entities and Logical Device Configurations

Working with Entity Configurations

Working with Logical Device Accounts

You use the Logical Device Account entities to represent accounts that are hosted by logical devices. Examples of logical device accounts include email accounts and RADIUS AAA accounts. Because similar logical device accounts frequently exist in large numbers on the same logical device, you can create ranges of accounts simultaneously.

You can associate a logical device account to a logical device either at the time that you create the account or later. The associations you can make depend on whether the specifications for the logical device and logical device account include specification relationships. If relationships exist, then you can make associations only based on the related specifications. If no relationships exist, then you make an association with any logical device.

In addition to working from the point of view of the logical device account, you can associate accounts from Logical Device Summary pages. See "Associating Logical Device Accounts with Logical Devices".

Logical device account entities include many of the same features as other entity types. You can include them in custom involvements, reservations, business interactions, and inventory groups. You can also assign conditions to them. In addition, you can associate places with them and manage their life cycles.

See the following topics for more information about working with logical device accounts:

- Creating Ranges of Logical Device Accounts
- Adding or Changing Device Associations for Existing Accounts

Working with Logical Device Account Configurations

You can create configurations for Logical Device Account entities. Configurations enable you to create new versions as a device evolves over time. Logical device account configurations can include configuration items to which you can assign the following types of resources:

- Custom network addresses
- Telephone numbers

Logical device account configurations have the same features and functionality as other configurations. See "Working with Entity Configurations" for more information about using configurations.

Creating Ranges of Logical Device Accounts

You can create ranges of logical device accounts simultaneously. For example, you can create a number of email accounts.

When you create a range of logical device accounts whose specification includes autogeneration of IDs, you specify the quantity of entities to create. If the Equipment specification requires manual entry of IDs, you must specify a starting ID and a quantity. The accounts created are identical aside from their IDs

To create a range of Logical Device Account entities:

1. In the **Inventory - Resources** group of the navigation section, click **Logical Device Accounts**.

   The Logical Device Account Range Search page appears.

2. In the Search Results section, click **Create Range**.

   The Logical Device Account Range page appears.

3. In the **Specification** list, select the Logical Device Account specification you want to use for the accounts you create.

4. In the **Starting ID** field, enter the first ID to use for the entities. This is required only if the Equipment specification does not include ID autogeneration.

The ID must be numeric so that it can be incremented.

5. In the **Quantity** field, enter the number of logical device accounts to be created.
6. (Optional) In the **Logical Device ID** field, enter an ID.

   You can enter a logical device ID if you want the accounts to be associated with a logical device. Click the **Search** link next to the field to search for a device ID.
7. (Optional) In the **Inventory Group** list, select a group to which to add the account.
8. Click **Save and Close**.
9. Click **Search**.

   The new account appears in a Search Results section.

Related Topics

Adding or Changing Device Associations for Existing Accounts

Working with Logical Device Accounts

Logical Device Account Range - New

You use the Logical Device Account Range - New page to create a range of new Logical Device entities.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Select a Logical Device Account specification on which to base a range of Logical Device Account entities. You use the Logical Device Account entities to represent accounts that are hosted by logical devices. See *UIM Concepts* for more information about logical device accounts.
Starting ID	Enter a starting ID. The ID must be numeric so that it can be incremented. This field is available only if the selected specification requires manual ID entry.
Quantity	Enter the number of Logical Device Account entities to be created.
Logical Device	Enter or search for a logical device with which the logical device accounts will be associated.
Inventory Group	Enter or search for an inventory group with which the logical device accounts will be associated.

Related Topics

Creating Ranges of Logical Device Accounts

Adding or Changing Device Associations for Existing Accounts

After a logical device account has been created, you can associate it to a device or change an existing association. A logical device account association can also be made or changed from the Summary page of the logical device.

To add or change a logical device account association:

1. Open the Logical Device Account Summary page.

   If the account is already associated to a device, the device's name and ID are displayed in the Logical Device Account Information section.

2. On the **General Information** tab, in the Logical Device Account Information section, click **Edit**.

   The Logical Device Account Information page appears.

3. In the **Logical Device ID** field, enter or change the device's ID.

   If you do not know the new ID, click the **Search** link next to the field and search for the device.

   The Logical Device Search page appears. Search for the device or create a new device. See "Searching for Entities" and "Creating Entities " for more information.

4. Click **Save and Close**.

   UIM changes the association and redisplays the Logical Device Account Summary page, now including the new device ID.

Related Topics

Creating Ranges of Logical Device Accounts

Working with Logical Device Accounts

Logical Device Accounts - New Page

You use the Logical Device Accounts - New page to create new logical device accounts.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Select a Logical Device Account specification to use for the accounts you create. You use the Logical Device Account entities to represent accounts that are hosted by logical devices. See *UIM Concepts* for more information about logical device accounts.

Field	Description
ID	If the entity specification requires a manually entered ID, enter a unique ID for the entity. Most entity specifications are defined in Design Studio so that IDs are generated automatically. The **ID** field for these specifications contains the text AUTOGENERATE.
Name	Enter a name for the logical device account.
Description	Enter a description of the logical device account.
Inventory Status	Displays the stage in the life cycle of the logical device account. This field is read only. See *UIM Concepts* for more information about inventory statuses.
Assignment Status	Displays the life cycle status of the assignment of the logical device account to another entity. This field is read only. See *UIM Concepts* for more information about assignment statuses.
Logical Device ID	(Optional) Enter an ID to associate the account with a logical device. Click Search to locate a specific ID.
Logical Device Name	Displays the name of an associated logical device. This field is automatically populated after you enter a value in **Logical Device ID**.

Related Topics

Logical Device Accounts - New Page

Creating Ranges of Logical Device Accounts

Logical Device Account Range - New

Logical Device Accounts- Information Page

You use the Logical Device Accounts - Information page to edit the information that appears in the Summary page Information section. Some data elements, such as the ID, cannot be changed after the entity is created.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Displays the specification used to define the logical device account. This field is read only.
ID	Displays the ID generated or entered when the entity was created. This field is read only.
Name	Edit the name of the logical device account.
Description	Edit the description of the logical device account.

Field	Description
Inventory Status	Displays the stage in the life cycle of the logical device account. This field is read only. See *UIM Concepts* for more information about inventory statuses.
Assignment Status	Displays the stage in the life cycle of a specific assignment of the logical device account to another entity. This field is read only. See *UIM Concepts* for more information about assignment statuses.
Logical Device ID	Edit the ID to associate the account with a logical device. Click Search to locate a specific ID.
Logical Device Name	Displays the name of an associated logical device. This field is read only.

Related Topics

Logical Device Accounts - New Page

Creating Ranges of Logical Device Accounts

Logical Device Account Range - New

Logical Device Account Summary Page

You use the Logical Device Account Summary page to define the content for a Logical Device Account entity. The page is arranged into several tabs, each of which is used for a different purpose:

- General Information Tab
- Configurations Tab
- Associated Resources Tab
- Consumers Tab
- Groups and Infrastructure Tab

See the following topics for more information about summary pages:

- Related Pages Menu
- Actions Menu

See "Entity Summary Page" for information about Summary page fields that are common among all entities.

Related Topics

Working with Logical Device Accounts

Logical Device Account Range - New

General Information Tab

You use the **General Information** tab to view and edit basic information about the entity, most of which was defined when you created the entity. Click **Edit** to change this information. Some data elements, such as the ID, cannot be changed after the entity is created. See "Logical Device - Information Page" for more information.

Configurations Tab

You use the **Configurations** tab to view any configurations created for the logical device account. You create configurations for Logical Device Account entities to create new versions as a device evolves over time. This tab displays the version, ID, name, specification, status, start and end dates of the configuration.

This tab is available only when the specification on which the logical device is based includes a reference to a Logical Device Account Configuration specification.

The fields that appear in the Configurations section are common among multiple entities. See "Entity Summary Page" for more information. See "Adding the First Version of a Configuration to an Entity" and "Adding Additional Configuration Versions" for information about creating configurations.

Associated Resources Tab

You use the **Associated Resources** tab to view any custom associations defined for the logical device account with entities that are not otherwise associated. See "Working with Custom Involvements" for more information.

Consumers Tab

You use the **Consumers** tab to view any business interactions with which the logical device account is associated. See "Working with Business Interactions" for more information.

You can view any assignments and references of any service configurations associated with the logical account from the **Consumers** tab. These service configurations can also be unassigned and dereferred directly by clicking on the **Unassign** and **Derefer** option. However, the service configurations can only be unassigned or dereferred only if they are completed. If a service configuration is in progress, it is ignored.

Groups and Infrastructure Tab

You use the **Groups and Infrastructure** tab to view information about the places and inventory groups associated with the logical device account.

Section	Description
Places	Displays any places that are associated with the logical device account. The fields that appear in the Places section are common among multiple entities. See "Entity Summary Page" for more information. See "Associating Places to Entities" and for information about creating new place associations.
Inventory Groups	Displays any inventory groups to which the logical device account is associated. You use the inventory groups to organize entities for a particular purpose. The fields that appear in the Inventory Group section are common among multiple entities. See "Entity Summary Page" for more information. See "Working with Inventory Groups" for information about associating entities with an inventory group.

Logical Device Account Configuration Information - New Version Page

You use the Logical Device Account Configuration Information - New Version page to create new logical device account configurations.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Select a Logical Device Account Configuration specification to use for the new configuration version. See *UIM Concepts* for more information about configuration specifications.
ID	Enter a unique ID for the configuration or accept the default. The default value is based on the ID of the parent logical device account with an incremented version number.
Name	Enter a name for the configuration or accept the default. The default value is based on the name of the parent logical device account with an incremented version number.
Previous Configuration	Displays the version number of the previous configuration, if any. If you are creating the first configuration version, this value is **0**.
Version	Displays the sequential version number of the configuration you are creating.
Start Date	Enter the date on which the configuration will become active.
End Date	Enter the date on which the configuration will become inactive.

Related Topics

Working with Logical Device Account Configurations

Logical Device Account Configuration Information Page

You use the Logical Device Account Configuration Information page to modify a logical device account configuration. This page is available only before the configuration is completed or canceled.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Displays the name of the specification used to create the configuration. See *UIM Concepts* for more information about configuration specifications.
ID	Modify the ID for the configuration. The default value is based on the ID of the parent logical device account with an incremented version number.
Name	Modify the name of the configuration. The default value is the same as the ID.
Previous Configuration	Displays the version number of the previous configuration, if any. If you are creating the first configuration version, this value is **0**.
Version	Displays the sequential version number of the configuration you are creating.
Start Date	Modify the date on which the configuration will become active.
End Date	Modify the date on which the configuration will become inactive.
LD Account	Displays a link for the parent logical device account.

Related Topics

Working with Logical Device Account Configurations

Logical Device Account Configuration Page

You use the Logical Device Account Configuration page to define configuration items, to which you can assign resources.

See the following topics for more information about summary pages:

- Related Pages Menu
- Actions Menu

Field	Description
Information	Displays basic information about the configuration, most of which was defined when you created the entity. Click **Edit** to change this information. Some data elements, such as the ID, cannot be changed after the configuration is created. The **Edit** button is available only before the configuration is completed or canceled.
Configuration Items	Displays configuration items associated with the configuration. See "Working with Configuration Items" for information about adding new configuration items.

Related Topics

Working with Logical Device Account Configurations

Working with Physical Devices

A physical device is a collection of physical resources that have a common function in the inventory. Physical device hierarchies can include other physical devices, equipment, physical ports, and physical connectors. For information about working with hierarchies, see "Working with Entity Hierarchies".

Physical devices are the counterparts of logical devices, so you can associate physical and logical devices. You can also map the ports and connectors in physical devices to the device interfaces in a logical device with which it is associated. See "Mapping Device Interfaces to Physical Ports and Connectors" for more information.

Physical Device entities share many of the same features as other entity types. You can include them in custom involvements, reservations, and inventory groups. You can also assign conditions to them. In addition, you can associate places with them and manage their life cycles.

See the following topics for more information about working with physical devices:

- Working with Ports and Connectors
- Maintaining Equipment in Physical Device Hierarchies
- Associating Physical Devices with Logical Devices
- Removing Logical Device and Physical Device Associations

Working with Ports and Connectors

A physical device can provide one or more ports or connectors. Physical ports are places where communication begins or ends on a physical device. Physical connectors are items to physically connect hardware units for signal or power transmission.

The relationships between the specification for a physical device and specifications for ports and connectors defines the types of device ports and connectors that can be added. Only ports and connectors related to the Physical Device specification can be added to the device. The relationships also define the minimum and maximum quantities that can be added.

The minimum number of ports or connectors is added automatically to a physical device when it is created. You can add additional ports or connectors up to the maximum number.

Although you can work with them only in the context of physical devices and Equipment entities, ports and connectors are themselves defined by specifications and have Summary pages. They share some of the same features as other entity types:

- You can include physical ports in custom involvements and reservations. You can also assign roles and conditions to them. In addition, you can view the networks in which a port is included.
- You can include physical connectors in custom involvements and reservations. You can also assign conditions to them.

See the following topics for more information about working with ports and connectors:

- Adding a Port or Connector to a Physical Device Hierarchy
- Viewing Information About Ports and Connectors
- Deleting a Port or Connector from a Physical Device Hierarchy
- Deleting a Physical Port

Adding a Port or Connector to a Physical Device Hierarchy

You can add ports or connectors in the Hierarchy section of a physical device's own Summary page or from the Summary page of another physical device whose hierarchy includes it. Ports and connectors you add to a child physical device in a parent device's Summary page automatically appear in the Summary page of the child device.

You can add physical jumpers to connect ports in the same Equipment entity or in different entities that share the same location.

You can add only new ports and connectors; you cannot add previously created ports or connectors.

To add a port or connector to a physical device hierarchy:

1. Open the Physical Device Summary page for a physical device whose hierarchy includes the device to which you want to add a port or connector.
2. On the **General Information** tab, in the Physical Device Hierarchy section, expand the hierarchy to reveal the device to which you want to add a port or connector.

   If you are adding a port or connector to the parent device, you do not have to expand the hierarchy.
3. Right-click a device and select **Create Port** or **Create Connector**.

   The Physical Port - New or Physical Connector - New dialog box appears.
4. In the **Specification** list, select the specification for the type of port or connector you want to create.

   If no specifications are listed, you cannot add a port or connector to the device. When you select a specification, the page refreshes to reflect the characteristics in the selected specification.
5. (Optional) Change the value of the **Quantity** field to create more than one port or connector of the same type.
6. Enter information into all required fields and any appropriate optional fields.
7. Click **Save and Close**.

   The new port or connector appears in the Physical Device Hierarchy section.

   If adding the port or connector would exceed the maximum number defined by the relationship between the Physical Device specification and the Port specification or the Connector specification, UIM displays an error message and does not add any ports or connectors.

Related Topics

Viewing Information About Ports and Connectors

Deleting a Port or Connector from a Physical Device Hierarchy

Deleting a Physical Port

Viewing Information About Ports and Connectors

For physical ports, you can view a list of networks in which the port is associated. The association occurs when you select a port to be represented by a node in the network. The same port can be represented by nodes in different networks. For each network association, you can see the network name, network description, node name, and node description.

To view port or connector information:

1. Open the Physical Device Summary page for a physical device whose hierarchy includes the device whose port or connector information you want to view.
2. On the **General Information** tab, in the Physical Device Hierarchy section, expand the hierarchy to reveal the port or connector whose information you want to view.

The ports and connectors are clickable links.

3. Click the port or connector.

   The Physical Port Summary or Physical Connector Summary page appears. For physical ports only, the Networks section includes a list of the networks with which the port is associated.

Alternatively, you can view physical port information from **Resources** > **Physical Ports** on the left navigation pane from UIM landing page. You can search physical ports directly to view their specification, assignment status, and inventory status.

To view list of physical ports:

1. In the **Inventory - Resources** group of the navigation section, click Physical Ports.

   The Physical Port search page appears.

2. The **Search** section displays search fields for the port's default characteristics.

   To change the default search criteria, click on the **Add Fields** button.

3. Enter data in the search fields and click **Search**.

   The Search Results appear in the table below.

4. Click on the port you want to view.

   The Physical Port – Information page will appear.

Related Topics

Adding a Port or Connector to a Physical Device Hierarchy

Deleting a Port or Connector from a Physical Device Hierarchy

Deleting a Physical Port

Deleting a Port or Connector from a Physical Device Hierarchy

You can delete ports and connectors from physical devices. If deleting the ports or connectors would result in the device having fewer than the number required by the relationship between the Physical Device specification and the Port or Connector specification, UIM prevents the deletion.

To delete a port or connector from a physical device hierarchy:

1. Open the Physical Device Summary page for a physical device whose hierarchy includes the device from which you want to delete a port or connector.
2. On the **General Information** tab, in the Physical Device Hierarchy section, expand the hierarchy to reveal the port or connector to delete.
3. Right-click a port or connector and select **Delete**.

   The port or connector is deleted.

> **Note:**
>
> If the port has multiple device interfaces associated, select only the required device interface you want to select as a termination point.

Related Topics

Adding a Port or Connector to a Physical Device Hierarchy

Viewing Information About Ports and Connectors

Deleting a Physical Port

Deleting a Physical Port

Alternatively, you can also delete a port directly from the UIM landing page only if the port is unassigned.

> **Note:**
>
> System throws an error when you try to delete a port that has been assigned to a connectivity/entity.

To delete a port from the UIM landing page:

1. In the **Inventory - Resources** group of the navigation section, click **Physical Ports**.

   The Physical Port search page appears.
2. Click on the **Search** button to get a list of all the physical ports.
3. Choose the port you want to delete and click on **Delete** icon at the top of the table.

   A **Delete Confirmation** window will pop-up, asking to confirm action.
4. Click on **Yes** to delete the port.

Maintaining Equipment in Physical Device Hierarchies

There are two ways of adding and removing equipment in a Physical Device Summary page:

- In the Physical Device Hierarchy section
- In the Equipment section

In addition, an Equipment entity can be associated with a physical device from the equipment's Summary page. See "Associating Equipment to Physical Devices" for more information. The relationship is the same whether it starts from the equipment or from the physical device.

Equipment entities can be included in only one physical device hierarchy. You can include an Equipment entity in a physical device hierarchy only if it or any of its parents in an equipment hierarchy is not already included in another physical device hierarchy. For example, if a shelf Equipment entity is included in a physical device hierarchy, none of the racks that it holds can be included in another physical device hierarchy.

See the following topics for more information about maintaining equipment in physical device hierarchies:

- Associating Equipment to a Physical Device Hierarchy
- Removing Equipment Associations from a Physical Device Hierarchy
- Associating Equipment to a Physical Device from the Equipment Section
- Deleting an Equipment Association from a Physical Device Equipment Section

Associating Equipment to a Physical Device Hierarchy

To associate equipment to a physical device hierarchy:

1. Open the Physical Device Summary page of a physical device that you want to associate with an Equipment entity or that includes such a device in its hierarchy.
2. On the **General Information** tab, in the Physical Device Hierarchy section, expand the hierarchy to reveal the device that you want to associate with an Equipment entity.
3. Select the device and click **Associate Equipment** on the toolbar.

   The Associate Equipment dialog box appears.
4. Search for or create an Equipment entity.
5. In the Search Results section, select an Equipment entity.
6. Click **OK**.

   The Physical Devices Hierarchy section in the Summary page refreshes to include the entity. The Equipment section is also update to reflect the new association.

Related Topics

Removing Equipment Associations from a Physical Device Hierarchy

Associating Equipment to a Physical Device from the Equipment Section

Deleting an Equipment Association from a Physical Device Equipment Section

Removing Equipment Associations from a Physical Device Hierarchy

Removing an equipment association from a physical device hierarchy does not delete the Equipment entity.

To remove an equipment association from a physical device hierarchy:

1. Open the Physical Device Summary page of the physical device from which you want to remove an Equipment entity association.
2. On the **General Information** tab, expand the hierarchy in the Physical Device Hierarchy section to display the Equipment entity association that you want to remove.
3. Select the Equipment entity association and click **Remove Equipment** in the toolbar.

   The association is removed and the link to the Equipment entity is removed from the Physical Device Hierarchy section. The Equipment section in the Summary page is also updated.

Related Topics

Associating Equipment to a Physical Device Hierarchy

Associating Equipment to a Physical Device from the Equipment Section

Deleting an Equipment Association from a Physical Device Equipment Section

Associating Equipment to a Physical Device from the Equipment Section

To associate equipment to a physical device from the Equipment section:

1. Open the Physical Device Summary page of a physical device that you want to associate with an Equipment entity.
2. Click the **Equipment** tab.
3. In the Equipment section, click **Associate**.

   The Associate Equipment dialog box appears.
4. Search for or create an Equipment entity
5. In the Search Results section, select an Equipment entity.
6. Click **OK**.

   The Equipment section in the Summary page refreshes to include the entity. The Physical Device Hierarchy also refreshes to reflect the association of the Equipment entity.

Related Topics

Deleting an Equipment Association from a Physical Device Equipment Section

Associating Equipment to a Physical Device Hierarchy

Removing Equipment Associations from a Physical Device Hierarchy

Deleting an Equipment Association from a Physical Device Equipment Section

Deleting an equipment association from a physical device hierarchy does not delete the Equipment entity.

To delete an equipment association from a physical device Equipment section:

1. Open the Physical Device Summary page of a physical device from which you want to remove an Equipment entity association.
2. Click the **Equipment** tab.
3. In the Equipment section, select the Equipment entity that you want to remove and click **Delete**.

   The Equipment entity no longer appears in the Equipment section. The Physical Device Hierarchy is also updated.

Related Topics

Associating Equipment to a Physical Device from the Equipment Section

Associating Equipment to a Physical Device Hierarchy

Removing Equipment Associations from a Physical Device Hierarchy

Associating Physical Devices to Network Locations

You can associate physical devices to network locations to specify their geographic positions.

You can associate network locations manually when you create a physical device or by editing an existing entity. Associations can also be made automatically by propagation through logical device, physical device, and equipment hierarchies. You cannot manually associate a network location to a physical device that has already been assigned one by propagation. See *UIM Concepts* for more information about the rules that govern these propagations.

To associate a physical device to a network location:

1. Open a Physical Device Summary page.
2. On the **General Information** tab, in the Physical Device Information section, click **Edit**.
3. In the **Network Location** field, enter the first few characters of a network location, then select the location you want to associate.

   The location appears in the **Network Location** field.

Related Topics

Adding Network Entity Codes to Network Locations

Associating Logical Devices to Network Locations and Network Entity Locations

Associating Equipment to Network Locations

Associating Physical Devices with Logical Devices

You can associate physical devices to logical devices from a physical device Summary page or from the Summary page of another physical device that includes it in its hierarchy. A physical device can be associated with only one logical device. In addition, child and parent physical devices cannot be associated with the same logical device. A logical device, however, can be associated with any number of physical devices.

This type of association makes possible the mapping of device interfaces provided by the logical device to ports and connectors provided by the physical device (or by equipment or physical devices in the hierarchy of the parent physical device). See "Mapping Device Interfaces to Physical Ports and Connectors" for more information.

You can also associate a physical device and a logical device from a Logical Device Summary page. The association is the same whether you start from the physical device or from the logical device.

To associate a physical device to a logical device:

1. Open the Physical Device Summary page of a physical device that you want to associate with a logical device or that includes such a device in its hierarchy.
2. On the **General Information** tab, in the Physical Device Hierarchy section, expand the hierarchy to reveal the device that you want to associate with a logical device.
3. Select the device and then click the **Associate Logical Device** in the toolbar.

   The Associate Logical Device page appears.
4. Search for or create a Logical Device entity.
5. In the Search Results section, select a Logical Device entity.
6. Click **OK**.

   The Physical Device Hierarchy section in the Summary page refreshes to include a reference to the entity.

Related Topics

Removing Logical Device and Physical Device Associations

Removing Logical Device and Physical Device Associations

You can remove a logical device association from a physical device. Removing the association removes any port or connector mappings enabled by it.

To remove a logical device association from a physical device:

1. Open the Physical Device Summary page of a physical device from which you want to unassociate a logical device.
2. On the **General Information** tab, in the Physical Device Hierarchy section, select the physical device and then click **Unassociate Logical Device** in the toolbar.

   The association is removed and the reference to the logical device is removed from the Physical Device Hierarchy section.

Related Topics

Associating Physical Devices with Logical Devices

Physical Device - New Page

You use the Physical Device - New page to create new physical devices.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Select a Physical Device specification. Physical devices are the counterpart of logical devices. They are aggregations of physical resources that can include other physical devices and equipment. The Physical Device specification can include Physical Port and Physical Connector specifications. In most cases, however, physical ports and connectors are configured with equipment and not with physical devices. See *UIM Concepts* for more information about Physical Device specifications.
ID	If the entity specification requires a manually entered ID, enter a unique ID for the entity. Most entity specifications are defined in Design Studio so that IDs are generated automatically. The **ID** field for these specifications contains the text AUTOGENERATE.
Network Location	Enter or search for a network location code. See *UIM Concepts* for more information about network location codes.
Name	Enter a name for the physical device.
Description	Enter a description of the physical device.
Inventory Status	Displays the stage in the life cycle of the physical device. This field is read only. See *UIM Concepts* for more information about inventory statuses.
Assignment Status	Displays the stage in the life cycle of a specific assignment of the physical device to another entity. This field is read only. See *UIM Concepts* for more information about assignment statuses.

Field	Description
Serial Number	Enter a serial number for the physical device.
Physical Address	Enter a physical address for the physical device.
Physical Location	Enter a physical location for the physical device.

Related Topics

Physical Device Summary Page

Creating Entities

Searching for Entities

Physical Device - Information Page

You use the Physical Device - Information page to edit the information that appears in the Summary page Information section. Some data elements, such as the ID, cannot be changed after the entity is created.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Displays the specification used to define the physical device. This field is read only.
ID	Displays the ID generated or entered when the entity was created. This field is read only.
Name	Displays the name of the physical device.
Description	Displays the description of the physical device.
Network Location	Displays the network location associated to the physical device. If no location code appears, you can enter or search for one. See *UIM Concepts* for more information about network location codes.
Inventory Status	Displays the stage in the life cycle of the physical device. This field is read only. See *UIM Concepts* for more information about inventory statuses.
Assignment Status	Displays the stage in the life cycle of a specific assignment of the physical device to another entity. This field is read only. See *UIM Concepts* for more information about assignment statuses.
Physical Address	Displays the physical address of the physical device.
Physical Location	Displays the physical location of the physical device.
Serial Number	Displays the serial number of the physical device.

Related Topics

Physical Device Summary Page

Creating Entities

Searching for Entities

Physical Device - Bulk Edit Page

You use the Physical Device - Bulk Edit page to edit the characteristics of one or more Physical Device entities. To enable this option, you must do the following:

- Select a specification in the physical device search.
- Be in the current or live business interaction context.
- In the Search Results section, select one or more entities.
- Then, select the **Bulk Edit** option, which opens the Physical Device - Bulk Edit page.

To bulk edit the characteristics of Physical Device entities:

1. In the Physical Device - Bulk Edit page, click the **Add Fields** button to select the characteristics fields to display.

   The Add Fields page appears.

2. Use the arrow buttons to move fields from the available fields to the selected fields column to select the fields to display and edit. You can also move fields from the selected fields column back to available fields. Click **OK**.

   > **Note:**
   >
   > If there are no characteristics for the selected specification, the page columns appear empty. In this case, you need to add characteristics to the specification. See *UIM Concepts* for information on characteristics.

   The selected characteristics appear in the bulk edit page.

3. Enter values in the relevant fields for the characteristics.

4. Click **Save And Close**.

   The following confirmation message is displayed:

   ```
   You are about to update all the selected entities of specification
   specificationName. The following characteristics values will be updated.

   characteristic1
   characteristic2
   .
   .
   characteristicN

   Do you want to proceed?
   ```

5. Click **Yes**.

   The characteristics with set field values are added to all selected entities.

Related Topics

Creating Entities

Physical Device Summary Page

You use the Physical Device Summary page to define the content for a Physical Device entity. You can also view the topology diagram of the physical device, using the UTIA application, by clicking **Topology**. See "Working with the Inventory Topology" for more information.

The page is arranged into several tabs, each of which is used for a different purpose:

- General Information Tab
- Associated Resources Tab
- Consumers Tab
- Groups and Infrastructure Tab

See the following topics for more information about summary pages:

- Related Pages Menu
- Actions Menu

See "Entity Summary Page" for information about Summary page fields that are common among all entities.

Related Topics

Working with Physical Devices

Searching for Entities

General Information Tab

Use the **General Information** tab to view and edit basic information about the physical device and to view and maintain the physical device hierarchy.

Section	Description
Physical Device Information	Displays basic information about the entity, most of which was defined when you created the entity. Click **Edit** to change this information. Some data elements, such as the ID, cannot be changed after the entity is created. See "Creating Entities " and "Physical Device - New Page" for more information.

Section	Description
Physical Device Hierarchy	Displays the entities included in the physical device hierarchy. Physical devices can include other physical devices, equipment, physical ports, and physical connectors. The toolbar includes buttons that enable you to maintain the hierarchy. Select an item in the hierarchy and do click the appropriate button: • Click **Associate Equipment** to include equipment in a physical device hierarchy. Click **Remove Equipment** to remove equipment associations. See "Associating Equipment to a Physical Device Hierarchy" and "Removing Equipment Associations from a Physical Device Hierarchy" for more information. • Click **Add Physical Devices** to add a child physical device to the hierarchy. Click **Remove Physical Devices** to remove physical devices from the hierarchy. • Click **Associate Logical Device** to associate a logical device. A physical device can be associated with only one logical device. Click **Unassociate Logical Device** to remove a logical device association. See "Associating Physical Devices with Logical Devices" and "Removing Logical Device and Physical Device Associations" for more information. • Click **Maintain Mappings** to map device interfaces to physical ports or connectors in associated physical and logical devices. Click **Remove Mappings** to remove mappings one at a time from individual device interfaces, ports, or connectors. See "Mapping Device Interfaces to Physical Ports and Connectors" and "Removing Mappings" for more information. You can also right-click in the hierarchy and select the following commands from the context menu: • Select **Create Port** to add physical ports to the physical device hierarchy. You can add only new ports; you cannot add previously created ports. See "Adding a Port or Connector to a Physical Device Hierarchy" for more information. • Select **Create Connector** to add physical connectors to the physical device hierarchy. You can add only new connectors; you cannot add previously created connectors. See "Adding a Port or Connector to a Physical Device Hierarchy" for more information.

Associated Resources Tab

Use the **Associated Resources** tab to view information about the parent physical device, network nodes, custom involvements, and equipment of the physical device.

Subtab	Description
Parent Physical Device	Displays any associations with a parent physical device.
Network Nodes	Displays networks nodes that represent the physical device. The name of the network is included for each node as a link to its Summary page.
Custom Involvements	Displays any custom associations defined for the physical device with entities that are not otherwise associated. See "Working with Custom Involvements" for more information.

Subtab	Description
Equipment	Displays any equipment in the physical device hierarchy. See "Associating Equipment to a Physical Device from the Equipment Section" for information about creating new associations.

Consumers Tab

Use the **Consumers** tab to view any business interactions with which the physical device is associated. See "Working with Business Interactions" for more information.

Groups and Infrastructure Tab

Use the **Groups and Infrastructure** tab to view information about the inventory groups, roles, and places associated with the physical device.

Section	Description
Inventory Groups	Displays any inventory groups to which the physical device is associated. You use the inventory groups to organize entities for a particular purpose. The fields that appear in the Inventory Group section are common among multiple entities. See "Entity Summary Page" for more information. See "Working with Inventory Groups" for information about associating entities with an inventory group.
Roles	Displays any roles that are associated with the physical device. You can associate roles with entities to define the functions they perform in your inventory. An entity can have multiple roles simultaneously, and its roles can change over time. See "Working with Roles" for more information.
Places	Displays any places that are associated with the physical device. The association can imply that the physical device is located at the place or that there is some kind of relationship between the entities. The fields that appear in the Places section are common among multiple entities. See "Entity Summary Page" for more information. See "Associating Places to Entities" and for information about creating new place associations.

Physical Port - Information Page

The General Information tab of the Physical Port Summary page has the following sections:

- Physical Port Information
- Physical Device

You use the Physical Port Information section to edit the information that appears in the Summary page Information section. Some data elements, such as the ID, cannot be changed after the entity is created.

> **Note:**
>
> The fields that appear on this section are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Displays the specification used to define the physical port. This field is read only.
ID	Displays the ID generated for the physical port. This field is read only.
Name	Edit the name of the physical port.
Description	Edit the description of the physical port.
Port Number	Edit the port number of the physical port.
Vendor Port Name	Edit the vendor port name of the physical port.
Customer Port Name	Edit the customer port name of the physical port.
Inventory Status	Displays the stage in the life cycle of the physical port. This field is read only. See *UIM Concepts* for more information about assignment statuses.
Assignment Status	Displays the stage in the life cycle of a specific assignment of the physical port to another entity. This field is read only. See *UIM Concepts* for more information about assignment statuses.
Equipment	Displays the equipment name the physical port is associated to. This field is read only. Clicking on it takes you to the corresponding Equipment Summary page.

The Physical Device Section provides details about the physical device the port is associated to.

Field	Description
Physical Device	Displays the physical device associated with the port. This field is read only.
Physical Address	Displays the address of the physical device. This field is read only.
Network Location	Displays the network location of the physical device. This field is read only.
Physical Location	Displays the location of the physical device. This field is read only.

Related Topics

Physical Port Summary Page

Working with Ports and Connectors

Physical Port Summary Page

You use the Physical Port Summary page to define the content for a physical port. The page is arranged into several tabs, each of which is used for a different purpose:

- General Information Tab

- Associated Resources Tab
- Consumers Tab
- Groups and Infrastructure Tab

See the following topics for more information about summary pages:

- Related Pages Menu
- Actions Menu

Related Topics

Working with Ports and Connectors

General Information Tab

Use the **General Information** tab to view basic information about the entity, most of which was defined when you created the entity. Click **Edit** to change this information. Some data elements, such as the ID, cannot be changed after the entity is created. See "Physical Port - Information Page" for more information.

Associated Resources Tab

Use the **Associated Resources** tab to view information about the network nodes and custom involvements of the physical port.

Section	Description
Network Nodes	Displays networks nodes that represent the physical port. The name of the network is included for each node as a link to its Summary page.
Custom Involvements	Displays any custom associations defined for the physical port with entities that are not otherwise associated. See "Working with Custom Involvements" for more information.

Consumers Tab

Use the **Consumers** tab to view any business interactions with which the physical port is associated. See "Working with Business Interactions" for more information.

Groups and Infrastructure Tab

Use the **Consumers** tab to view any roles with which the physical port is associated. See "Working with Roles" for more information.

Physical Connector - New Page

You use the Physical Connector Summary page to define the content for a physical connector.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Select a specification to use to define the new physical connector.
ID	(Optional) Enter a unique ID for the physical connector.
Name	(Optional) Enter a name for the physical connector.
Description	(Optional) Enter a description for the physical connector.
Inventory Status	Displays the stage in the life cycle of the physical connector. This field is read only. See *UIM Concepts* for more information about assignment statuses.
Assignment Status	Displays the stage in the life cycle of a specific assignment of the physical connector to another entity. This field is read only. See *UIM Concepts* for more information about assignment statuses.
Quantity	Enter the number of physical connectors to create.

Related Topics

Physical Connector Summary Page

Working with Ports and Connectors

Physical Connector - Information Page

You use the Physical Connector - Information page to edit the information that appears in the Summary page Information section. Some data elements, such as the ID, cannot be changed after the entity is created.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Displays the specification used to define the physical connector. This field is read only.
ID	Displays the ID generated for the physical connector. This field is read only.
Name	Edit the name of the physical connector.
Description	Edit the description of the physical connector.
Inventory Status	Displays the stage in the life cycle of the physical connector. This field is read only. See *UIM Concepts* for more information about assignment statuses.
Assignment Status	Displays the stage in the life cycle of a specific assignment of the physical connector to another entity. This field is read only. See *UIM Concepts* for more information about assignment statuses.

Related Topics

Physical Connector Summary Page

Working with Ports and Connectors

Physical Connector Summary Page

You use the Physical Connector Summary page to define the content for a physical connector.

See the following topics for more information about summary pages:

- Related Pages Menu
- Actions Menu

Section	Description
Physical Connector Information	Displays basic information about the entity, most of which was defined when you created the entity. Click **Edit** to change this information. Some data elements, such as the ID, cannot be changed after the entity is created. See "Physical Connector - Information Page" for more information.
Custom Involvements	Displays any custom associations defined for the physical connector with entities that are not otherwise associated. See "Working with Custom Involvements" for more information.

Related Topics

Working with Ports and Connectors

Mapping Device Interfaces to Physical Ports and Connectors

You can map device interfaces to physical ports or connectors in associated physical and logical devices. The mapping can extend to the ports and connectors of equipment that is associated to a physical device with which a logical device is associated. The mapping can be done from the Summary page of either the physical device or the logical device in the association.

You can choose to let UIM perform the mapping automatically or you can do it manually.

A device interface can be mapped to multiple ports and connectors, but a port or connector can be mapped to only one device interface.

See the following topics for more information about mapping device interfaces to physical ports and connectors:

- Automatically Mapping Device Interfaces to Ports or Connectors
- Manually Mapping Device Interfaces to Multiple Ports and Connectors
- Manually Mapping a Single Device Interface to Multiple Ports and Connectors
- Removing Mappings

Automatically Mapping Device Interfaces to Ports or Connectors

If specific interfaces do not require mapping to specific ports or connectors, you can map them automatically. UIM maps currently unmapped interfaces to currently unmapped ports or connectors based on their order in their hierarchies.

To automatically map device interfaces to ports or connectors:

1. Open a Logical Device Summary or Physical Device Summary page of a device that is associated with a logical or physical counterpart or one whose hierarchy includes such a device.
2. On the **General Information** tab, in the Logical Device Hierarchy or Physical Device Hierarchy section, select the device that includes the association, then click the **Maintain Mappings** button in the toolbar.

   The Device Mappings page appears.
3. Expand the logical device hierarchy and select the logical device that contains the interfaces you want to map.
4. In the upper-right of the Physical Device Hierarchy section, select either **Ports** or **Connectors**.
5. Expand the physical device hierarchy and select the physical device or equipment that includes the ports or connectors you want to map.

   If you select a physical device, only the ports or connectors directly provided by the device will be mapped. If you select an Equipment entity, ports or connectors provided by equipment or by equipment below it in the hierarchy will be mapped.
6. Click **Auto Map**.

   The page refreshes and the IDs of mapped interfaces and ports or connectors appear in the **Mapped To** column of the Logical Device Hierarchy or Physical Device Hierarchy sections.

Related Topics

Manually Mapping Device Interfaces to Multiple Ports and Connectors

Removing Mappings

Manually Mapping Device Interfaces to Multiple Ports and Connectors

If you do not want to map all unmapped device interfaces automatically, you can map multiple selected device interfaces to ports and connectors. By default, UIM maps interfaces with ports and connectors based on their order in their hierarchies, but you can change the order for mapping.

To manually map device interfaces to ports and connectors:

1. Open a Logical Device Summary page or a Physical Device Summary page of a device that is associated with a logical or physical counterpart.
2. On the **General Information** tab, in the Logical Device Hierarchy or Physical Device Hierarchy section, select the device that includes the association, then click the **Maintain Mappings** button in the toolbar.

   The Device Mappings page appears.

3. In the Logical Device Hierarchy section, expand the hierarchy to reveal the interfaces you want to map, then select those interfaces.

   To select all unmapped interfaces in a device, select that device in the hierarchy. Interfaces that have already been mapped include the ID of their mapped port or connector in the **Mapped To** column.

4. In the Logical Mapping Candidates section, click the down arrow.

   The device interfaces you selected are listed in the Logical Mapping Candidates section. They are ordered sequentially based on their position in the hierarchy.

5. In the upper-right of the Physical Device Hierarchy section, select either **Ports** or **Connectors**.

6. Expand the physical device hierarchy and select the physical device or equipment that includes the ports or connectors you want to map.

   If you select a physical device, only the ports or connectors directly provided by the device can be mapped. If you select an Equipment entity, ports or connectors provided by equipment or by equipment below it in the hierarchy can be mapped.

   Ports or connectors that have already been mapped include the ID of their mapped interface in the **Mapped To** column in their entry in the hierarchy.

7. Expand the physical device or equipment hierarchy and select one or more ports or connectors. To select all unmapped ports or connectors in a device, select that device in the hierarchy

8. In the Physical Mapping Candidates section, click the downward-facing arrow.

   The ports or connectors you selected are listed in the Physical Mapping Candidates section. They are ordered sequentially based on their position in the hierarchy.

9. Edit the sequence numbers in the Logical Mapping Candidates section so that the numbers of corresponding interfaces and ports or connectors match.

10. Press **Enter** after editing each number to reorder the list.

11. When the two lists are ordered so that the logical and physical mapping candidates have matching numbers, click **Save Mapping Candidates**.

    The Logical Mapping Candidates and Physical Mapping Candidates sections are cleared. The IDs of mapped interfaces and ports or connectors appear in the **Mapped To** column in the Logical Device Hierarchy and Physical Device Hierarchy sections.

Related Topics

Automatically Mapping Device Interfaces to Ports or Connectors

Manually Mapping a Single Device Interface to Multiple Ports and Connectors

Removing Mappings

Manually Mapping a Single Device Interface to Multiple Ports and Connectors

You can manually map a specific device interface in a logical device hierarchy to one or more ports or connectors in an associated physical device hierarchy.

To manually map a device interface to ports and connectors:

1. Open a Logical Device Summary page or a Physical Device Summary page of a device that is associated with a logical or physical counterpart.

2. On the **General Information** tab, in the Logical Device Hierarchy or Physical Device Hierarchy section, select the device that includes the association, then click the **Maintain Mappings** button in the toolbar.

   The Device Mappings page appears.

3. In the Logical Device Hierarchy section, expand the hierarchy and select a device interface. Device interfaces that have already been mapped include either the ID of a port or connector or a link that lists the number of ports and connectors in the **Mapped To** column.

4. In the Logical Mapping Candidates section, click the down arrow.

   The selected device interface appears in the Logical Mapping Candidates section.

5. In the upper-right of the Physical Device Hierarchy section, select either **Ports** or **Connectors**.

6. Expand the physical device hierarchy and select the physical device or equipment that includes the ports or connectors you want to map.

   If you select a physical device, only the ports or connectors directly provided by the device can be mapped. If you select an Equipment entity, ports or connectors provided by equipment or by equipment below it in the hierarchy can be mapped.

   Ports or connectors that have already been mapped include the ID of their mapped interface in the **Mapped To** column in their entry in the hierarchy.

7. Expand the physical device or equipment hierarchy and select one or more ports or connectors. To select all unmapped ports or connectors in a device, select that device in the hierarchy

8. In the Physical Mapping Candidates section, click the downward-facing arrow.

   The ports or connectors you selected are listed in the Physical Mapping Candidates section. They are ordered sequentially based on their position in the hierarchy.

9. Click **Save Mapping Candidates**.

   The Logical Mapping Candidates and Physical Mapping Candidates sections are cleared. Information about the mapping appears in the **Mapped To** column in the Logical Device Hierarchy and Physical Device Hierarchy sections.

Related Topics

Manually Mapping Device Interfaces to Multiple Ports and Connectors

Automatically Mapping Device Interfaces to Ports or Connectors

Removing Mappings

Manually Mapping Multiple Device Interfaces to a Single Physical Port

To map multiple device interfaces to a single physical port:

1. Open a Physical Device summary page of a device that is associated with a logical counterpart.

2. On the **General Information** tab, in the Physical Device Hierarchy section, select the device that includes the association, then click the **Maintain Mappings** button in the toolbar.

   The Device Mappings page appears.

3. In the Logical Device Hierarchy section, expand the hierarchy and select the device interfaces you want to map. Device interfaces that have already been mapped include either the ID of a port or connector or a link that lists the number of ports and connectors in the **Mapped To** column.
4. In the Logical Mapping Candidates section, click the down arrow.

   The selected device interfaces appears in the Logical Mapping Candidates section.
5. In the upper-right of the Physical Device Hierarchy section, select a **Port** or a **Connector**.
6. Expand the physical device or equipment hierarchy and select a port or a connector.
7. In the Physical Mapping Candidates section, click the downward-facing arrow.

   The port or the connector you selected is listed in the Physical Mapping Candidates section.
8. Click **Save Mapping Candidates**.

   The Logical Mapping Candidates and Physical Mapping Candidates sections are cleared. Information about the mapping appears in the **Mapped To** column in the Logical Device Hierarchy and Physical Device Hierarchy sections.

Removing Mappings

You can remove mappings one at a time from individual device interfaces, ports, or connectors. You can also remove mappings for groups of interfaces, ports, or connectors.

See the following topics for more information about removing device interface mappings:

- Removing Individual Mappings
- Removing Mappings for a Logical or Physical Device

Removing Individual Mappings

You can remove the mapping for an individual device interface, port, or connector. An interface, port, or connector that is mapped displays the ID of its counterpart in the **Mapped To** column in the Logical Device Hierarchy section or the Physical Device Hierarchy section.

To remove an individual mapping:

1. Open a Logical Device Summary page or a Physical Device Summary page of a device that is associated with a logical or physical counterpart.
2. On the **General Information** tab, expand the logical device hierarchy or physical device hierarchy to display the interface, port, or connector whose mapping you want to remove.
3. Select the interface, port, or connector and then click the **Remove Mappings** button in the toolbar.

   The mappings are removed. The ID of the mapped interface, port, or connector no longer appears in the **Mapped To** column

Related Topics

Removing Mappings for a Logical or Physical Device

Removing Mappings for a Logical or Physical Device

You can remove some or all of the mappings of the interfaces, ports, or connectors in a physical or logical device and its children.

To remove device interface mappings for a logical or physical device:

1. Open a Logical Device Summary page or a Physical Device Summary page of a device that is associated with a logical or physical counterpart.
2. On the **General Information** tab, in the Logical Device Hierarchy section or the Physical Device Hierarchy section, expand the hierarchy to display the device or equipment whose mappings you want to remove.

   To remove mappings from more than one device, display a device that is a parent to all of those devices.
3. Select the interface, port, or connector and then click the **Remove Mappings** button in the toolbar.

   The Associated Mappings dialog box appears, listing all the interfaces, ports, or connectors that have mappings.
4. Select the interfaces, ports, or connectors whose mappings you want to remove and click **Remove**.

   The mappings are removed. The IDs of the mapped interfaces, ports, or connectors no longer appear in the **Mapped To** column.

Related Topics

Removing Individual Mappings

Adding Physical Jumpers Between Device Interfaces

You can add physical jumpers that interconnect device interfaces provided by a single logical device or among device interfaces provided by different logical devices. Physical jumpers represent physical connections such as twisted pair jumpers, fiber patches, or coax patch cables. They participate in the end-to-end connectivity of pipes and channelized connectivities.

Physical jumpers can connect only media interfaces (the highest level in a device interface hierarchy). The interfaces are not required to have rate codes, but if they both do, the rate codes must match or be compatible.

See *UIM Concepts* for more information about physical jumpers.

To add a physical jumper between device interfaces:

1. In a Logical Device Summary page, select **Physical Jumper** from the **Related Pages** menu.

   The **Physical Jumper** page appears. The page includes a canvas in which the logical device is represented by an icon.
2. Click the asterisk in the logical device icon.

   The icon is replaced with a box that shows the top-level device interfaces provided by the device.
3. Do one of the following:

   For a physical jumper between interfaces on the same device:

   a. Click a device interface icon.

   b. Ctrl-click another device interface icon.

   For a physical jumper between interfaces on different devices:

   a. Click the **Select Device Interfaces** button in the toolbar.

The Associate Device Interface dialog box appears.

b. Search for and select a device interface, then click **OK**.

The dialog box closes and an icon for the logical device that provides the selected interface appears in the visualization.

c. Click the asterisk in the new logical device icon.

The icon is replaced with a box that shows the interface you selected.

d. Click a device interface in one logical device.

e. Ctrl-click a device interface in the other logical device.

4. Click the **Create Physical Jumper** button in the toolbar.

If both interfaces have a rate code, UIM validates them. It then creates a physical jumper between them. A line connects the device interfaces. When unexpanded logical device icons are displayed, a line connects their icons.

Related Topic

Adding Physical Jumpers Between Ports

Adding Physical Jumpers Between Ports

You can add physical jumpers that interconnect ports provided by Equipment or Physical Device entities. The ports can be on the same physical device or equipment or on physical devices and equipment at the same location. Physical jumpers represent physical connections such as wire or fiber optic cables. They participate in the end-to-end connectivity of pipes and channelized connectivities.

If the ports are mapped to device interfaces and both device interfaces have a rate code, the rate codes must match or be compatible.

See *UIM Concepts* for more information about physical jumpers.

To add a physical jumper between ports:

1. In a Physical Device or Equipment Summary page, select **Physical Jumper** from the **Related Pages** menu.

The **Physical Jumper** page appears. The page includes a visualization canvas in which the physical device or equipment is represented by an icon.

2. Click the asterisk in the physical device or equipment icon.

The icon is replaced with a box that shows the ports provided by the device or equipment.

3. Do one of the following:

For a physical jumper between ports on the same device or equipment:

a. Click a port icon.

b. Ctrl-click another port icon.

For a physical jumper between interfaces on different devices or equipment:

a. Click the **Select Ports** button in the toolbar.

The Associate Port dialog box appears.

b. Search for and select a port, then click **OK**.

The dialog box closes and an icon for the physical device or equipment that provides the selected port appears in the visualization.

c. Click the asterisk in the new physical device or equipment icon.

   The icon is replaced with a box that shows the port you selected.

d. Click a port in one physical device or equipment.

e. Ctrl-click a port in the other physical device or equipment

4. Click the **Create Physical Jumper** button in the toolbar.

   UIM a physical jumper between the ports and displays a line between them in the visualization. When unexpanded icons are displayed, a line connects their icons.

Related Topic

Adding Physical Jumpers Between Device Interfaces

Physical Jumper Page

You use the Physical Jumper page to add physical jumpers between ports (for Equipment and Physical Device entities) and between device interfaces (for Logical Device entities).

The Physical Jumper page includes a canvas and a toolbar with a number of icons, many shared with other visualizations.

Toolbar Icon	Description
Select	Click this button, then select elements in the canvas. Ctrl-click to select additional elements.
Zoom	Click this button, then drag out an area to zoom in on.
Pan	Click to move within the canvas When you click the **Pan** button, the cursor changes to a hand and enables you to drag the diagram to display a different area.
Show All	Click to refresh the canvas to the zoom level required to show all elements.
Zoom In	Click to enlarge the display on the current center point.
Zoom Out	Click to reduce the size of the display on the current center point.
Select Device Interfaces	(When opened from Logical Device Summary pages.) Click to search for and select device interfaces to add to the canvas.
Select Ports	(When opened from Physical Device and Equipment Summary pages.) Click to search for and select ports to add to the visualization.
Delete Physical Jumper	Click to delete the selected physical jumper.
Create Physical Jumper	Click to create a physical jumper between two selected interfaces.

The Overview section to the right of the page enables you see the entire canvas at a glance. The Details section enables you get information about selected elements. See "Using the Overview Section" and "Getting Information About Elements" for more information.

Related Topics

Adding Physical Jumpers Between Device Interfaces

Adding Physical Jumpers Between Ports

10

Working with Places and Property Locations

In Oracle Communications Unified Inventory Management (UIM), Place and Property Location entities represent the and geographic dimensions of your inventory. Place entities describe where your inventory is located. Property Location entities represent specific locations where connectivity is hosted or where services are delivered.

See the following topics for more information about working with Place and Property Location entities:

- Working with Places and Place Configurations
- Working with Property Locations

Working with Places and Place Configurations

Place entities and Place configurations represent items that can be located on a map, such as states, cities, streets, postal addresses, campuses, or buildings.

You can associate other inventory entities (such as subscribers, services, equipment, service terminations, and so on) to Place entities. This association can imply that the entity is located at the place or that there is some kind of relationship between the entities. You can use roles to specify the nature of the relationship. See "Working with Roles" for more information about roles.

See the following topics for more information about working with Place entities and Place configurations:

- About Place Entities
- Associating Places to Entities
- Removing Place Associations

About Place Entities

There are four types of Place entities. The type is determined by the entity's specification.

- Locations are defined by geographic references.
- Addresses are defined by textual information.
- Address ranges represent groups of addresses that are created as a block, such as a range of street addresses.
- Sites represent places that do not have a single, precise location. Sites can have configurations. See "Working with Entity Configurations" for more information.

When you create a Place entity, you can specify its geographic coordinates. These coordinates are required if the place (or a network node associated with it) is to appear on a network map. See "Using the Map View" for more information.

You can use one of these two formats:

- The universal geographic coordinate system based on latitude and longitude.

- The North American V & H (vertical and horizontal) coordinate system.

See *UIM Concepts* for more information about geographic coordinates.

You can associate Place entities to other entities to define those entities' geographic locations. For example, you can associate a place with a service to specify the location where the service is delivered. See "Associating Places to Entities" for more information.

You can assign roles to Place entities. For example, you could assign the role of Headquarters to a site.

Places entities can include hierarchies of other places. For example, there could be a Location entity called State that includes a hierarchy of counties and cities. Place hierarchies can also include Property Location entities. For example, the hierarchy of a Place entity that a represents a city could include all the property locations in that city.

Places are topology-enabled, so you can search for them in the topology diagram using the UTIA application. See "Working with the Inventory Topology" for more information.

Associating Places to Entities

You can associate places to entities to locate them geographically. The location can be very precise, as with an address, or more general, as with a site.

To associate a place to an entity:

1. Open the Summary page of an entity.
2. Click the **Groups and Infrastructure** tab.
3. In the Places section, click **Associate**.

   The Associate Place dialog box appears.
4. Search for or create a Place entity.
5. In the Search Results section, select a Place entity.
6. Click **OK**.

   The Places section in the Summary page refreshes to include the entity.
7. (Optional) In the Places section **Role** list, select a role that describes the association of the original entity and the place. For Service entities, you can create a new role if necessary.

   The **Role** field is empty if no roles are valid for this association.

Related Topics

About Place Entities

Removing Place Associations

Creating a Role While Associating a Place to a Service

Removing Place Associations

To remove a place association:

1. Open the Summary page of the entity from which you want to remove a place association.
2. Click the **Groups and Infrastructure** tab.
3. In the Places section, select the place to delete and click **Delete**.

The place is removed from the list.

Related Topics

About Place Entities

Associating Places to Entities

Place - New Page

You use the Place - New page to create new Place entities.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Place Type	Select the type of Place entity to create (**Location**, **Address**, **Address Range**, or **Site**). This selection here determines which values are available in the **Specifications** field. See "About Place Entities" for more information about Place entity types.
Specification	Select a Place specification. The types of specifications that appear as valid values are determined by the **Place Type** you select.
ID	If the entity specification requires a manually entered ID, enter a unique ID for the entity. Most entity specifications are defined in Design Studio so that IDs are generated automatically. The **ID** field for these specifications contains the text AUTOGENERATE.
Name	Enter a name for the place.
Description	Enter a description of the place.
Latitude	Enter a value between -90.0 and 90.0 decimal degrees. Latitude and longitude are required are required if the place (or a network node associated with it) is to appear on a network map. See "Using the Map View" for more information.
Longitude	Enter a value between -180.0 and 180.0 decimal degrees. Latitude and longitude are required if the place (or a network node associated with it) is to appear on a network map. See "Using the Map View" for more information.
Vertical	Enter a North American V & H system vertical coordinate with a positive or negative numeric value.
Horizontal	Enter a North American V & H system horizontal coordinate with a positive or negative numeric value.

Related Topics

Creating Entities

Place Summary Page

Working with Places and Place Configurations

Place - Information Page

You use the Place - Information page to edit the information that appears in the Summary page Information section. Some data elements, such as the ID, cannot be changed after the entity is created.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Place Type	Displays the type of Place entity—**Location**, **Address**, **Address Range**, or **Site**. This field is read only. See "About Place Entities" for more information about Place entity types.
Specification	Displays the specification used to define the place. This field is read only.
ID	Displays the ID generated or entered when the entity was created. This field is read only.
Name	Edit the name for the place.
Description	Edit the description of the place.
Latitude	Enter a value between -90.0 and 90.0 decimal degrees. Latitude and longitude are required if the place (or a network node associated with it) is to appear on a network map. See "Using the Map View" for more information.
Longitude	Enter a value between -180.0 and 180.0 decimal degrees. Latitude and longitude are required if the place (or a network node associated with it) is to appear on a network map. See "Using the Map View" for more information.
Vertical	Enter a North American V & H system vertical coordinate with a positive or negative numeric value.
Horizontal	Enter a North American V & H system horizontal coordinate with a positive or negative numeric value.

Related Topics

Creating Entities

Place Summary Page

Working with Places and Place Configurations

Place Summary Page

You use the Place Summary page to define the content for a Place entity. You can also view the topology diagram of the place, using the UTIA application, by clicking **Topology**. See "Working with the Inventory Topology" for more information.

The page is arranged into tabs, each of which is used for a different purpose:

- General Information Tab
- Configurations Tab
- Associated Resources Tab
- Groups and Infrastructure Tab

See "Entity Summary Page" and "Related Pages Menu" for information about Summary page fields that are common among all entities.

Related Topics

Creating Entities

Place - New Page

Working with Places and Place Configurations

General Information Tab

You use the **General Information** tab to view basic information about the Place entity and to view and maintain the Place hierarchy.

Section	Description
Place Information	Displays basic information about the entity, most of which was defined when you created the entity. Click **Edit** to change this information. Some data elements, such as the ID, cannot be changed after the entity is created. See "Creating Entities " and "Place - New Page" for more information.
Place Hierarchy	Displays a tree view of the Place entity and any child Place entities. Place entities can include hierarchies of other places and property locations. For example, there could be a Location entity called California that includes a hierarchy of counties and cities. A Location entity called San Francisco could include property locations with addresses in that city. Right-click on a Place entity in the **Place Hierarchy** section to add a Place or Property Location entity to the hierarchy. Options available in the **View** and **Format** menus enable you to control how the entities appear in this section. See "Entity Summary Page" for information about toolbar menu actions common to all entities.

Configurations Tab

Displays any place configurations created for the entity. You can create configurations for Place entities that have the type **Site**. Using configurations enables you to create new versions as a site evolves over time.

This section is available only when the specification on which the place is based includes a reference to a Place Configuration specification.

The fields that appear in the Configurations section are common among multiple entities. See "Entity Summary Page" for more information. See "Adding the First Version of a Configuration to an Entity" and "Adding Additional Configuration Versions" for information about creating configurations.

Associated Resources Tab

Use the **Associated Resources** tab to view information about the network nodes and custom involvements of the place.

Section	Description
Network Nodes	Displays networks nodes that represent the place. The name of the network is included for each node as a link to its Summary page.
Custom Involvements	Displays any custom associations defined for the place with entities that are not otherwise associated. See "Working with Custom Involvements" for more information.

Groups and Infrastructure Tab

You use the **Groups and Infrastructure** tab to view information about any roles that are associated with the Place entity.

You can associate roles with entities to define the functions they perform in your inventory. An entity can have multiple roles simultaneously, and its roles can change over time. See "Assigning a Role in an Entity Summary Page" for more information.

Place Configuration Information - New Version Page

You use the Place Configuration Information - New Version page to create new service configurations.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Select a Place Configuration specification to use for the new configuration version. See *UIM Concepts* for more information about configuration specifications.
ID	Enter a unique ID for the configuration or accept the default. The default value is based on the ID of the parent place with an incremented version number.
Name	Enter a name for the configuration or accept the default. The default value is based on the name of the parent place with an incremented version number.
Previous Configuration	Displays the version number of the previous configuration, if any. If you are creating the first configuration version, this value is **0**.
Version	Displays the sequential version number of the configuration you are creating.
Start Date	Enter the date on which the configuration will become active.

Related Topics

Working with Places and Place Configurations

Place Configuration Information Page

You use the Place Configuration Information page to modify a place configuration. This page is available only before the configuration is completed.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Displays the name of the specification used to create the configuration. See *UIM Concepts* for more information about configuration specifications.
ID	Modify the ID for the configuration. The default value is based on the ID of the parent place with an incremented version number.
Name	Modify the name of the configuration. The default value is the same as the ID.
Previous Configuration	Displays the version number of the previous configuration, if any. If you are creating the first configuration version, this value is **0**.
Version	Displays the sequential version number of the configuration you are creating.
Start Date	Modify the date on which the configuration will become active.

Related Topics

Working with Places and Place Configurations

Place Configuration Page

You use the Place Configuration page to define the content for a place configuration.

See the following topics for more information about tasks you can complete in Place Configuration pages:

- Related Pages Menu
- Actions Menu

> **Note:**
>
> The sections listed in the following table are specific to the Place Configuration page. See "Entity Summary Page" for information about features that are common among all entities.

Section	Description
Information	Displays basic information about the configuration, most of which was defined when you created the entity. Click **Edit** to change this information. Some data elements, such as the ID, cannot be changed after the configuration is created. The **Edit** button is available only before the configuration is completed.
Configuration Items	Displays configuration items associated with the configuration. See "Adding Configuration Items " for information about adding new configuration items.

Related Topics

Working with Places and Place Configurations

Working with Property Locations

Property Locations define where resources are located, where connectivity is terminated, and similar geographic aspects of your inventory. A Property Location entity represents a piece of land with defined legal boundaries. It is the lowest-level element in the natural hierarchy that identifies a location (country, state/province, municipality, property location).

> **Note:**
>
> Property Locations are similar to Place entities, but have different capabilities. Property Locations are used only to represent locations involved in connectivity scenarios.

You must define a Property Location as one or both of the following:

- **Network location**. A network location hosts devices that transport services. For example, a service provider Central Office is a network location. Defining a property location as a network location requires the assignment of a network location code.
- **Service location**. A service location is where a customer accesses a service. For example, an office where a customer accesses a Carrier Ethernet service is a service location.

See the following topics for more information about working with Property Location entities, see the following topics:

- Creating Property Locations
- Editing Property Locations
- Validating Property Addresses
- Adding Network Entity Codes to Network Locations
- Adding Property Locations to Inventory Groups

Creating Property Locations

To create a property location:

1. In the **Inventory - Infrastructure** group of the navigation section, click **Property Locations**.
2. In the Search Results section, click **Create**.
3. In the Location Type area, select **Network Location**, **Service Location**, **Point of Presence**, or all.

   If you selected **Network Location**, the **Network Location Code** field at the bottom of the page becomes available.
4. In the Property Address area, enter or select information in the **Street Address**, **City**, and **Country** fields. Optionally enter information into the **Apt/Room/Suite**, **State**, **Sub Area**, and **Postal Code** fields. (The **Sub Area** field is available only when you select a country other than the US in the **Country** field.)

   The **Property Name** field is automatically populated with a name made up of the street address, Apt/Room/Suite value, city, sub area, state, postal code, and country values.
5. (Optional) Overwrite this default name if desired.

   If you overwrite the default name, UIM does not update the name when address details change. The **Property Name** value must be unique for service locations.
6. (Optional) If you do not intend to validate this property address, select the **Accept Property Address As Is** check box.
7. (Optional) Validate the property address.

   If you choose to validate the address, the information you enter manually may be replaced. See "Validating Property Addresses" for more information.
8. (Optional) In the Geographic Coordinates area, enter either a latitude and longitude or a vertical and horizontal coordinate pair. When you enter coordinates in one system, the corresponding values in the other system are populated. For example, if you enter a latitude and longitude, the vertical and horizontal values are populated automatically.
9. (Optional) To lock the geographic coordinates so that they cannot be changed, even during address validation, click the **Lock Coordinates** button.
10. If you selected **Network Location** as the location type, enter a uniquely identifying code in the **Network Location Code** field. The network location code must be three to ten characters in length and can correspond to CLLI format. See *UIM Concepts* for more information.

    When you enter a code that is unique in your inventory, the **Unique Code** label and check mark icon next to the **Network Location Code** field are highlighted.
11. (Optional) If you want the property name to include the network location code, select **Use Network Location Code as Property Name**.
12. (Optional) Enter values for any characteristics defined for the Property Location entity.
13. Click **Save** or **Save and Close**.

Related Topics

Adding Network Entity Codes to Network Locations

Editing Property Locations

Editing Property Locations

You can edit property locations after you create them.

To edit a property location:

- In a Property Location page **General Information** tab, click the **Edit** button in the upper-right corner.

  The fields in the page become available.

Related Topics

Adding Network Entity Codes to Network Locations

Validating Property Addresses

Validating Property Addresses

You can validate property addresses to ensure consistency and prevent duplication. UIM validates addresses by using a geocoder such as Oracle Spatial eLocation. See *UIM Concepts* and *UIM System Administrator's Guide* for more information about setting up geocoding features on UIM.

When you validate a property address, UIM presents you with one or more addresses that match the address information that has already been entered for the property. If you select one of the matches, UIM replaces the address details for the property with the information returned by the geocoder.

The **Apt/Room/Suite** field in the address is ignored during validation and is not changed if you select an address suggested by the validation process.

After a property address has been validated, a green check mark appears in the upper right corner of the page where you performed the validation. If you change the address details after validation, the property location is considered unvalidated and the check mark is removed. You can validate the address again.

To validate a property address:

1. In the Create Property Location page or in the **General Information** tab of a Property Location page, enter all required address information.
2. Click the **Validate Address** button.

   UIM opens a dialog box containing one or more matching addresses.
3. Do one of the following:
   - Select one of the addresses and then click **OK**.

     UIM marks the address as validated, displays a green check mark in the Property Address area, and updates the address fields if necessary. If you later edit any of the address fields, the address reverts to unvalidated state.
   - Click the **Accept Address As Is** button.

     UIM closes the dialog box, selects the **Accept Address As Is** check box in the address area, and leaves the address information in its current state.
   - Click the **Cancel Validation** button.

     UIM closes the dialog box, leaving the address unchanged and the address unvalidated.
4. Click **Save** or **Save and Close**.

Related Topics

Creating Property Locations

Editing Property Locations

Adding Network Entity Codes to Network Locations

Network locations can be associated with logical devices that terminate connectivity. Such logical devices are called network devices and they have network entity codes that uniquely identify them within the network location. See "Associating Logical Devices to Network Locations and Network Entity Locations" for more information.

To add a network entity code to a network location:

1. Navigate to the **General Information** tab of a Property Location Summary page.
2. (Optional) If you want the property name to include the network location code, select **Use Network Location Code as Property Name**.
3. Click the **Network Entity Codes** tab.
4. Do the following for each network entity code you want to add:
   a. Click the **Add** button in the toolbar.
   b. In the first empty row in the table, enter a network entity code for a logical device at this network location.

Adding Property Locations to Inventory Groups

You add property locations to inventory groups so that you can manage them more efficiently.

To add a property location to an inventory group:

1. Navigate to the **Groups and Infrastructure** tab of a Property Location Summary page.
2. Click the **Associate** button.

   The Associate Inventory Group dialog box appears.
3. Search for or create an inventory group.
4. Click **OK**.

   The dialog box closes and the inventory group appears in the table in the **Inventory Groups** tab.

Related Topics

Working with Inventory Groups

Property Location - New Page

You use the Property Location - New page to create new Property Location entities.

Field	Description
Network Location	Select to define the property location as a network location. You must enter a value in the **Network Location Code** field if you select this check box.
Service Location	Select to define the property location as a service location.
Point of Presence	Select to define the property location as a point of presence.
Accept Property Name As Is	Select if you do not intend to validate the property address and want to maintain the address details you have entered.

Field	Description
Validate Address	Click to validate the property address using a geocoder application such as Oracle eLocation. If you validate the property address, its values will be replaced with the values returned by the geocoder. See "Validating Property Addresses" for more information.
Street Address	Enter the street address.
Apt/Suite/Room	Enter an apartment, suite, room, or other value that more precisely identifies the location at the street address. UIM ignores this value during address validation, but includes it in the property name.
Sub Area	For non-US addresses, enter a neighborhood or region of the city.
City	Enter the city or municipality.
State/Province	Enter the state or province in ISO format.
Country	Select a country value.
Postal Code	Enter the postal code.
Property Name	The default property name is a concatenation of the street address; apartment, room, or suite number; sub area; city; state; and country values. The default property name is updated when these values change. If you overwrite the default name, the name you enter is maintained and is not updated when address values change.
Description	Enter a description of the property location.
Latitude	Enter a latitude value between -90.0000 and 90.0000 decimal degrees. For North American locations, this value is converted to a V & H value and displayed in the **Vertical** field.
Longitude	Enter a longitude value between -180.0000 and 180.0000 decimal degrees. For North American locations, this value is converted to a V & H value and displayed in the **Horizontal** field.
Vertical	Enter a North American V & H system vertical coordinate with a positive or negative numeric value. This value is converted to a latitude and displayed in the **Latitude** field.
Horizontal	Enter a North American V & H horizontal coordinate with a positive or negative numeric value. This value is converted to a longitude and displayed in the **Longitude** field.
Network Location Code	Enter a network location code. You can use a CLLI code, a code based on Oracle recommendations, or a code based on your own system. See "Adding Network Entity Codes to Network Locations" for more information. If you assign it a network location code, a property location is considered a network location and can be used in connectivity.
Use Network Location Code as Property Name	Select if you want the network location code to be included in the property name. This selection is available only if you have entered a network location code and is meaningful only if you are using the default property name.

Related Topics

Creating Property Locations

Property Location Page

You use the Property Location page to enter and view information about Property Location entities. The page is arranged into several tabs, each of which is used for a different purpose:

- General Information Tab
- Network Entity Codes Tab
- Groups and Infrastructure Tab
- Associated Resources

General Information Tab

You use the **General Information** tab to view and maintain information about Property Location entities. When you click the **Edit** button, the fields in the page become available for editing.

Field	Description
Network Location	Select to define the property location as a network location. You must enter a value in the **Network Location Code** field if you select this check box.
Service Location	Select to define the property location as a service location.
Point of Presence	Select to define the property location as a point of presence.
Accept Property Name As Is	Select if you do not intend to validate the property address and want to maintain the address details you have entered.
Validate Address	Click to validate the property address using a geocoder application such as Oracle eLocation. If you validate the property address, its values will be replaced with the values returned by the geocoder. See "Validating Property Addresses" for more information.
Street Address	Enter the street address.
Apt/Suite/Room	Enter an apartment, suite, room, or other value that more precisely identifies the location at the street address. UIM ignores this value during address validation, but includes it in the property name.
Sub Area	For non-US addresses, enter a neighborhood or region of the city.
City	Enter the city or municipality.
State/Province	Enter the state or province in ISO format.
Country	Select a country value.
Postal Code	Enter the postal code.
Property Name	The default property name is a concatenation of the street address; apartment, room, or suite number; sub area; city; state; and country values. The default property name is updated when these values change. If you overwrite the default name, the name you enter is maintained and is not updated when address values change.
Description	Enter a description of the property location.
Latitude	Enter a latitude value between -90.0000 and 90.0000 decimal degrees. For North American locations, this value is converted to a V & H value and displayed in the **Vertical** field.

Field	Description
Longitude	Enter a longitude value between -180.0000 and 180.0000 decimal degrees. For North American locations, this value is converted to a V & H value and displayed in the **Horizontal** field.
Vertical	Enter a North American V & H system vertical coordinate with a positive or negative numeric value. This value is converted to a latitude and displayed in the **Latitude** field.
Horizontal	Enter a North American V & H system horizontal coordinate with a positive or negative numeric value. This value is converted to a longitude and displayed in the **Longitude** field.
Network Location Code	Enter a network location code. You can use a CLLI code, a code based on Oracle recommendations, or a code based on your own system. See "Adding Network Entity Codes to Network Locations" for more information. If you assign it a network location code, a property location is considered a network location and can be used in connectivity.
Use Network Location Code as Property Name	Select if you want the network location code to be included in the property name. This selection is available only if you have entered a network location code and is meaningful only if you are using the default property name.

Related Topics

Creating Property Locations

Network Entity Codes Tab

You use the **Network Entity Codes** tab to enter and maintain information about network entities associated with a property location that has been designated a network location.

Column	Description
Network Entity Code	Enter the network entity code of a logical device at this property location.
Device Identifier	Displays the device identifier of the logical device associated with the network entity code.
Connectivity	Displays an icon when the network device (logical device) is assigned to a connectivity.

Related Topics

Adding Network Entity Codes to Network Locations

Groups and Infrastructure Tab

You use the **Groups and Infrastructure** tab to enter and maintain information about the inventory groups to which a property location belongs.

Column	Description
Specification	Displays the specification used to define the inventory group. This field is read only.
Name	The name of the inventory group.
Description	The description of the inventory group.
Start Date	The date on which the inventory group becomes active.
End Date	The last date on which the inventory group is active.
Inventory Group Type	Determines which entities can be included in inventory groups of this type. Inventory groups with inventory group types are called resource pools.

Related Topics

Working with Inventory Groups

Associated Resources

You use the **Associated Resources** tab to view and maintain any custom involvements defined for the property location with entities that are not otherwise associated.

Column	Description
Involvement Specification	The specification that defines the involvement.
Entity Role	Role of the entity relevant to the involvement.
Involved Entity	Displays the type, specification, ID, name, and the role of the involved entity.

11

Working with Connectivity

Oracle Communications Unified Inventory Management (UIM) provides specialized functionality for representing connectivity. Connectivity entities provide built-in support for a variety of technologies and can be customized to suit your business needs.

Like other entities, you define specifications for Connectivity entities in Design Studio. You can define specifications for three types of Connectivity entities:

- Channelized Connectivity entities support technologies such as E-Carrier, T-Carrier, J-Carrier, SDH, and SONET, and WDM.
- Packet Connectivity entities support technologies such as Ethernet, Frame Relay, ATM, and MPLS.
- Service Connectivity entities represent the connectivities that deliver services to end customers. Service connectivity consumes other types of connectivity and resources, but cannot be consumed itself.

The specifications for the three different connectivity types include different default characteristics. In UIM, you see a different set of tabs in Connectivity Summary pages depending on the connectivity type. See "Connectivity Details Page" for more information.

You can also use Pipe entities to model connectivity. For example, pipes are recommended for modeling physical connectivity such as ducts and cables. See "Working with Pipes, Capacity, and Signal Structure " for information about pipes.

You can include connectivity and connectivity design versions in business interactions.

See the following topics for more information about working with connectivity entities:

- Creating Connectivity Entities
- Connectivity Details Page
- Editing Connectivity General Information
- Designing Connectivity
- Configuring Capacity of Channelized Connectivity
- Viewing Channels in a Channelized Connectivity
- Viewing Riders in a Packet Connectivity
- Creating a Project Activity

Creating Connectivity Entities

When you create Connectivity entities, you select values for the rate code, connectivity function, and technology fields. These fields interact with each other so that only valid combinations of selections are available.

> **Note:**
>
> Before you can create a Connectivity entity, you must deploy the ora_uim_basespecifications and ora_uim_basetechnologies cartridges to UIM. The ora_uim_basetechnologies cartridge includes rate codes, technologies, signal architectures, and other content.

When you create a connectivity, you specify its technology, which determines the specifications you can use. You also specify an identification format. The formats you can choose from depend on the technology and specification. See *UIM Concepts* for more information about connectivity identification formats.

> **Note:**
>
> A ruleset is required for generating custom IDs for the **Custom Identification** format. You see an error message if no ruleset has been defined for this purpose and you select the **Custom Identification** format.

You must also specify the A and Z locations of the connectivity. The A and Z locations can be service locations, network locations, or network entity locations, depending on the technology and identification format of the connectivity.

To create a Connectivity entity:

1. In the **Inventory - Resources** group of the navigation section, click **Connectivity**.

   The Connectivity Search page appears.

2. Click the **Create** button in the toolbar of the Search Results section.

   The Connectivity - New page appears.

3. In the **Technology** field, enter the first letter of the technology for this connectivity, then select from the list that appears.

   The **Specification** field updates to include a list of all the specifications defined for the technology you selected.

4. In the **Specification** field, select the specification you want to use for this connectivity.

   The Connectivity - New page updates to include the fields defined by the specification.

5. In the **Identification Format** field, select the identification format for this connectivity. Only the identification formats that are valid for the selected specification are available. The **Service-Based** identification format is valid only for Packet Network Access Connectivity, such as an Ethernet UNI connectivity.

6. Do one of the following to specify the A and Z locations of the connectivity.

   If you selected the **Location-Based** or **Custom Identification** identification format:

   a. In the **A Network/Entity Location** field, enter the first few characters of the A-side network location or network entity code for this connectivity, then select from the list of matches that appears below the field.

   b. In the **Z Network/Entity Location** field, enter the first few characters of the Z-side network location or network entity code for this connectivity, then select from the list of matches that appears below the field.

If the **Service-Based** identification format is selected:

a. Next to the **A Service Location** field, click the search icon.

b. In the dialog box that appears, search for and select a service location, then click **OK**.

   The dialog box closes and the **A Service Location** field displays the service location you selected.

c. In the **Z Network/Entity Location** field, enter the first few characters of the Z-side network location or network entity code for this connectivity, then select from the list of matches that appears below the field.

7. Select the combination of values in the **Rate Code** and **Function** fields that applies to the connectivity. A selection in one field filters the available values in the other. The value of the **Technology** field also influences which **Rate Code** values are available.
8. In the **Quantity** field, enter the number of entities you want to create.
9. (Optional) In the **Serial Number** field, enter a serial number if you do not want to use the one that will be automatically generated by UIM when you save the new connectivity.
10. (Optional) Select **Assign Contiguous Serial Number** if you are creating more than one connectivity and want the serial numbers to be in a continuous block.
11. Enter information for other optional and required fields defined by the specification.
12. Click **Save**.

    The **New Connectivities** list appears, displaying information about the entity or entities you created.

Connectivity - New Page

You use the Connectivity - New page to create new connectivity entities. You can create multiple entities in the same operation.

Field	Description
Technology	Enter the technology that applies to this connectivity. You can enter the first few characters, then select from the search results displayed.
Specification	In the **Specification** field, select a specification for the connectivity. The specifications you can choose from are limited by your selection in the **Technology** field.
Identification Format	Select the identification format for this connectivity. There are three possible identification formats. Only the identification formats that are valid for the selected specification are available. • **Location Based**. Used for connectivities that are terminated on network locations. • **Service Based**. Used for connectivities when one end point terminated on a service location. • **Custom Identification**. Used when a ruleset has been defined to create custom IDs. If you select **Custom Identification** and there is no ruleset defined, you see an error. See *UIM Concepts* for more information about connectivity identifiers.
A Service Location	Visible only when **Service Based** is selected in the **Identification Format** field. **Service Based** is valid only for Packet Network Access connectivities, such as Ethernet UNI connectivities. Click the search icon to search for and select a service location. The **A Service Location** field displays the location you select.

Field	Description
A Network/Entity Location	Visible only when **Location Based** or **Custom Identification** is selected in the **Identification Format** field. Enter the network location code or network entity code for the A side of the connectivity. You can enter the first few characters, then select from the search results displayed.
Z Network/Entity Location	Enter the property location or network entity code for the Z side of the connectivity. You can enter the first few characters, then select from the search results displayed.
Rate Code	Enter the rate code that applies to this connectivity. You can enter the first few characters, then select from the search results displayed. The **Rate Code** value is limited by the selections in the **Technology** and **Function** fields to ensure that only valid combinations are selected.
Function	Enter the function that applies to this connectivity. You can enter the first few characters, then select from the search results displayed. Functions apply only to connectivities that have rate codes that define them as facilities. The **Function** value is limited by selections in the **Technology** and **Rate Code** fields to ensure that only valid combinations are selected.
Quantity	Enter the number of Connectivity entities you want to create.
Assign Contiguous Serial Number	Select if you are creating multiple Connectivity entities and want their serial numbers to be in a continuous block.
Serial Number	Displays a number that uniquely identifies the connectivity within the context of other facilities that share the same **A Network/Entity Location**, **Z Network/Entity Location**, **Rate Code**, and **Technology** values. A serial number is automatically generated during the connectivity creation procedure, but you can manually overwrite it.
New Connectivities	After you click the **Save** button, displays a list of the Connectivity entities you created. You can select a connectivity to display its information in the Connectivity Details page.

Connectivity Details Page

You use the Connectivity Details page to enter and view information about Connectivity entities. You can also view the topology diagram of the connectivity, using the UTIA application, by clicking **Topology**. See "Working with the Inventory Topology" for more information.

The page is arranged into several tabs, each of which is used for a different purpose. The tabs you see depend on the type of Connectivity entity.

Channelized Connectivity

- General Information Tab
- Connectivity Design Tab
- Channels Tab
- Capacity Tab
- Associated Resources

Packet Connectivity

- General Information Tab

- Connectivity Design Tab
- Riders Tab
- Associated Resources

Service Connectivity

- General Information Tab
- Connectivity Design Tab
- Associated Resources

General Information Tab

You use the **General Information** tab to view and edit basic information about Connectivity entities. You also use the tab to open the other tabs for editing.

Field	Description
Identification	Displays the automatically generated connectivity identifier for this connectivity. Connectivity identifiers are generated using the Oracle Structured format. This information is read-only See *UIM Concepts* for more information about how the connectivity identifier is generated.
Description	Enter a description of the Connectivity entity.
A Network/Entity Location	Enter the network location code or network entity code for the A side of the connectivity. You can enter the first few characters, then select from the search results displayed.
Z Network/Entity Location	Enter the network location code or network entity code for the Z side of the connectivity. You can enter the first few characters, then select from the search results displayed.
Status	Displays the life cycle status of the connectivity.
Rate Code	Enter the rate code that applies to this connectivity. You can enter the first few characters, then select from the search results displayed. The **Rate Code** value is limited by selections in the **Technology** and **Function** fields to ensure that only valid combinations are selected.
Technology	Enter the technology that applies to this connectivity. You can enter the first few characters, then select from the search results displayed. The **Technology** value is limited by selections in the **Rate Code** and **Function** fields to ensure that only valid combinations are selected.
Function	Enter the function that applies to this connectivity. Functions apply only to connectivities that have rate codes that define them as facilities. You can enter the first few characters, then select from the search results displayed. The **Function** value is limited by selections in the **Technology** and **Rate Code** fields to ensure that only valid combinations are selected.
Serial Number	Displays the serial number of the connectivity.
Bit Rate	Displays the bit rate of the connectivity. The bit rate is based on the rate code applied to the connectivity.
Transmission Signal Type	Display the signal type, such as Optical. The transmission signal type is based on the signal associated to the rate code.
Assignment Status	Displays the assignment status of the connectivity.
Assigned to Service	Displays the name of the service (if any) to which the connectivity is assigned.

Field	Description
Network Name	Displays the name of the network (if any) that includes an edge that represents this connectivity. If the connectivity is part of more than one network, more than one field appears.
Network Edge	Displays the name of the network edge (if any) that represents the connectivity in networks. If the connectivity is represented by more than one network edge, more than one field appears.
Associated Business Interactions	Displays the business interactions and engineering work orders with which the connectivity is associated.

Connectivity Design Tab

You use the **Connectivity Design** tab in the Connectivity Details page to enable and terminate connectivity. The **Connectivity Design** tab has the following subtabs:

- Design Subtab
- Schematic Subtab
- Hierarchy Subtab
- Map Veiw Subtab. See "Map View Page" for more information.

Design Subtab

The **Design** subtab includes a large table that shows rows for each segment in the connectivity path. The rows display icons and information about the segments. For example, the connectivity identifier and status are displayed for each connectivity, channel, or pipe that is assigned to a segment. You can view the physical ports that are assigned to each connectivity.

Icon	Label	Description
	Delete	Click to delete a selected segment or segments.
	Clear	Click to clear all assignments made in the connectivity design.
	Reverse Selected Segments	Click to reverse the direction of a selected segment or segments.
	Export	Click to export the design to Microsoft Excel file.

Icon	Label	Description
	Print	Click to create a web page depicting the connectivity design. You can print the page using browser functionality.
View	**View list**	Select options from the list to make changes to the design table. You can select columns that you want to display in the table, using **Columns** option.
Detach	**Detach**	Click to select elements from the **Detached tree Table** page that you want to detach from the original design. You can click **Attach** to attach any new element to the design, from the **Detached tree Table** page.
	Unresolved Gap	Displayed when an unresolved gap exists. Click to accept the gap.
	Accepted Gap	Displayed for a gap that has been accepted. Click to remove the acceptance.
	Create Interconnection	Displayed when a cross-connect is required to complete the connectivity design. Click to select a device interface and create the cross-connect.
	Remove Interconnection	Displayed when a trail-bound interconnection exists for the segment. Click to remove the interconnection.
	Cross-Connect (Trail Bound)	Displayed for a segment that includes a trail-bound cross-connect.
	Cross-Connect (Interface Bound)	Displayed for a segment that includes an interface-bound cross-connect.
	Jumper (Trail Bound)	Displayed for a segment that includes a trail-bound jumper.

Icon	Label	Description
	Jumper (Interface Bound)	Displayed for a segment that includes an interface-bound jumper.
	Assign Interface	Displayed for the A and Z ends of the connectivity when they require termination. When you click this icon you can select: • **Terminate at Media Interface** to search for a media interface on which to terminate the connectivity. • **Terminate at Flow Interface** to search for a media interface under which a flow interface will be created to terminate the connectivity. (Available only for packet and service connectivities.) • **Terminate at Channel** to virtually terminate the connectivity on the same interface as its enabling channel. (Available only for channelized connectivities.) See "Terminating a Connectivity" for more information.
	Unassign Interface	Displayed for the A and Z ends of the connectivity when they have been terminated on a device interface. Click to remove the interface assignment.
	Assign Transport	Displayed for a segment with an unresolved gap. Click to search for and assign a channel or pipe.
	Unassign Transport	Displayed for a segment to which transport has been assigned. Click to remove the assignment.
	Gap Analysis	Displayed for a segment with an unresolved gap. Click to use gap analysis to find a channel or path analysis to find a pipe.
	Assign Flow Identifier	Displayed in the toolbar and connectivity segments of packet connectivity designs. **Note:** Flow Identifier assignment is allowed for both packet service connectivity and standalone service connectivity. See "Assigning Flow Identifiers in the Connectivity Design Tab" for more information.

Icon	Label	Description
	Unassign Flow Identifier	Displayed in the toolbar and connectivity segments of packet connectivity designs. See "Assigning Flow Identifiers in the Connectivity Design Tab" for more information.

The path control area in the upper-left portion of the **Connectivity Design** tab enables you to control which paths exist for the connectivity and which one is displayed.

Control	Description
Create Another Path	Click to create a secondary path. The first path is created automatically. Secondary paths are valid only in some technologies.
Duplicate the Selected Path	Click to duplicate the current path as the secondary path.
Delete the Selected Path	Click to delete the current path.
Path 1 **Path 2**	Click to display the corresponding path.

Schematic Subtab

You use the **Schematic** subtab of the **Connectivity Design** tab to view a graphical representation of the connectivity enablement and termination design created in the **Design** subtab. The **Design Versions** control in the upper-right corner of the **Schematic** subtab enables you to switch between current and previous versions of the connectivity design. See "Viewing a Previous Design Version".

Field	Description
Expand All	Click to display all the cross connections and device interfaces within the connectivity.
Collapse All	Click to display the original connectivity schematic.
Control Panel	Click to view zoom options. Click **Control Panel** icon again to close the zoom options.
Zoom to Fit	Click to refresh the visualization to the zoom level required to show all elements in the diagram.
Zoom In	Click to enlarge the visualization on the current center point of the diagram.
Zoom Out	Click to reduce the size of the visualization on the current center point of the diagram.
Preferences	Click to add the following preferences to the schematic diagram: • Display Node(s) label • Display Connectivity label
Paths	Select the path for which you want the schematic to be displayed. The **Paths** control allows you to highlight one enablement path when more than one path exists.
Overview section	Displays a small-scale view of the entire visualization.

Hierarchy Subtab

You use the **Hierarchy** subtab of the **Connectivity Design** tab to view a graphical representation of the connectivity hierarchy. The connectivity hierarchy shows all the layers on which the connectivity is enabled. The **Design Versions** control in the upper-right corner of the **Hierarchy** subtab enables you to switch between current and previous versions of the connectivity design. See "Viewing a Previous Design Version" for more information.

Field	Description
Expand All	Click to display all the cross connections, ports, jumpers and device interfaces within the connectivity.
Collapse All	Click to display the original connectivity hierarchy.
Control Panel	Click to view zoom options. Click **Control Panel** icon again to close the zoom options.
Zoom to Fit	Click to refresh the visualization to the zoom level required to show all elements in the diagram.
Zoom In	Click to enlarge the visualization on the current center point of the diagram.
Zoom Out	Click to reduce the size of the visualization on the current center point of the diagram.
Preferences	Click to add the following preferences to the hierarchy diagram: • Display Node(s) label • Display Connectivity label
Paths	Select the path for which you want the hierarchy to be displayed. The **Paths** control allows you to highlight one enablement path when more than one path exists.
Overview section	Displays a small-scale view of the entire visualization.
Editor section and **Legend** section	These sections appear on the right-side of the canvas after you select a node. The **Editor** section displays information about the entity node selected in the canvas area, including the ID, name, entity location, and the characteristics associated to the entity specification. Clicking the **ID** link opens the Summary page of an entity. The **Legend** section provides the list of nodes and links that exist in the hierarchy diagram.

Capacity Tab

You use the **Capacity** tab in the Connectivity Details page to configure the capacity of a channelized connectivity by determining its signal structure. The **Capacity** tab displays a canvas in which a hierarchy of nodes and levels can be displayed. A control section in the upper level enables you to change how the nodes and levels are displayed.

Field	Description
Layout tool	Controls how nodes and levels are displayed in the canvas. Select one of the following layouts: • **Vertical, Top Down**. Nodes are arranged vertically with the highest level at the top. • **Horizontal, Left to Right**. Nodes are arranged horizontally, with the highest level at the left. • **Tree**. Nodes are arranged in a vertically-oriented tree structure, with lower levels as branches from higher levels. • **Radial**. Nodes are arranged radially, with the highest level at the center. • **Circle**. Nodes are arranged with the highest level at the center and lower levels arranged in a circle around it.
Slider control, **+** and **–** button	Zooms the display in and out.
Zoom to Fit	Automatically zooms the display to fit the screen.
Pan control	Moves the viewing area so that you can see areas that are not currently displayed. • Click an arrow in the pan control to move in the corresponding direction. You can simultaneously rotate the control to reorient the display after panning. • Click the dot in the middle of the pan control to recenter the display.
Node	Displays information about a connectivity or channel in the hierarchy. Enables you to view additional information, open additional hierarchy levels, and control the availability of a channel. • Click the arrow button on either side of the node or click the square icons to view additional pages. • Click the check box to remove the check mark and make the channel unavailable. • Click the small triangles on the bottom or right side of the node to open the next level. • To close a level, click the small triangle on the bottom or side of a node that connects the line to the lower level. • To isolate a node and hide all other nodes, click the small triangle on the side of the node opposite to the line that connects it to other nodes.
Level	To show additional nodes in the level, click an arrowhead on the end of the line that connects the nodes. Click the expanded triangle icon to view the next group of nodes. Click the triangle-and-line icon to see the last group.

Channels Tab

You use the **Channels** tab in the Connectivity Details page of a channelized connectivity to view the channel hierarchy.

Field	Description
A Termination Device	Displays information about the device terminated to the A side of the connectivity.
Z Termination Device	Displays information about the device terminated to the Z side of the connectivity.

Field	Description
Connectivity table	Lists the connectivity identifier, status, service assignments, and terminations of the connectivity. When the connectivity row is expanded, the identifiers, statuses, and terminating interfaces of its channels are listed in additional rows.

Riders Tab

You use the **Riders** tab in the Connectivity Details page for packet connectivity entities to view the pipes and connectivities that are enabled by (or *ride*) this connectivity.

Field	Description
A Termination Device	Displays information about the device terminated to the A side of the connectivity.
Z Termination Device	Displays information about the device terminated to the Z side of the connectivity.
Connectivity table	Lists the connectivity identifier, status, service assignments, and terminations of the connectivity. When the connectivity row is expanded, its the identifiers and statuses, and terminating interfaces of its channels are listed in additional rows.

Associated Resources

You use the **Associated Resources** tab to view information about the custom involvements of the connectivity.

Section	Description
Custom Involvements	Displays any custom associations defined for the connectivity with entities that are not otherwise associated. See "Working with Custom Involvements" for more information.

Editing Connectivity General Information

You can edit some of the general information for a Connectivity entity. In addition, you can add a description.

To edit Connectivity general information:

1. Open a Connectivity Details page.
2. Click the **General Information** tab.
3. Click the **Edit** button.

   Editable fields become available in the page.
4. Edit the desired fields.
5. (Optional) In the **Description** field, enter a description.
6. Click **Save** or **Save and Close**.

   The new information is saved.

Designing Connectivity

You use the **Connectivity Design** tab in the Connectivity Details page to enable and terminate connectivity.

The **Connectivity Design** tab includes a large table that shows rows for each segment in the connectivity path. The rows display icons and information about the segments. For example, the connectivity identifier and status are displayed for each channel or pipe that is assigned to a segment.

The design process begins with a connectivity gap that you resolve by assigning transport to the gap.

Connectivity designs can be versioned to reflect changes over time. Only one design version can be active at a time. You can make changes only to the active design. You cannot make changes to connectivity designs that are completed or cancelled.

> **Note:**
>
> Service connectivities have **Connectivity Design** tabs, but the information is read-only. Service connectivity designs are created automatically.

See the following topics:

- Using the Connectivity Design Tab
- Managing Design Versions
- Terminating a Connectivity
- Working with Gaps
- Working with Paths

Using the Connectivity Design Tab

The **Connectivity Design** tab includes features that enable you arrange and manage the design.

See the following topics:

- Filtering the Connectivity Design Table by Segment Type
- Clearing the Connectivity Design
- Reversing a Connectivity Segment Direction
- Exporting a Connectivity Design
- Printing a Connectivity Design

Filtering the Connectivity Design Table by Segment Type

You can filter the table in the **Connectivity Design** tab to hide segment types that you do not want to see. For example, you can filter the table so that jumpers and cross-connects are not shown.

To filter the connectivity design table by segment type:

1. Open a Connectivity Details page.
2. Click the **Connectivity Design** tab.
3. If necessary, select the path.
4. In the table, click the icon next to the **Segment** column heading.

   The Segments Filter dialog box appears.
5. Select the segment types you want to display.
6. Click **OK**.

   The table is reformatted to show only the segment types you selected.

Clearing the Connectivity Design

You can clear all the design work and return to displaying only the A and Z locations and the initial connectivity gap.

To clear the connectivity design:

1. Open a Connectivity Details page.
2. Click the **Connectivity Design** tab.
3. If necessary, select the path.
4. Click the **Clear** icon in the left side of the design table heading row.

   A confirmation dialog box appears.
5. Click **OK**.

   The design is cleared. Only the A and Z locations remain, along with an unresolved gap between them.

Reversing a Connectivity Segment Direction

To reverse the direction of a connectivity segment:

1. Open a Connectivity Details page.
2. Click the **Connectivity Design** tab.
3. If necessary, select the path.
4. In the table, select one or more connectivity segments.
5. In the toolbar, click the **Reverse** icon.

   The direction of the segment or segments is reversed.

Exporting a Connectivity Design

You can export a connectivity design as a Microsoft Excel file.

To export a connectivity design:

1. Open a Connectivity Details page.
2. Click the **Connectivity Design** tab.
3. If necessary, select the path.

4. In the toolbar, click the **Export** icon.

   A dialog box appears, prompting you to save or open the file.

5. Save or open the file.

Printing a Connectivity Design

You can print a connectivity design for review outside of UIM.

To print a connectivity design:

1. Open a Connectivity Details page.
2. Click the **Connectivity Design** tab.
3. If necessary, select the path.
4. In the toolbar, click the **Print** icon.

   The connectivity design is displayed as a new web page outside of UIM.

5. Print the web page by using the browser's print capabilities.

Working with Paths

For some technologies, a connectivity can be enabled with multiple paths. You configure each path separately. Path 1 is created automatically.

See the following topics:

- Creating Paths
- Switching Between Paths
- Deleting Paths
- Duplicating a Path

Creating Paths

Connectivities can be enabled with one or more paths. For some technologies, such as SONET, SDH, and DWDM, an unlimited number of paths is possible. You design each path separately. Path 1 is created automatically.

To create a path:

1. Open a Connectivity Details page.
2. Click the **Connectivity Design** tab.
3. In the upper-left corner of the page, click the **Create Another Path** button (a green plus sign).

Switching Between Paths

If a connectivity has two paths, you can switch between them to see their details.

To switch between paths:

1. Open a Connectivity Details page.
2. Click the **Connectivity Design** tab.
3. In the upper left of the page, click **Path 1** or **Path 2**.

The page displays information about the path you selected.

Deleting Paths

If a connectivity has two paths, you can delete one of them in the **Connectivity Design** tab.

To delete a path:

1. Open a Connectivity Details page.
2. Click the **Connectivity Design** tab.
3. In the upper left of the page, click **Path 1** or **Path 2** to go to the path you want to delete.

   The page displays information about the path you selected.
4. Click the **Delete the Selected Path** icon (a red X).

Duplicating a Path

You can duplicate a currently existing path so that you can modify the design as a secondary path.

To duplicate a path:

1. Open a Connectivity Details page.
2. Click the **Connectivity Design** tab.
3. In the upper left of the page, click the **Duplicate the Selected Path** icon.

   A second path is created and displayed. It has the same design as the first.

Managing Design Versions

When you create a Connectivity entity, the first design version is created automatically, but you must create all subsequent versions manually. Only one design version can be active at a time; you cannot create a new design version until the current one is completed or canceled. You cannot make changes to design versions that are completed or canceled.

See the following topics:

- Creating a New Design Version
- Canceling an In-Progress Design Version
- Completing a Design Version
- Viewing a Previous Design Version

Creating a New Design Version

After you have completed a design version, you can create a new one. The new design version initially has the same design as the previous one.

To create a new design version:

1. Open a Connectivity Details page.
2. Click the **Connectivity Design** tab.

   The in-progress design version is displayed.
3. In the upper-right corner of the page, click **Design Versions**.

The Design Versions dialog box appears, displaying a list of current and previous versions.

4. Click the **Create New Version** button.

   The dialog box closes and the page displays the new design version. It has the same design as the previous version.

Canceling an In-Progress Design Version

You can cancel an in-progress design version that you have not yet completed.

To cancel an in-progress design version:

1. Open a Connectivity Details page.
2. Click the **Connectivity Design** tab.

   The in-progress design version is displayed.
3. In the upper-right corner of the page, click **Design Versions**.

   The Design Versions dialog box appears, displaying a list of current and previous versions.
4. Select the design version you want to cancel, which is the last version listed.
5. Click **Cancel**.

   The dialog box closes and the page displays the previous, completed design version.

Completing a Design Version

After you have finished a connectivity design, you can complete the design version. This makes the design version available for consumption.

> **Note:**
>
> You cannot complete a design version that includes an unaccepted gap. See "Working with Gaps".

To complete a design version:

1. Open a Connectivity Details page.
2. Click the **Connectivity Design** tab.

   The in-progress design version is displayed.
3. From the **Actions** menu, select **Complete**.

   The status of the design version changes to Completed.

Viewing a Previous Design Version

To view a previous design version:

1. Open a Connectivity Details page.
2. Click the **Connectivity Design** tab.

   The in-progress design version is displayed.
3. In the upper-right corner of the page, click **Design Versions**.

The Design Versions dialog box appears, displaying a list of current and previous versions.

4. Select the design version you want to view.
5. Click **Apply**.

   The dialog box closes and the page displays the previous design version you selected.

Terminating a Connectivity

You terminate a connectivity by associating its A and Z end points with interfaces. Your termination choices vary by connectivity type:

- For all connectivity types except packet connectivity enabled by packet connectivity, you can terminate on a media interface as long as it has sufficient capacity.
- For packet and service connectivities, you can terminate on a flow interface. You search for a media interface and then create a flow interface on which to terminate the connectivity. The flow interface has the same capacity as the connectivity.
- For channelized connectivity, you can choose to virtually terminate on the same interface as its enabling channel.

To terminate a connectivity:

1. Open a Connectivity Details page.
2. Click the **Connectivity Design** tab.
3. If necessary, select the path.
4. Assign an interface to the A location:
   a. In the **A Location** column, click the **Assign Interface** button.
   b. Select one of the following three options, depending on the type of connectivity you are designing:

      Terminate at Media Interface to search for a media interface on which to terminate the connectivity.

      Terminate at Flow Interface to search for a media interface that will provide a flow interface on which to terminate the connectivity. UIM creates the flow interface with the bit rate of the connectivity being terminated. (Available only for packet and service connectivities.)

      Terminate at Channel to virtually terminate the connectivity on the same interface as its enabling channel. (Available only for channelized connectivities.)

   c. When the search page appears, enter additional criteria if necessary, then click **Search**.

      Search results are displayed below the search criteria.

   d. Select an interface, then click **OK**.

      The search area is removed and the selected interface is assigned.
5. Repeat step 4 for the Z location.

Related Topics

Working with Gaps

Removing a Terminating Interface

To remove a terminating interface:

1. Open a Connectivity Details page.
2. Click the **Connectivity Design** tab.
3. If necessary, select the path.
4. Click the **Remove** icon next to the identifier for a device interface that terminates a connectivity.

   The terminating interface is removed.

Working with Gaps

Gaps represent segments of a path for which connectivity details are undefined or unknown. To complete a connectivity design, you must do one of the following:

- Resolve the gap by assigning a connectivity or pipe to it. This process is also called “assigning transport."
- Accept the gap and supply a reason for doing so.

The process of resolving gaps is called enablement. Enablement defines how a connectivity receives its capacity.

See the following topics:

- Accepting Gaps
- Removing a Gap Acceptance
- Manually Assigning Connectivity to a Gap
- Automatically Resolving Gaps by Using Gap Analysis
- Automatically Resolving Gaps by Using Path Analysis
- Deleting a Connectivity Segment
- Adding an Interconnection
- Viewing Transport Details
- Viewing Network Details

Accepting Gaps

A connectivity gap can sometimes be valid from a business perspective. For example, part of the trail may pass through a third-party network where the details are not known. In these cases, you can mark a gap as accepted. Marking a gap as accepted means that the connectivity design can be completed.

To accept a gap:

1. Open a Connectivity Details page.
2. Click the **Connectivity Design** tab.
3. If necessary, select the path.

   The page displays the connectivity design.

4. Click the **Gap** icon (a red circle with an exclamation point) in a row.

   The Accept Gap dialog box appears.

5. in the **Reason** field, enter a brief description.

6. Click **OK**.

   The red exclamation point icon is replaced with a green check mark. The reason you entered appears in the row.

Removing a Gap Acceptance

You can remove the acceptance of a gap. This action returns the gap to unresolved status, meaning that the connectivity design cannot be completed until the gap is resolved or accepted.

> **Note:**
>
> You cannot remove a gap acceptance after a design has been completed. You must create a new design version to make this change.

To remove a gap acceptance:

1. Open a Connectivity Details page.
2. Click the **Connectivity Design** tab.
3. If necessary, select the path.

   The page displays the connectivity design.

4. Click the **Accepted Gap** icon (a green check mark) in a row.

   The check mark is removed and replaced by the **Gap** icon (a red circle with an exclamation point). The gap is now unresolved.

Manually Assigning Connectivity to a Gap

You can assign a channel, connectivity, or a pipe to a segment to resolve a connectivity gap. Pipes must be terminated on network devices (logical devices associated to network locations) to be used for this purpose.

To manually assign connectivity to a gap:

1. Open a Connectivity Details page.
2. Click the **Connectivity Design** tab.

   The page displays information about the in-progress design version.

3. If necessary, click **Path 2** to display the path you are working on.
4. Click the **Assign Connectivity** button near a **Gap** icon.
5. Select **Connectivity** or **Pipe** from the menu that appears.

   A Search area appears at the bottom of the page.

6. Search for a Pipe or Connectivity entity.

   Search results are displayed in a tree structure below the search criteria.

7. If you selected a channelized connectivity, expand the hierarchy to select the desired channel.
8. Click **Apply**.

   The search area is removed and the table displays the connectivity assignment. Depending on the design, additional gaps may appear. Trail-bound cross-connects may be created as a result of the connectivity assignment. Pre-existing interface-bound cross-connects may be included.

Automatically Resolving Gaps by Using Gap Analysis

You can use gap analysis to find channels and connectivities that resolve connectivity gaps. You provide criteria about how to resolve the gap. Gap analysis locates channels and connectivities that meet the criteria.

Gap analysis is similar to path analysis, but does not find Pipe entities. See "Automatically Resolving Gaps by Using Path Analysis" for information about automatically resolving gaps by assigning pipe connectivity.

To resolve a gap by using gap analysis:

1. Open a Connectivity Details page.
2. Click the **Connectivity Design** tab.
3. If necessary, select the path.
4. Click the **Gap Analysis** button near the **Gap** icon.
5. Select **Channel** from the menu that appears.

   The Gap Analysis section appears in the page. The section is divided into three columns: one for the source, one for an optional intermediate node, and one for the target.
6. In the **Source** column:
   a. In the **Network/Entity Location** field, enter the first few characters of a network location code or network entity code, then select from the list that appears.
   b. In the **Device Identifier** field, enter the first few characters of a device identifier, then select from the list that appears.
7. (Optional) In the **Intermediate Node** column, repeat step 6.
8. In the **Target** column, repeat step 6.
9. (Optional) Select **Include Jumpers in Path** if you want to include any jumpers in the path.
10. From **Cost Effective Routing**, select a routing type that changes the values in **Filter By** and **Algorithm** fields accordingly. The available routing options are: **Equal Weights (Hops)** and **Least Cost**.
11. (Optional) From **Algorithm**, select an algorithm to control the topological view of the path analysis.

> **Note:**
>
> The algorithm options change based on the **Cost Effective Routing** option you select.

12. From **Filter By**, select an option to filter the path analysis.

> **Note:**
>
> The **Filter By** options change based on the **Cost Effective Routing** option you select.

13. From **K(# of Paths)**, select the number of paths you want to view.

> **Note:**
>
> This field is enabled only if **Algorithm** is either **Top K Shortest** or **Top K Cheapest**. These two **Algorithm** values populate based on the **Cost Effective Routing** option selected.

14. Select **Custom Tuning** to control the number of paths returned.
15. Click **Analyze**.

    The Gap Analysis Results section appears below the Gap Analysis section. The proposed paths are categorized by the number of hops they contain.
16. Click the triangle for a row to see a proposed path.
17. Select the button for a path, then click **Assign**.

    The table displays the connectivity assignment and may also display interconnections and additional gaps.

Automatically Resolving Gaps by Using Path Analysis

You can use path analysis to find Pipe entities that resolve connectivity gaps in a Connectivity entity. Pipes must be terminated on network devices (logical devices associated to network locations) to be used for this purpose.

When you enter the criteria for the path analysis, you use the same techniques as when running a path analysis from a Pipe entity Summary page. See "Running a Path Analysis" for information about entering the criteria.

To resolve a gap by using path analysis:

1. Open a Connectivity Details page.
2. Click the **Connectivity Design** tab.
3. If necessary, select the path.
4. Click the **Gap Analysis** button near the **Gap** icon.
5. Select **Pipe** from the menu that appears.

   The Path Analysis section appears in the page.
6. Enter path analysis criteria.
7. Click **Analyze**.

   The Gap Analysis Results section appears below the Path Analysis section in the page. The proposed paths are categorized by the number of hops they contain.
8. Click the triangle for a row to see a proposed path.
9. Select the button for a path, then click **Assign**.

The table displays the connectivity assignment and may also display interconnections and additional gaps.

Deleting a Connectivity Segment

After you have assigned transport to a segment, you can delete the transport and any interconnections that have been automatically created to support it.

To delete a connectivity segment:

1. Open a Connectivity Details page.
2. Click the **Connectivity Design** tab.
3. If necessary, select the path.
4. Click the button for a segment, which may incorporate more than one row.

   The rows pertaining to the segment are selected.
5. Click the **Delete** button in the toolbar.

   The connectivity segment is deleted.

Unassigning Transport From a Design

You can unassign a connectivity or pipe from a design path segment.

To unassign transport assignment:

1. Open a Connectivity Details page.
2. Click the **Connectivity Design** tab.
3. If necessary, select the path.
4. Click the **Unassign** icon next to the identifier for an assigned pipe or connectivity.

   The transport assignment is removed.

Adding an Interconnection

You can add a trail-bound cross-connect or a jumper to resolve a gap that exists between two device interfaces in the same network location. If the gap is between root-level device interfaces (including device interfaces on different logical devices) UIM creates a jumper. If the gap is between device interfaces on the same logical device and not between root-level device interfaces, UIM creates a cross-connect.

UIM displays an error message if you try to add an interconnection that includes an interface that terminates a pipe or connectivity not included in the connectivity you are designing.

To add an interconnection:

1. Open a Connectivity Details page.
2. Click the **Connectivity Design** tab.
3. If necessary, select the path.
4. Click the **Create Interconnection** icon in a row.

   The Associate Device Interface dialog box appears, which includes search criteria. The **Network/Entity Location** field is populated with the location in which the two interfaces exist.

5. Enter additional search criteria if necessary, then click **Search**.

   Search results are displayed below the search criteria.

6. Select an interface, then click **OK**.

   The search area is removed and an interconnection is created.

Viewing Transport Details

You can view the details of the transport assigned to a connectivity segment.

To view transport details:

1. Open a Connectivity Details page.
2. Click the **Connectivity Design** tab.
3. If necessary, select the path.
4. Click the link for a pipe or a channel that is assigned to a segment.

   The Details page or Summary page for the pipe or channel appears.

Viewing Network Details

You can open the Network Summary page for the network associated with a device interface or transport entity that is included in the connectivity path.

To view network details:

1. Open a Connectivity Details page.
2. Click the **Connectivity Design** tab.
3. If necessary, select the path.
4. Click the network icon in a row segment.

   The Network Summary page appears.

Assigning Flow Identifiers in the Connectivity Design Tab

You can assign flow identifiers while you are designing packet connectivities You can assign flow identifiers to the connectivity being designed or to individual segments in the design.

When you assign a flow identifier during connectivity design, it is assigned to the connectivity and referenced by one or both of its flow interfaces.

You can also assign flow interfaces while you are designing packet virtual networks. See "Assigning Flow Identifiers in the Network Topological View" for more information.

Related Topics

Assigning Flow Identifiers to the Connectivity Being Designed

Assigning Flow Identifiers to a Connectivity Segment

Unassigning Flow Identifiers

Assigning Flow Identifiers to the Connectivity Being Designed

When you assign a flow identifier to a connectivity that you are designing, you can choose to have the flow identifier referenced by both terminating flow interface or by only one.

1. Open a Connectivity Details page.
2. Click the **Connectivity Design** tab.
3. Do one of the following:

   To assign the flow identifier and have referenced by both flow interfaces:

   a. In the tool bar, click the **Assign Flow Identifier to Both Ends** icon.

      The Flow Identifier Search page appears.

   b. Search for and select a flow identifier.

      The selected flow identifier is assigned to the connectivity and referenced by the flow interfaces that terminate it.

   To assign the flow identifier and have it by only one flow interface:

   a. In **A Location** or **Z Location** column for the connectivity, click the **Assign Flow Identifier** icon.

      The Flow Identifier Search page appears.

   b. Search for and select a flow identifier.

      The selected flow identifier is assigned to the connectivity and referenced the flow interfaces at the A or Z location.

Related Topics

Assigning Flow Identifiers to a Connectivity Segment

Unassigning Flow Identifiers

Assigning Flow Identifiers to a Connectivity Segment

Connectivity segments enable the connectivity you are designing. When you assign a flow identifier to a connectivity segment, you are assigning it to the enabling connectivity, not to the connectivity being designed. The flow identifier is also referenced by the flow interfaces that were created when the segment was added to the design.

> **Note:**
>
> Flow Identifier assignment is allowed for both packet service connectivity and standalone service connectivity.

1. Open a Connectivity Details page.
2. Click the **Connectivity Design** tab.
3. In a connectivity segment, click the **Assign Flow Identifier** icon.

   The Flow Identifier Search page appears.
4. Search for and select a flow identifier.

The selected flow identifier is assigned to the connectivity and referenced by the flow interfaces that terminate it.

Related Topics

Assigning Flow Identifiers to the Connectivity Being Designed

Unassigning Flow Identifiers

Unassigning Flow Identifiers

You can unassign flow identifiers from connectivities being designed and from connectivity segments. When you unassign a flow identifier, it is also de-referenced from flow interfaces.

If a connectivity has a flow identifier assigned to it and referenced by both flow interfaces, removing the flow identifier from one of the flow interfaces does not remove the assignment to the connectivity.

1. Open a Connectivity Details page.
2. Click the **Connectivity Design** tab.
3. In the toolbar, in an A or Z location of the connectivity being designed, or in a connectivity segment, click the **Unassign Flow Identifier** icon.

   The flow identifier is unassigned and de-referenced.

Related Topics

Assigning Flow Identifiers to the Connectivity Being Designed

Assigning Flow Identifiers to a Connectivity Segment

Working with the Connectivity Design Visualization

You can view a schematic visualization of a connectivity design in the **Schematic** subtab of the **Connectivity Design** tab. The visualization represents the same information shown in tabular form in the **Design** subtab. You can choose to view the current design or a previous design version.

The visualization uses icons to represent the various elements of the connectivity design. The icons are a combination of those used in network visualizations and those used in the **Design** subtab. See "Connectivity Design Tab" and "Network Topological View Page" for illustrations of the icons.

The **Schematic** subtab includes tools that you use to control the view. Many of these tools are common to all similar features in UIM. See "Working with Visualizations and Diagrams" for more information.

See the following topics:

- Opening a Connectivity Design Visualization
- Highlighting a Connectivity Path
- Viewing Termination Details
- Schematic Subtab

Opening a Connectivity Design Visualization

The **Schematic** subtab in the **Connectivity Design** tab contains a visualization of the connectivity design that is shown in tabular form in the **Design** subtab.

To open the connectivity design visualization:

1. Open the Summary page of a connectivity.
2. Click the **Connectivity Design** tab, then click the **Schematic** subtab.

   The current connectivity design is displayed visually in the tab.
3. (Optional) Select a previous connectivity design version in the **Design Versions** list.

   The selected connectivity design version is displayed visually in the tab.

Related Topics

Highlighting a Connectivity Path

Viewing Termination Details

Viewing a Previous Design Version

Highlighting a Connectivity Path

If a connectivity design includes two paths, both are shown in the connectivity design visualization. You can highlight either of the two paths to make it more visible.

To highlight a path in the connectivity design visualization:

1. In the **Connectivity Design** tab, click the **Schematic** subtab.
2. Click the **Path 1** or **Path 2** link.

   The path whose link you clicked is highlighted in green. Clicking the other path link toggles the highlighting.

Related Topics

Opening a Connectivity Design Visualization

Viewing Termination Details

Viewing a Previous Design Version

Viewing Termination Details

The connectivity design visualization displays A and Z network locations as well as devices or network locations on which connectivities are terminated. Devices and network locations are shown as icons. You can expand the icons to view more detailed termination information. For example, you can expand a device to see the device interfaces on which connectivities are terminated and any interconnections between those interfaces.

You can view termination details for individual devices and locations or for all devices and locations in the visualization.

To view termination details for a single device or locations:

1. In **Connectivity Design** tab, click the **Schematic** subtab.

The connectivity design visualization appears.

2. Click the plus icon in a device or location icon.

   The icon expands into a box shape.

3. Hover the mouse cursor over the device or location to view the label that shows device interface and physical port details.

4. Click the minus icon to collapse the box to an icon.

To view all termination details:

1. In the toolbar, click **Open Subgraphs**.

   All termination points in the visualization expand to show their resource termination.

2. Click **Close Subgraphs** to collapse all the termination points.

Related Topics

Opening a Connectivity Design Visualization

Highlighting a Connectivity Path

Viewing a Previous Design Version

Viewing Connectivity Design in Map View

You can view connectivity design in a map from the Map View page. The Map View page for a Connectivity uses the default settings present in topologyProcess.properties file.

To open the Map View page and view the connectivity design on a map:

1. Open a Connectivity Details page.
2. Click the **Connectivity Design** tab.
3. Click the **Map View** tab under the Connectivity Design tab.

   The Map View page appears.

4. Use the Map View page of a connectivity to view the trail connectivity and all its design segments in all paths.

   See "Map View Page" for more information.

> **Note:**
>
> You cannot make any changes to the connectivity from the Map View page, but you can use tools to control the map display. You can make any changes to the connectivity from the **Connectivity Design** tab.

5. Double-click on any location in the map to view the corresponding latitude and longitude coordinates.

Related Topics

Getting Information about Nodes in the Map View

Getting Information About Edges in the Map View

Working with Map Profiles

Viewing a Connectivity Hierarchy

You can view all the layers in a connectivity hierarchy using the **Hierarchy** subtab in the **Connectivity Design** tab.

To view the connectivity hierarchy:

1. Open a Connectivity Details page.
2. Click the **Connectivity Design** tab.
3. Click the **Hierarchy** tab under the **Connectivity Design** tab.

   The hierarchy of the current design connectivity appears.
4. From the **Paths** list, select the path you want to view.

   The path you selected is highlighted in green. Selecting any other path toggles the highlighting.
5. Click the plus icon in a device or location icon.

   The icon expands into a box shape showing all the cross connects.

> **Note:**
>
> To close the box, click the minus icon.

6. Select an element in the hierarchy diagram and navigate to the information section on the right of the page.

   The name and ID of the entity appears.

> **Note:**
>
> You can view the corresponding entity summary page by clicking on the link from the information section.

7. In the upper-right corner of the page, click **Design Versions**.

   The Design Versions dialog box appears, displaying a list of current and previous versions.

> **Note:**
>
> You can create a new version from the Design Versions dialog box by clicking **Create New Version**.

Configuring Capacity of Channelized Connectivity

You use the **Capacity** tab in the Connectivity Details page to configure the signal structure of a channelized connectivity based on the rate code applied to it. You select from the channel structures that are valid for the rate code and technology applied to the connectivity. You can configure a the entire signal structure automatically or you can configure the channels individually.

See the following topics:

- Working with the Capacity Hierarchy Display
- Changing Channel Availability
- Configuring Capacity Automatically
- Configuring Capacity Manually
- Removing a Capacity Configuration

Working with the Capacity Hierarchy Display

The capacity hierarchy shows the signal structure with rate codes displayed as linked nodes. You can change many aspects about the display, including the number and arrangement of nodes and levels.

See the following topics:

- Opening and Closing Levels
- Viewing Hidden Nodes in a Level
- Isolating Nodes
- Viewing Node Information
- Changing the Capacity Hierarchy Layout
- Zooming In the Capacity Hierarchy
- Moving In the Capacity Hierarchy Display

Opening and Closing Levels

When you first open the capacity hierarchy, only the top-level node is displayed, even if additional levels exist. You must open levels to see the nodes they contain. You must open each successive level individually.

To open a level:

1. Navigate to **Capacity** tab of the Connectivity Details page.
2. Click the small triangle on the bottom or side of a node.

   The triangle expands and displays a plus sign.
3. Click the plus sign.

   The next level in the hierarchy appears.

To close a level:

1. In the **Capacity** tab, click the small triangle on the bottom or side of a node that connects to the lower level.

   The triangle expands and displays a minus sign.
2. Click the minus sign.

   The next lower level in the hierarchy (and any lower levels that are displayed) is no longer visible.

Related Topics

Zooming In the Capacity Hierarchy

Isolating Nodes

Changing the Capacity Hierarchy Layout

Viewing Hidden Nodes in a Level

A level in a hierarchy can contain many nodes, not all of which are visible at the same time. (The number of visible nodes depends on the zoom level and layout of the display.) You can move through the nodes at a level by using controls in the display.

To view hidden nodes in a level:

1. Navigate to **Capacity** tab of the Connectivity Details page.
2. Place the cursor over the arrowhead at the end of a line that connects the nodes in a level.

   The arrowhead expands into a triangle icon and a triangle-and-line icon.
3. Click the triangle icon to move to the next or previous group of nodes. Click the triangle-and-line icon to move to the first or last group of nodes in the level.

Related Topics

Opening and Closing Levels

Isolating Nodes

You can isolate a node, thereby hiding other nodes. This feature is useful when the hierarchy is complex and contains many nodes and levels.

To isolate a node:

1. Navigate to **Capacity** tab of the Connectivity Details page.
2. Expand the display so that more than one node is shown.
3. Place the cursor over the small triangle projecting from the side of the node opposite to the line that connects it to other nodes.

   The triangle expands to show an apostrophe icon.
4. Click the apostrophe icon.

   All nodes disappear except for the one whose icon you clicked.
5. Click the apostrophe icon again to return to the full display of nodes.

Related Topics

Opening and Closing Levels

Viewing Hidden Nodes in a Level

Viewing Node Information

Each node displays information about the connectivity or channel it represents. Each node has two pages that you switch between:

- The first page includes the Express Configuration link and the check box that determines whether a channel is available for consumption.
- The second page displays information about channelization and the percent of capacity that is available for consumption.

To switch node pages:

- Click the arrow button on either side of the node. Alternatively, click the square icons in the node. The squares represent the node's pages.

Changing the Capacity Hierarchy Layout

You can choose from several layouts that determine how the capacity hierarchy is arranged:

- **Vertical, Top Down**. Nodes are arranged vertically with the highest level at the top.
- **Horizontal, Left to Right**. Nodes are arranged horizontally, with the highest level at the left.
- **Tree**. Nodes are arranged in a vertically-oriented tree structure, with lower levels as branches from higher levels.
- **Radial**. Nodes are arranged radially, with the highest level at the center.
- **Circle**. Nodes are arranged with the highest level at the center and lower levels arranged in circles around it.

To change the capacity hierarchy layout:

1. Navigate to **Capacity** tab of the Connectivity Details page.
2. In the **Capacity** tab, click the **Layout** icon in the control section.

   A column of layout icons appears below the control section.
3. Click a layout icon.

   The layout icons disappear and the capacity hierarchy is rearranged.
4. Click **Save** or **Save and Close**.

Zooming In the Capacity Hierarchy

You can zoom in and out of the capacity hierarchy. This feature is particularly useful when a large, complex hierarchy is displayed. You can also set the zoom level to automatically fit the page.

To zoom in the capacity hierarchy:

- In the **Capacity** tab, do one of the following:
  - Slide the zoom indicator in the control section up or down to change the zoom level.
  - Click the **+** or **–** button to zoom incrementally.

To set the zoom level automatically:

- In the **Capacity** tab, click the **Zoom to Fit** icon in the control section.

  The capacity hierarchy zooms in or out to fit in the page.

Moving In the Capacity Hierarchy Display

You can use the pan control to move through the capacity hierarchy display to view different areas. You can also recenter the display automatically.

To move in the capacity hierarchy display:

- In the **Capacity** tab, click an arrow in the pan control to move in the corresponding direction. You can simultaneously rotate the control to reorient the display after panning.

> **Note:**
>
> The control moves the viewing area, not the hierarchy itself. So clicking the left arrow means that the display appears to move to the right across the screen.

To recenter the display automatically:

- In the **Capacity** tab, click the dot in the middle of the pan control.

  The capacity hierarchy display is recentered.

Changing Channel Availability

A check mark in the first page of a node icon indicates whether the channel represented by the node is available for consumption.

- If a check mark is visible, the channel is available for consumption.
- If no check mark is visible, the channel has been multiplexed and is not available for consumption as a whole.

If you want to multiplex a channel that is currently available for consumption, you must deselect the check box. You cannot change the availability of a channel that has already been assigned.

To change channel availability:

1. In the **Capacity** tab, expand a level to display the node for the channel you want to multiplex.
2. De-select the check mark in node.

   The channel is no longer available for consumption.
3. From the list, select a multiplexing option and click **OK**.

   The dialog box closes and UIM configures the signal structure based on your selection. Hierarchy levels above the lowest level are marked as unavailable.
4. Click **Save** or **Save and Close**.

Configuring Capacity Automatically

You can configure the signal structure of connectivity or channel automatically by using the Express Configuration feature. You select the lowest-level channel you want to configure. UIM determines the most efficient signal structure that includes that channel level. It creates any channels or processing signals that are required.

To configure capacity automatically:

1. Open a Connectivity Details page.
2. Click the **Capacity** tab.
3. If necessary, open a level to display the connectivity or channel you want to configure.
4. Click the **Express Configuration** link in the connectivity or channel node.

   The Express Configuration dialog box appears.
5. From the list, select an option.
6. From the **Quantity** list, select an option.

> **Note:**
>
> For SDH technology, you can select the quantity only for **VC4** node.

7. Click **OK**.

   The dialog box closes and UIM configures the signal structure based on your selection. Hierarchy levels about the lowest level are marked as unavailable.

Related Topics

Configuring Capacity Manually

Configuring Capacity Manually

If you do not want the signal structure of a connectivity to be uniformly configured at all levels, you can configure the connectivity's capacity manually. When you manually configure capacity, you work on individual nodes and levels one at a time until the entire signal structure is complete.

To configure capacity manually:

1. Open a Connectivity Details page.
2. Click the **Capacity** tab.
3. Expand the hierarchy to display the connectivity or channel you want to configure.
4. If necessary, deselect the check mark.
5. Click the **Express Configuration** link in the node.

   The Express Configuration dialog box appears.
6. From the list, select an option.
7. From the **Quantity** list, select an option.

> **Note:**
>
> For SDH technology, you can select the quantity only for **VC4**.

8. Click **OK**.

   The dialog box closes and UIM configures the signal structure based on your selection. Hierarchy levels about the lowest level are marked as unavailable.
9. Repeat steps 3 through 6 for each node you want to configure.

Related Topics

Configuring Capacity Automatically

Removing a Capacity Configuration

You can remove a capacity configuration if the connectivity or channel has not been assigned.

To remove a configuration:

1. Open a Connectivity Details page.

2. Click the **Capacity** tab.
3. Expand the hierarchy to display the connectivity or channel whose capacity configuration you want to remove.
4. Click the **Express Configuration** link.

   The Express Configuration dialog box appears.
5. Select **Remove Configuration**, then click **OK**.

   The dialog box closes and the capacity configuration is removed.

Related Topics

Configuring Capacity Manually

Configuring Capacity Automatically

Viewing Channels in a Channelized Connectivity

You use the **Channels** tab in the Connectivity Details page to view the channel hierarchy of a channelized connectivity. The channel hierarchy is based on the signal architecture determined by the connectivity's rate code and the channel configuration you select in the **Capacity** tab. For some technologies, such as SONET, SDH, and DWDM, the channel hierarchy includes signals that organize how the connectivity is channelized.

To view channels:

1. Open the Connectivity Details page of a channelized connectivity.
2. Click the **Channels** tab.

   A table listing the top-level channels is displayed. For channels that have been enabled, the channel ID, inventory status, and connectivity identifier are shown.
3. Expand the hierarchy to view additional channels.
4. (Optional) To see detailed information about an enabled channel, right-click it and select **Navigate to Assigned Connectivity Details**.

   The Connectivity Details page for the selected channel appears. You can return to the original page by using the **Recent Items** menu.

Viewing Riders in a Packet Connectivity

You use the **Riders** tab in the Connectivity Details page to view connectivities or pipes that are enabled by or *ride* a packet connectivity.

To view riders:

1. Open the Connectivity Details page of a packet connectivity.
2. Click the **Riders** tab.

   A table is displayed with the connectivity at the top. If the connectivity has riders, a triangle indicates that you can expand the row.
3. Expand the top-level row to see a list of riders.
4. To see detailed information about a rider, right-click it and select **View Assigned Connectivity Details**.

The Connectivity Details or Pipe Summary page for the selected connectivity or pipe appears. You can return to the original page by using the **Recent Items** menu.

Viewing Information About Consumption of Packet Connectivity with Riders

You can view information about the consumption of capacity of packet connectivities with riders.

When you search for packet connectivities, the search results include highlighting for connectivities whose consumption has reached threshold values. By default, the **Bit Rate** column for packet connectivities with greater than 50% consumption are highlighted in yellow and packet connectivities with greater than 80% capacity are highlighted in red.

Both the threshold values and the colors are configurable. See *UIM System Administrator's Guide* for more information.

To view information about flow interface consumption:

1. Open the Logical Device Summary page of a logical device whose hierarchy includes flow interfaces.
2. In the Logical Device Hierarchy section, expand the hierarchy to display the flow interfaces.

   The **Percent Consumed** column and row highlighting indicate the consumption level of the flow interfaces.

Related Topics

Adding Flow Interfaces to Packet Virtual Networks

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Working with Pipes, Capacity, and Signal Structure

In Oracle Communications Unified Inventory Management (UIM), Pipe entities are a generalized way to represent connectivity in your inventory. In most cases, you can use Connectivity entities instead of pipes. Connectivity entities provide more functionality and require less customization. See "Working with Connectivity " for more information.

The connection represented by a pipe can be physical, such as a cable, or logical, such as traffic flow. Common examples of pipes include cables, cable pairs, jumpers, cross-connects, service links, and local loops.

Every pipe requires two termination points. These termination points can be associated with resources, such as device interfaces, equipment, and ports, to indicate that the pipe is terminated on those resources. You can set the directionality of the pipe between the two termination points.

Pipes can provide other pipes, as in the case of a T3 facility pipe providing T1 channel pipes. Also, pipes can enable each other. For example, a service trail pipe that represents a customer's local telephone service can be enabled by several other pipes that represent cable pair connections between various devices from the central office to the subscriber terminal.

Pipes can be versioned by using pipe configurations. Pipe configurations enable you to update the enablement and termination point assignments as changes are made in your inventory.

Pipes provide and require capacity in the form of bandwidth. You can define the capacity provided and required explicitly or as part of a multiplexing hierarchy defined by a signal structure.

You can include pipes in business interactions, reservations, and inventory groups in the same way that you include other entities. You can also apply conditions, associate places, assign roles, and search for pipes in topology using the same techniques that you use for other entities.

For a more detailed overview of pipes and a description of how you define their specifications, see *UIM Concepts*.

See the following topics for more information about working with pipes, capacity, and signal structure:

- Creating Pipes
- Configuring Existing Pipes for Secondary Enablement
- Working with Termination Points
- Working with Child Pipes
- Working with Pipe Configurations
- Enabling Pipes
- Setting Pipe Capacity and Signal Structure

Creating Pipes

When creating pipes, you can determine whether to version the pipe. This option is available only if the Pipe specification is associated with one or more Pipe Configuration specification.

> **Note:**
>
> If you choose to version a pipe when you create it, you cannot change it later to unversioned status after a version has been created.
>
> You can enable versioning for unversioned pipes that are associated with one or more Pipe Configuration specification.

When you create a Pipe entity, two termination points for it are created automatically. If the Pipe specification includes a Pipe Termination Point specification, it is used to create the termination points. Otherwise, they are created without specification.

To create a Pipe entity:

1. In the **Inventory - Resources** group of the navigation section, click **Pipe**.

   The Pipes Search page appears.

2. In the Search Results section, click **Create**.

   The Pipe Connectivity - New page appears.

3. From the **Specification** list, select the specification you want to use for this pipe.

   The page refreshes to include any customized fields from the specification. If the specification you selected is associated with one or more Pipe Configuration specifications, the **Versioned** check box becomes available.

4. In the **ID** field, enter a unique ID for the entity.

   The ID cannot be changed later. The specification may require that the ID be automatically generated. In these cases, the field is populated with **AUTOGENERATE** and is read only.

5. (Optional) In the **Name** and **Description** fields, enter a name and a description.

6. (Optional) From the **Medium** list, select the option that describes the connection medium.

7. (Optional) From the **Transmission Signal** list, select the option that describes the type of connection.

8. (Optional) Select **Versioned** to version this pipe entity.

9. (Optional) Select **Allow secondary enablement** if you want the pipe to be enabled by both a primary and a secondary path. See "Manually Enabling Pipes" and "Enabling Pipes Automatically with Path Analysis" for more information.

10. Enter appropriate information for all required fields.

    Depending on the specification, there can be any number of additional fields, some of which may be required. Required fields are marked with an asterisk. See "Pipe Connectivity - New Page" for more information about the fields in this page.

11. Click **Save and Continue**.

    The Pipe Summary page for the pipe you created appears. The Termination Points section includes the termination points that were created automatically.

Configuring Existing Pipes for Secondary Enablement

You can configure a pipe for secondary enablement after it has been created, even if it already has one enablement.

To configure an existing pipe for secondary enablement:

1. In the Pipe Information section of Pipe Summary page, click the **Edit** link.

   The Pipe Information page appears.
2. Select **Allow secondary enablement**.
3. Click **Save and Close**.

   The Pipe Summary page refreshes. The **Allow secondary enablement** field is set to **true**.

Working with Termination Points

Every pipe requires exactly two termination points. When you create a Pipe entity, two termination points for it are created automatically. If a Pipe Termination Point specification is related to the Pipe specification, it is used to create the termination points. Pipe Termination Point specifications are typically used to add customized fields to termination points. If no specification is defined, termination points are created without a specification.

A pipe's termination points are listed in the Termination Points section of the Pipe Summary page. The IDs of the termination points are shown, along with the name of their specification (if any) and other information. The ID is displayed as a link to a Summary page for the termination point.

You can also assign resources to termination points. For example, you can assign a device interface to a termination point to indicate that one end of a pipe terminates on that interface. Resource assignments are important for pipe enablement, especially when using path analysis for automatic enablement. See "Enabling Pipes Automatically with Path Analysis" for more information. The way you work with termination point assignments depends on whether the parent pipe is versioned.

Termination points share some of the features of other entities. You can include them in inventory groups, manage their life cycles, and associate them with places.

See the following topics for more information about working with termination points:

- Assigning Resources to Termination Points
- Deleting Termination Point Resource Assignments
- Setting Pipe Directionality
- Deleting Directionality Settings

Assigning Resources to Termination Points

You can assign one or more resources to a termination point to indicate that the pipe terminates at that resource. You can assign any of the following:

- Connector
- Device interface
- Equipment

- Logical device
- Network
- Physical device
- Port

The way you assign resources to termination points is different for versioned and unversioned pipes. See "Assigning Resources to Termination Points for Unversioned Pipes" and "Assigning Resources to Termination Points for Versioned Pipes" for more information.

Related Topics

Deleting Termination Point Resource Assignments

Setting Pipe Directionality

Deleting Directionality Settings

Assigning Resources to Termination Points for Unversioned Pipes

You assign resources for unversioned pipes from the Pipe Summary page. These assignments are valid until you change them.

To assign a resource to a termination point:

1. Open the Summary page of the Pipe entity that contains the termination point to which you want to assign resources.
2. On the **General Information** tab, termination points are shown in the Termination Points section.
3. In the Termination Points section, do one of the following:
   - Click the Terminate at Resource list icon beside the ID link for a termination point.

     A list of resource types appears.
   - Click the ID link for a termination point.

     The Termination Point Summary page appears. Current assignments are shown in the Resource Terminations section for each resource type.

     – In the Resource Terminations section, click **Items**.

       A list of resource types appears.
4. Select a resource type from the list.

   The entity Search page appears for the resource type.
5. Search for or create an entity you want to assign.

   See "Searching for Entities" for more information.
6. In the Search Results section, select an entity.
7. Click **OK**.

   In the Pipe Summary page, the **General Information** tab refreshes. The Termination Points section now displays the resource.

   The Termination Point Summary page refreshes. The Resource Terminations section now displays the resource with a Resource Assignment status of Assigned.

Related Topics

Assigning Resources to Termination Points for Versioned Pipes

Assigning Resources to Termination Points

Assigning Resources to Termination Points for Versioned Pipes

When a pipe is versioned, the Termination Point Summary page that you open from the Pipe Summary page displays lists of assignments for each resource type grouped by version. This enables you to see the assignments that were valid in each version and note how they changed.

Resource assignments for versioned pipes are started from the Pipe Configuration page. The assignments can be updated from version to version of the configuration. The assignments in the current configuration (the one in Complete status) apply. You cannot make changes to assignments in a configuration that has been completed or canceled.

To assign a resource to a termination point in a versioned pipe:

1. Open the Summary page of a versioned Pipe entity.
2. On the **General Information** tab, in the Configurations section, click the link in the **Version** column.

   The configuration version appears in the Pipe Configuration page.
3. In the Pipe Configuration Enablement section, click the ID link for a termination point.

   The termination point ID link appears above the list of enabling pipes. When you click the ID, the Termination Point Summary page for the termination point appears. Current assignments are shown in the Resource Terminations section for each resource type.
4. In the Resource Terminations section, click **Items**.

   A list of resources appears.
5. Select the resource that you want to assign.

   The entity Search page appears.
6. Search for or create an entity you want to assign.

   See "Searching for Entities" for more information.
7. In the Search Results section, select an entity whose Resource Assignment status is Unassigned and click **Associate**.

   The Termination Point Summary page refreshes. The Terminations section now displays the resource with a resource assignment status of Assigned.

Related Topics

Assigning Resources to Termination Points for Unversioned Pipes

Assigning Resources to Termination Points

Deleting Termination Point Resource Assignments

You can delete termination point assignments. Deleting the assignment does not delete the resource entity, but it sets the entity's resource assignment status to Unassigned.

> **Note:**
>
> You cannot remove assignments for configuration versions in Complete or Canceled status.

To delete termination point resource assignments:

1. Do one of the following:
   - For a versioned pipe, open the Pipe Configuration page and click the ID link for a termination point above the list of enabling pipes.
   - For an unversioned pipe, click an ID link in the Termination Point section of the Pipe Summary page.

   The Termination Point Summary page appears.
2. In the Resource Terminations section, select one or more assignments.
3. Click **Delete**.

   The Termination Point page refreshes and the assignments are deleted.

Related Topics

Assigning Resources to Termination Points

Setting Pipe Directionality

You can set the direction that signals or routes flow through a pipe. You set the directionality of a pipe by specifying which termination point is the *source* (starting point) and which is the *sink* (ending point). Signals and routes flow from source to sink.

The Pipe Termination Directionality section of a Pipe Summary page displays the directionality defined for the pipe. There can be up to two directionality settings listed:

- Signal directionality refers to the direction that signals flow on the pipe. Most pipes are bi-directional, meaning that signals flow in both directions. Other pipes are uni-directional, meaning that signals flow in one direction only. Examples of uni-directional pipes are seismograph, alarm, and control operation connections.
- Routing directionality constrains or enables functions such as path analysis. For example, you can define a pipe as uni-directional for routing purposes to constrain the route of a connection from an originating point to a specific terminating point while avoiding certain path segments.

To set pipe directionality:

1. Open the Summary page of the Pipe entity for which you want to set pipe directionality.
2. In the Pipe Termination Directionality section, click **Create**.

   The Pipe Directionality Information page appears.
3. In the **Directionality Type** list, select **Signal** or **Routing**.
4. In the **Pipe Direction** list, select **Uni-Directional**.

> **Note:**
>
> Selecting **Bi-Directional** is equivalent to leaving directionality undefined.

5. In the **Direction Type 1** list, select **Source** if the termination point is a starting point or **Sink** if the termination point is the ending point.
6. In the **Direction Type 2** list, select an option different from the one you selected for **Direction Type 1**.
7. Click **Save and Close**.

   The Pipe Summary page refreshes and includes the new directionality setting. You can modify the directionality settings in the Pipe Termination Directionality section.

Related Topics

Deleting Directionality Settings

Deleting Directionality Settings

To delete a directionality setting:

1. Open the Summary page of the Pipe entity from which you want to delete pipe directionality.
2. In the Pipe Termination Directionality section, select the directionality setting to be deleted.
3. Click **Delete**.

   The directionality setting is deleted.

Related Topics

Setting Pipe Directionality

Pipe Directionality Information Page

You use the Pipe Directionality Information page to define the directionality of a pipe.

> **Note:**
>
> The sections listed in the following table are specific to the Termination Point Summary page. See "Entity Summary Page" and "Actions Menu" for information about Summary page fields that are common among all entities.

Section	Description
Directionality Type	Specifies the type of signal directionality: • **Signal** applies directionality to the signals that flow on the pipe. • **Routing** directionality constrains or enables functions such as path analysis.
Pipe Direction	Specifies a directionality for the type selected in the **Directionality Type** field. Select **Uni-Directional** or **Bi-Directional**. If you do not specify a direction, **Bi-Directional** is assumed.

Section	Description
Termination ID - 1	Displays the ID of the pipe's first termination point. This field is read only.
Termination ID - 2	Displays the ID of the pipe's second termination point. This field is read only.
Inventory Status	Displays the pipe's status. This field is read only.
Date	Displays the pipe's creation date. This field is read only.
Termination Name - 1	Displays the name of the pipe's first termination point. This field is read only.
Termination Name - 2	Displays the name of the pipe's second termination point. This field is read only.
Direction Type - 1	For uni-directional pipes, select **Source** if the first termination point is the starting point or **Sink** if it is the ending point.
Direction Type - 2	For uni-directional pipes, select **Source** if the second termination point is the starting point or **Sink** if is the ending point.

Termination Point Summary Page

You use the Termination Point Summary page to define the content for a termination point.

> **Note:**
>
> The sections listed in the following table are specific to the Termination Point Summary page. See "Entity Summary Page" and "Actions Menu" for information about Summary page fields that are common among all entities.

Section	Description
Information	Displays basic information about the entity. Click **Edit** to change this information. Some data elements, such as the ID, cannot be changed after the entity is created. See "Creating Entities " for more information.
Places	Displays any places that are associated with the termination point. The association can imply that the termination point is located at the place or that there is some kind of relationship between the entities. The fields that appear in the Places section are common among multiple entities. See "Entity Summary Page" for more information. See "Associating Places to Entities" and for information about creating new place associations.
Inventory Groups	Displays any inventory groups to which the termination point is associated. You use inventory groups to organize entities for a particular purpose. The fields that appear in the Inventory Group section are common among multiple entities. See "Entity Summary Page" for more information. See "Adding an Entity to an Inventory Group from the Entity Summary Page " for information about associating entities with an inventory group.

Section	Description
Resource Termination	Displays the entities that are assigned to the termination point. You can assign one or more resources to a termination point to indicate that the pipe terminates at that resource. See "Assigning Resources to Termination Points" for more information.

Related Topics

Working with Termination Points

Searching for Entities

Working with Child Pipes

If a Pipe specification is associated with child Pipe specifications and does not have a signal structure, you can add child pipes to the parent. These child pipes are provided by a parent pipe. For example, if you have a Pipe entity for a 25-pair cable, you can add 25 cable-pair Pipe entities to it.

When you create a parent Pipe entity, child pipes are created automatically based on the minimum quantity specified by the parent Pipe specification. You can add additional child pipes up to the maximum specified in the relationship between the parent and child Pipe specifications. If more than the minimum number of child pipes have been added, you can delete pipes until the minimum is reached.

See the following topics for more information about working with child pipes:

- Viewing Child Pipes
- Adding Child Pipes
- Deleting Child Pipes

Viewing Child Pipes

To view child pipes:

1. Open the Summary page of the Pipe entity for which you want to view child pipes.
2. From the **Related Pages** menu, select **Provides**.

   The Pipe Provides page appears, listing any child pipes.

Related Topics

Adding Child Pipes

Deleting Child Pipes

Adding Child Pipes

You can add child pipes to a Pipe entity, up to the maximum number specified by its specification. You can add only Pipe specification entities that are included in the parent Pipe specification.

If you create more than one pipe, the same identifying information, such as name, description, and so on, will be used for all. Versioning is not available for child pipes.

To add child pipes:

1. Open the Summary page of the Pipe entity for which you want to add child pipes.
2. From the **Related Pages** menu, select **Provides**.

   The Pipe Provides page appears, listing any child pipes.
3. Click **Create**.

   The Pipe Edit - New page appears.
4. In the **Specification** list, select a specification that is valid for child pipes of this parent pipe.

   The page refreshes to include any customized fields from the specification. If the specification you selected is associated with one or more Pipe Configuration specifications, the **Versioned** check box becomes available.
5. (Optional) In the **ID** field, enter a unique ID for the child pipes.

   If you do not enter an ID, UIM generates sequential IDs that are based on the parent pipe ID.
6. (Optional) In the **Name** and **Description** fields, enter a name and a description.
7. (Optional) In the **Medium** list, select the option that describes the connection medium.
8. (Optional) In the **Transmission Signal Type** list, select the option that describes the type of connection.
9. In the **Quantity** field, enter the number of pipes you want to add.

   UIM displays an error if the number exceeds the maximum defined by the parent Pipe specification.
10. Enter information for all other required fields.

    Depending on the specification, there can be any number of additional fields, some of which may be required. Required fields are marked with an asterisk. See "Pipe Connectivity - New Page" for more information about the fields in this page.
11. Click **Save and Close**.

    The Pipe Provides page refreshes to include the new child pipes. If you attempted to create child pipes that are not valid for the parent pipe or tried to create more than the maximum number allowed, UIM displays an error message.

Related Topics

Viewing Child Pipes

Deleting Child Pipes

Deleting Child Pipes

You can delete child pipes from a parent pipe. You can delete only the number of child pipes that exceeds the minimum defined by the parent Pipe specification. If a child pipe is involved in a pipe enablement, it cannot be deleted.

To delete child pipes:

1. Open the Summary page of the Pipe entity from which you want to delete child pipes.
2. From the **Related Pages** menu, select **Provides**.

   The Pipe Provides page appears, listing any child pipes.

3. Select the child pipes to be deleted.
4. Click **Delete**.

   The selected pipes are deleted. If the deletion process would have reduced the number below the minimum defined by the parent Pipe specification, UIM makes no deletions and displays an error message.

Related Topics

Viewing Child Pipes

Adding Child Pipes

Pipe Provides Page

The Pipe Provides page displays a list of child pipes provided by the parent pipe. You can add or delete pipes from the list.

The Pipe Provides page includes a single section.

Field	Description
Pipe Provides	Lists the parent pipe's child pipes. See "Adding Child Pipes" and "Deleting Child Pipes" for information about tasks you can perform in the list.

Related Topics

Working with Child Pipes

Working with Pipe Configurations

Pipe configurations enable you to maintain versions that can change over time.

> **Note:**
>
> You can use pipe configurations only if the pipe's specification is related to a Pipe Configuration specification. In addition, you can add a configuration only if the pipe is defined as versioned. See "Creating Pipes" for information about versioning pipes.

Pipe configurations are more narrowly focused than other types of configurations: they are used only to define specification options for pipe enablement and termination point assignment. Pipe Configuration specifications can define specification options for the following:

- Transport—The configuration specification can define that particular Pipe specification entities be used for enablement. For example, a pipe configuration specification for a POTS local service trail might limit the enablement to particular entities based on the cable-pair specification.
- Intermediate node—This specifies a node that would not ordinarily be in a least number of hops path determined by path analysis.
- Termination—The configuration specification can define that resource assignments for some or all entity types be limited to entities of particular specifications. For example, a

configuration specification could define that only particular Equipment specification entities could be assigned to the originating termination point.

> **Note:**
>
> The resource assignment definitions in a configuration specification are limited by entity type. For example, limiting resource assignment to a particular Equipment specification limits only the assignment of Equipment entities. You can assign entities based on any specification of other entity types.

The specification options in a configuration specification are enforced when you configure enablement or resource assignment. They also apply during automatic enablement using path analysis. See "Assigning Resources to Termination Points" and "Enabling Pipes" for more information.

Enablement and resource assignment selections you make in a pipe configuration become effective when the configuration is completed. You can create a new configuration version only when the previous version has been completed or canceled. Changes in the new version become effective when the version is completed.

Pipe Configuration Information - New Version Page

You use the Pipe Configuration Information - New Version page to create new pipe configurations.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Select a Pipe Configuration specification to use for the new configuration version. See *UIM Concepts* for more information about configuration specifications.
ID	Enter a unique ID for the configuration or accept the default. The default value is based on the ID of the parent pipe with an incremented version number.
Name	Enter a name for the configuration or accept the default. The default value is based on the name of the parent pipe with an incremented version number.
Previous Configuration	Displays the version number of the previous configuration, if any. If you are creating the first configuration version, this value is **0**. This field is read only.
Version	Displays the sequential version number of the configuration you are creating. This field is read only.
Start Date	Enter the date on which the configuration will become active.

Related Topics

Working with Pipe Configurations

Pipe Configuration Information Page

You use the Pipe Configuration Information page to modify a pipe configuration. This page is available only before the configuration is completed.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Displays the name of the specification used to create the configuration. See *UIM Concepts* for more information about configuration specifications.
ID	Modify the ID for the configuration. The default value is based on the ID of the parent pipe with an incremented version number.
Name	Modify the name of the configuration. The default value is the same as the ID.
Previous Configuration	Displays the version number of the previous configuration, if any. If you are creating the first configuration version, this value is **0**. This field is read only.
Version	Displays the sequential version number of the configuration you are creating. This field is read only.
Start Date	Modify the date on which the configuration will become active.

Related Topics

Working with Pipe Configurations

Pipe Configuration Page

You use the Pipe Configuration page to define specification options for pipe enablement and termination point resource assignment.

See the following topics for more information about tasks you can complete in Pipe Configuration pages:

- Related Pages Menu
- Actions Menu

> **Note:**
>
> The sections listed in the following table are specific to the Pipe Configuration page. See "Related Pages Menu" and "Actions Menu" for information about fields that are common among all entities.

Section	Description
Information	Displays basic information about the entity, most of which was defined when you created the entity. Click **Edit** to change this information. Some data elements, such as the ID, cannot be changed after the entity is created. See "Creating Entities " and "Configuration New Page" for more information.
Primary Path Enablements	Specify the pipes that enable the parent pipe of the configuration. In most cases, the Pipe Configuration specification defines the pipes that can be selected. If secondary enablement is not selected, this is the only enablement section. See "Enabling Pipes" for more information.
Secondary Path Enablements	If the pipe is configured for secondary enablement, specify the pipes that provide secondary enablement for the parent pipe of the configuration. In most cases, the Pipe Configuration specification defines the pipes that can be selected. See "Enabling Pipes" for more information.
Pipe Enabled By	If the pipe is manually configured, you can navigate to the corresponding pipe summary page by clicking the ID value from this field.

Related Topics

Working with Pipe Configurations

Enabling Pipes

A pipe can be enabled by one or more other pipes. The enabling pipes establish the connectivity represented in the enabled pipe. For example, a POTS service trail represents the connectivity from a voice switch in a central office to the subscriber terminal. This service trail is enabled by a number of different pipes, including cable pairs between the main distribution frame (MDF) to a cross-connect terminal and from the cross-connect terminal to the subscriber terminal.

Pipes can also be enabled by two connectivity paths. For example, in a SONET or SDH network, a service trail can be enable by a primary path and a secondary (or *protection*) path.

You can enable pipes in two ways:

- You can manually configure the enablement, which involves specifying the enabling cable pairs and their termination points. UIM can automatically create gap pipes to bridge gaps between pipes.
- You can have UIM automatically configure the enablement using path analysis. Path analysis calculates a least-number-of-hops path between two points that you specify.

When you enable a pipe manually or automatically, UIM ensures that the enabling pipes offer the bandwidth required. When you enable a pipe with a channel in a signal structure, UIM by default ensures that the channel has precisely the capacity required by the pipe. You can configure signal structures so that they can support not only signals of exactly matching

capacity but also signals of lesser capacity. For instance, a SONET STS1 channel with a bit rate of 51.840 Mbps can support an STS transmission facility of 51.840 Mbps capacity and also a DS3 facility at a rate of 44.736 Mbps. See *UIM Concepts* and the Design Studio Help for more information about configuring Signal Termination Point specifications for compatible signals.

See the following topics for more information about enabling pipes:

- Manually Enabling Pipes
- Enabling Pipes Automatically with Path Analysis
- Viewing Pipe Enablement Information
- Modifying a Pipe Enablement
- Viewing a Pipe Enablement Visualization

Manually Enabling Pipes

The method you use to manually enable pipes depends on whether the pipe is versioned and whether it is enabled by one or two connectivity paths.

When you manually configure enablement, UIM can automatically create gap pipes to ensure that there is a continuous path from the originating termination point to the terminating termination point. A gap pipe is required when the enabling pipes you specify do not share a common termination point. For example, if CablePairA has termination points 112 and 113 with 112 set as the originating termination point and CablePairB has termination points 122 and 123 with 123 set as the terminating termination point, UIM creates a gap pipe between termination points 113 and 122.

In a POTS scenario, for example, a cable pair from the MDF terminates on a cross-connect terminal and another cable pair connects the cross-connect terminal block to the subscriber terminal. When you set up the enablement in UIM, a gap pipe would be created to represent a jumper that connects the two termination points on the cross-connect terminal. When the jumper is physically created, you can update the gap pipe entity to reflect information about the jumper.

If you change your mind after beginning to manually enable pipe, you can switch to automatic enablement (path analysis) by clicking the **Alternate Primary Paths** button. After you have already manually enabled a primary path, you can switch to path analysis for the secondary path by clicking the **Alternate Secondary Paths** button. See "Enabling Pipes Automatically with Path Analysis" for more information about automatic enablement.

See the following topics for more information about manually enabling pipes:

- About Pipe Enablement Lists
- Manually Enabling an Unversioned Pipe
- Manually Enabling a Versioned Pipe

About Pipe Enablement Lists

When you open the Manual Configure and Pipe Configuration pages, the enabling pipes are displayed in a list.

For each enabling pipe, the list includes columns for the sort order, parent pipe information, child pipe information, and assignment status.

The parent and child pipe and termination point information enables you to see information about all pipes involved in the enablement, including their parents. For example, a cable pair pipe is likely to be a child of another pipe, such as a 100-pair cable. When you include a cable pair in the enablement, the cable pair's name and termination points are shown in the Child TP and Child Pipe columns. The Parent TP and Pipe columns show the name and termination points of the 100-pair cable pipe.

The **Originating Termination Point** and **Terminating Termination Point** fields above the list enable you to set the originating and terminating termination points. In the Pipe Configuration page, the termination points of the pipe being enabled are displayed as links next to these fields. You can use these links to change the resource assignments of the termination points for the configuration. See "Assigning Resources to Termination Points for Versioned Pipes" for more information.

Related Topics

Manually Enabling an Unversioned Pipe

Manually Enabling a Versioned Pipe

Manually Enabling an Unversioned Pipe

To manually enable an unversioned pipe:

1. Open the Summary page of the Pipe entity for which you want to manually enable an unversioned pipe.
2. From the **Related Pages** menu, select **Manually Configure**.

   The Manual Configure page appears. If the pipe is configured for secondary enablement, the page contains both a Primary Path Enablement and a Secondary Path Enablement section. If it is configured for single enablement, only the Primary Path Enablement section is displayed.
3. Click **Associate**.

   The Associate Pipes dialog box appears.
4. Search for or create a Pipe entity.
5. In the Search Results section, select the Pipe entity.
6. Click **OK**.

   The new Pipe entity appears in the Manual Configure page.
7. (Optional) Edit the numbers in the **Sort Order** column and click the **Sort** to change the order in which the pipes appear.

   Pipes should be listed so that the pipe with the originating termination point is first and the pipe with the terminating termination point is last.
8. Click the **Change** link next to **Originating Termination Point** above the list of enabling pipes.

   The Termination Points for Pipes dialog box appears, listing the termination points for the first pipe in the list.
9. Select a termination point to be the originating termination point and click **Choose**.

   The termination point you selected appears next to **Originating Termination Point**.
10. Click the **Change** link next to **Terminating Termination Point** above the list of enabling pipes.

The Termination Points for Pipes dialog box appears, listing the termination points for the last pipe in the list.

11. Select a termination point to be the terminating termination point and click **Choose**.

    The termination point you selected appears next to Terminating Termination Point.

12. Click **Save and Update**.

    UIM checks to ensure that the enabling pipes offer the capacity required by the trail pipe. An error is displayed if there is insufficient capacity. If sufficient capacity exists, UIM creates the gap pipes necessary to create a continuous path from the originating termination point to the terminating termination point. The gap pipes are inserted in their correct positions in the list and the other pipes are reordered as necessary.

13. If the pipe is configured for multiple enablement, repeat steps 2 through 11 in the Secondary Path Enablement section.

Related Topics

About Pipe Enablement Lists

Manually Enabling a Versioned Pipe

Manually Enabling a Versioned Pipe

In a versioned pipe, you can create a different enablement in each configuration version. Changing the enablement is often the reason for creating a new version. After a configuration version has been completed or canceled, you cannot change its enablement. You must create a new configuration version for the updated enablement.

You use the Pipe Configuration Enablement section in the Pipe Configuration page to specify the pipes that enable the parent pipe of the configuration. In most cases, the Pipe Configuration specification will have defined the pipes that can be selected.

To manually enable a versioned pipe:

1. Open the Summary page of the Pipe entity that contains a version that you want to manually enable.
2. In the Configurations section, click the link in the **Version** column.

   The configuration version appears in the Pipe Configuration page.

3. In the Primary Path Enablement section, click **Associate**.

   The Add Pipes Search page appears. All returned search results will relate to the entities based on the specifications that are defined as options for the Transport configuration option. If no specifications have been defined, you can search for any pipe.

4. Search for or create a Pipe entity.
5. In the Search Results section, select the Pipe entity.
6. Click **OK**.

   The new pipe appears in the Pipe Configuration Summary page Pipe Configuration Enablement section.

7. (Optional) Enter appropriate numbers into the fields in the **Sort Order** column and click the **Sort** button to change the order in which the pipes appear.

   Pipes should be listed so that the pipe with the originating termination point is first and the pipe with the terminating termination point is last.

8. Click the **Change** link next to **Originating Termination Point** above the list of enabling pipes.

   The Termination Points for Pipes dialog box appears, listing the termination points for the first pipe in the list.

9. Select a termination point to be the originating termination point and click **Choose**.

   The termination point you selected appears next to Originating Termination Point.

10. Click the **Change** link next to **Terminating Termination Point** above the list of enabling pipes.

    The Termination Points for Pipes dialog box appears, listing the termination points for the last pipe in the list.

11. Select a termination point to be the terminating termination point and click **Choose**.

    The termination point you selected appears next to **Terminating Termination Point**.

12. In the **Actions** menu, select **Manual Configure**.

    UIM checks to ensure that the enabling pipes offer the capacity required by the trail pipe. An error is displayed if there is insufficient capacity. If sufficient capacity exists, UIM creates the gap pipes necessary to create a continuous path from the originating termination point to the terminating termination point. The gap pipes are inserted in their correct positions in the list and the other pipes are reordered as necessary.

13. If the pipe is configured for multiple enablement, repeat steps 2 through 11 in the Secondary Path Enablement section.

Related Topics

About Pipe Enablement Lists

Manually Enabling an Unversioned Pipe

Enabling Pipes Automatically with Path Analysis

You can use path analysis to automatically enable a pipe. Path analysis finds a path based on criteria that you enter and presents you with a number of possible paths from which to choose. You can search for paths between any of the following:

- Equipment
- Logical device (including devices configured as network entities)
- Network
- Network node
- Physical device
- Place (site and location only)
- Network locations (Property Location entities that have been configured as network locations)

If the pipe you are enabling is configured for multiple enablement, you can use path analysis to find both primary and the secondary connectivity paths. If the pipes and entities associated with them are included in a network, path analysis takes the network's **Protection Type** setting into account when finding secondary paths. For example, different secondary paths may be returned for a network with USPR protections and one with BSLR/2 protection.

Similarly, path analysis considers whether the network is configured for same channel assignment. If a network is configured with this data element, path analysis does not return paths in which it is not possible to ensure that the signal remains on the same channel throughout the path. This may result in no paths being returned even when connectivity exists. See "Creating Networks" for more information.

See *UIM Concepts* and *UIM Developer's Guide* for more information about path analysis.

See the following topics for more information about enabling pipes automatically with path analysis:

- Running a Path Analysis
- About Intermediate Nodes for Path Analysis
- Viewing Paths in Topology
- Path Analysis Page

Running a Path Analysis

You run path analysis to automatically enable a pipe. Path analysis finds a path based on criteria that you enter and presents you with possible paths from which to choose.

To enable a pipe by running path analysis:

1. Open the Summary page or the Pipe Configuration page of the Pipe entity for which you want to run a path analysis.
2. From the **Related Pages** menu, select **Path Analysis**.

   The Path Analysis page appears.

   > **Note:**
   >
   > If a pipe is terminated at a source and at a target, the source type, source ID, target type, and target ID are prepopulated in the Path Analysis page. You can modify the prepopulated values for the source and target to perform partial path analysis between intermediate nodes.

3. In the **Source Type** list, select the type of entity that represents the source.
4. In the **Source ID** field, enter the ID of the source entity.

   To locate a source ID:

   a. Click **Search**.

      The Search page appears for the source entity.

   b. Search for an existing entity, or create a new entity.

      See "Searching for Entities" and "Creating Entities " for more information.

   c. In the Search Results section, select an entity.

   d. Click **OK**.

      The ID appears in the **Source ID** field.

> **Note:**
>
> If the source entity is part of a logical device, physical device, or equipment hierarchy, specify the highest-level entity in the hierarchy as the source.

5. (Optional) Specify information about an intermediate node in the **Intermediate Type** and **Intermediate ID** fields.

   See "About Intermediate Nodes for Path Analysis" for more information.

6. In the **Target Type** list, select the type of entity that represents the target.

7. In the **Target ID** field, enter the ID of the target entity.

   To locate a target ID:

   a. Click **Search**.

      The Search page appears for the target entity.

   b. Search for an existing entity, or create a new entity.

      See "Searching for Entities" and "Creating Entities " for more information.

   c. In the Search Results section, select an entity.

   d. Click **OK**.

      The ID appears in the **Target ID** field.

> **Note:**
>
> If the target entity is part of a logical device, physical device, or equipment hierarchy, specify the highest-level entity in the hierarchy as the source.

8. (Optional) Select **Include Secondary Paths** if you want path analysis to find both primary and secondary paths.

9. (Optional) Enter information in all required fields.

   See "Path Analysis Page" for more information about the fields in this page.

10. Click **Analyze**.

    The Available Paths page appears, listing all the paths that exist between the source and the target. Each path consists of one or more segments, each of which is listed in its own row. The ID in the **From ID** column of the first row of the path and the ID in the **To ID** column of the last row in the path represent the source and target you entered. You can view the paths in topology. See "Viewing Paths in Topology" for more information.

11. Select the desired primary path.

    If secondary paths are available, they are displayed.

12. (Optional) Select the desired secondary path.

13. Click **Update**.

    The Pipe Enabled page appears, displaying the primary and optional secondary paths that enable the pipe.

Related Topics

About Intermediate Nodes for Path Analysis

Viewing Paths in Topology

About Intermediate Nodes for Path Analysis

You can include an intermediate node between the source and target in a path analysis. Specifying an intermediate node means that path analysis finds a path that includes that node. For example, you can find a path between a subscriber terminal and a switch that specifies a particular DSLAM as an intermediate node.

You specify the intermediate node when you set the parameters for the path analysis. See "Running a Path Analysis" for more information. You specify the intermediate node by selecting an entity type and then selecting a particular entity of that type.

The entities you can specify as an intermediate node can be limited if the pipe for which you are performing the path analysis has a pipe configuration associated with it. If the pipe configuration specification includes a relationship with one or more entity specifications for the Intermediate Node configuration item, you can specify only entities based on those specifications as intermediate nodes.

Related Topics

Viewing Paths in Topology

Viewing Paths in Topology

You can view the paths found by path analysis in your inventory topology.

To view paths in topology:

1. Open the Summary page or the Pipe Configuration page of the Pipe entity for which you want to run a path analysis.
2. From the **Related Pages** menu, select **Path Analysis**.

   The Path Analysis page appears.
3. Run the path analysis.

   See "Running a Path Analysis" for more information.
4. In the Available Paths section, select a path and click the **View Topology** button.

   The Topology page appears. See "Topological View Page" for information.

Related Topics

About Intermediate Nodes for Path Analysis

Topological View Page

Use the Topological View page to view how the entities are interrelated to other entities within a specific path. The Topological View page includes layout buttons, search section, diagram pane, and editor section. When you click a predefined layout button, the topology changes to reflect the button you clicked.

Field	Description
Select	Click this button, then select an entity in the canvas area. When you select an entity, information about it is displayed in the Information section.
Zoom	Click this button, then drag out an area in the visualization to zoom in on that area.
Pan	Click to move the visualization within the canvas to display another area. When you click the this button, the cursor changes to a hand, and enables you to drag the visualization to display a different area. Panning is useful when the visualization is enlarged so that only part of the visualization is viewable.
Show All	Click to refresh the visualization to the zoom level required to show all elements in the diagram.
Zoom In	Click to enlarge the visualization on the current center point of the diagram.
Zoom Out	Click to reduce the size of the visualization on the current center point of the diagram.
Load Children	Click to expand all termination points in the visualization to display their resource termination.
Home	Click to collapse all the termination points and go to the original topology diagram.
Expand to Leaf Node	Click to expand to the leaf node.
Auto Drill Down to Search Object	Click to drill down to the original searched entity.
Perform Label Layout	Click to rearrange overlapping labels for improved legibility.
Spring Embedder Layout	Click to arrange elements with no edge crossings or very few edge crossings.
Uniform Length Edges Layout	Click to arrange elements in the topology to create edges of approximately equal length while minimizing edge crossings. The initial position of nodes affects the layout

Path Analysis Page

You use the Path Analysis page to enable a pipe.

Field	Description
Source Type	Select the source entity type.
Source ID	Enter the ID of the source entity. Click **Search** to search for the entity. If the source entity is part of a logical device, physical device, or equipment hierarchy, specify the highest-level entity in the hierarchy as the source. After you select or enter a source ID, the entity name appears in the **Source Name** field.

Field	Description
Intermediate Type	(Optional) Select the entity type of the intermediate node that you want to include in the path found by path analysis. If the pipe has a pipe configuration that includes specification relationships for the Intermediate Node configuration item, you can select only from the types of those specifications. See "About Intermediate Nodes for Path Analysis" for more information.
Intermediate ID	Enter the ID of the entity to use as an intermediate node. Click **Search** to search for the entity. The search is limited to entities of the type specified in the **Intermediate Type** field. If the pipe has a pipe configuration that defines specification relationships for the Intermediate Node configuration item, the search is further limited to entities based on those specifications. After you enter or select an ID, the **Intermediate Name** field is populated. After you select or enter an ID, the entity name appears in the **Intermediate Name** field. See "About Intermediate Nodes for Path Analysis" for more information.
Target Type	Enter the target entity type.
Target ID	Enter the ID of the target entity. Click **Search** to search for the entity. If the target entity is part of a logical device, physical device, or equipment hierarchy, specify the highest-level entity in the hierarchy as the target. After you select or enter a target ID, the entity name appears in the **Target Name** field.
Bit Rate	(Optional) Enter a required bit rate to ensure that path analysis finds paths with sufficient capacity. For example, enter **64** for a 64 Kbps connection. Usually, this value is entered automatically from the pipe's capacity-required information. If path analysis fails to find a path using the automatically entered bit rate, you can remove it and run path analysis again. If a path is returned, you can make design changes to accommodate it.
UOM	(Optional) Enter the unit of measure that applies to the bit rate. For example, choose **kbps** if the bit rate was specified for that unit of measure. Usually, this value is entered automatically from the pipe's capacity-required information.
Quantity	(Optional) Enter the number of connections required. This field is used for fractional TDM services such as Fractional T1. For example, if you need 256 Kbps of capacity, this translates into four 64 Kbps channels. Usually, this value is entered automatically from the pipe's capacity-required information.
Include Partial Paths	(Optional) Select **Include Partial Paths** if you want to see partial paths through the network in addition to continuous paths. By default, path analysis returns only paths that are continuous through the network from source to target. Selecting this option enables the **Distance from Source** and **Distance from Target** fields. Enter the required distances and select the corresponding units to view the partial path of a certain distance. For example a path from San Francisco to New York may be continuous to and from Dallas, but include a gap in connectivity in Dallas. If you view partial paths, you can see this potential path and possibly decide to build additional connections to complete it.

Field	Description
Include Secondary Paths	(Optional) Select **Include Secondary Paths** if you want path analysis to find both primary and secondary paths.
Same Wavelength or Frequency Channel	(Optional) Select **Same Wavelength or Frequency Channel** to find the paths with same wavelength or frequency. If the paths with same wavelength or frequency are not available, the application throws an error as follows: *Same wavelength or frequency fiber not found. Refine criteria and rerun Path Analysis.* **Note**: This filter is applicable only for connectivity enablement.
Include Jumpers in Paths	(Optional) Select to include jumpers in the path.
Cost Effective Routing	Select a routing type that changes the values in **Filter By** and **Algorithm** fields accordingly. The available routing options are: **Equal Weights (Hops)** and **Least Cost**.
Algorithm	Select the algorithm to control the topological view of the path analysis. The algorithm options change based on the **Cost Effective Routing** option you select. For **Equal Weights (Hops)**, the algorithm types are: **All**, **All Shortest**, **Any**, **Any Shortest**, and **Top K Shortest**. For **Least Cost**, the algorithm types are **Any Cheapest** and **Top K Cheapest**.
Filter By Hops	The **Filter By** options change based on the **Cost Effective Routing** option you select. For **Equal Weights (Hops)** routing option, enter the number of hops to search for the paths that have less than or equal to the required number of hops. The default value for this is **10**. For **Least Cost** routing option, select the cost variable. The available options are: **Distance**, **Jitter**, and **Latency**.
K(# of Paths)	Select the number of paths that you want to view. This field is disabled by default and is enabled only if **Algorithm** is either **Top K Shortest** or **Top K Cheapest**. These two **Algorithm** values populate based on the **Cost Effective Routing** option selected.
Custom Tuning	(Optional) Adjust the slider to control the number of paths returned. If you want path analysis to find the simplest paths in the shortest time, move the slider to the left. Move the slider to the right to have path analysis spend more time to find additional paths.
Analyze	Click to view the paths that exist between the source and the target entities, which appear in the Available Paths section.
Primary Paths	Displays the paths that exist between the source and the target entities. Each path consists of two or more segments, each listed in its own row. The ID in the **From ID** column of the first row of the path and the ID in the **To ID** column of the last row in the path represent the source and target you entered. See "Viewing Paths in Topology" for more information.
Update	Select the desired path and click **Update** to update the enablement of the pipe or configuration to reflect the path you selected. The results are visible in the Manual Configure and Graphic View pages.

Related Topics

Running a Path Analysis

About Intermediate Nodes for Path Analysis

Viewing Paths in Topology

Viewing Pipe Enablement Information

After you have enabled a pipe, you can view its enablement information in the Manual Configure page for unversioned pipes or in the Pipe Configuration page for versioned pipes. (These are the same pages from which you perform manual enablement.)

Both of these pages display enablement information in lists. If the pipe is configured for single enablement, a single list is shown in the Primary Path Enablement section. If the pipe is configured for secondary enablement, the page displays two lists: one in the Primary Path Enablement section and another in the Secondary Path Enablement section. The Secondary Path Enablement list can be empty if the pipe is configured for secondary enablement but does not yet have a secondary connectivity path.

For each enabling path, the list includes a series of rows, one for each pipe in the path. For each of these pipes, columns display the sort order, parent pipe information, child pipe information, and assignment status.

The parent and child pipe and termination point information enables you to see information about all pipes involved in the enablement, including their parents. For example, a cable pair pipe is likely to be a child of another pipe, such as a 100-pair cable. When you include a cable pair in the enablement, the cable pair's name and termination points are shown in the **Child TP** and **Child Pipe** columns. The **Parent TP** and **Pipe** columns show the name and termination points of the 100-pair cable pipe.

The **Originating Termination Point** and **Terminating Termination Point** fields above the list allow you to set the originating and terminating termination points. In the Pipe Configuration page, the termination points of the pipe being enabled are displayed as links next to these fields. You can use these links to change the resource assignments of the termination points for the configuration. See "Assigning Resources to Termination Points for Versioned Pipes" for more information.

You can modify the enablement from this page. See "Modifying a Pipe Enablement" for more information.

To view enablement information for an unversioned pipe:

- In the Pipe Summary page, select **Manual Configure** from the **Related Pages** menu.

  The Manual Configure page appears. If the pipe is configured for secondary enablement, the page contains both a Primary Path Enablement and a Secondary Path Enablement section. If it is configured for single enablement, only the Primary Path Enablement section is displayed.

To view enablement information for a versioned pipe:

- Open a Pipe Configuration page.

  If the pipe is configured for secondary enablement, the page contains both a Primary Path Enablement and a Secondary Path Enablement section. If it is configured for single enablement, only the Primary Path Enablement section is displayed.

For more information on exporting pipe enablement information, see "Exporting Pipe Enablement Information".

Exporting Pipe Enablement Information

You can export pipe enablement information into a Microsoft Excel file from the Manual Configure page.

> **Note:**
>
> You can export information from Primary and Secondary Path Enablement separately.

To export pipe enablement information:

1. In the Pipe Summary page, select **Manual Configure** from the **Related Pages** menu.
2. Click on **Export** button to export pipe enablement information to a Microsoft Excel file.
3. (Optional) To export information of all paths, click on the **Export All Paths** button at the top-right corner of the page.

Manual Configure Page

You use the Manual Configure page to specify and view enablement details for an unversioned pipe (a pipe that has no configuration versions). If the pipe is configured for secondary enablement, the page contains both a Primary Path Enablement and a Secondary Path Enablement section. If it is configured for single enablement, only the Primary Path Enablement section is displayed.

Section	Description
Primary Path Enablement	Specify the pipes that enable this pipe of the configuration. If secondary enablement is not selected, this is the only enablement section. See "Manually Enabling an Unversioned Pipe" for more information.
Secondary Path Enablement	If the pipe is configured for secondary enablement, specify the pipes that provide secondary enablement for this pipe. See "Manually Enabling an Unversioned Pipe" for more information.

Modifying a Pipe Enablement

You can modify a pipe enablement that you have performed manually or with path analysis.

> **Note:**
>
> You can modify enablements only for pipes, not pipe configurations. To modify a pipe configuration enablement, you must create a new version.

For example, if a pipe is configured for secondary enablement, you can add a secondary path.

See the following topics for more information about modifying pipe enablement:

- Removing Pipes From a Path
- Adding Pipes to a Path
- Replacing Paths by Using Path Analysis
- Adding Secondary Paths to Enablements

Removing Pipes From a Path

You can remove one or more individual pipes from a connectivity path. In most cases, deleting a pipe makes the path incomplete, so you have to add new pipes to replace the ones you removed.

To remove a pipe from a connectivity path:

1. Open the Manual Configure or Pipe Configuration page.
2. In the Primary Path Enablement or Secondary Path Enablement section, select one or more pipes in the list.
3. Click **Delete**.

   The selected pipes are removed from the list.
4. If necessary, add pipes to the path to replace the ones you removed. See "Adding Pipes to a Path" for more information.
5. Click **Save and Update**.

   UIM updates the connectivity path, checking for required capacity and creating gap pipes as necessary.

Adding Pipes to a Path

Adding pipes to a connectivity path may cause the connectivity to break, so you may need to delete paths or change the arrangement of existing pipes.

To add a pipe to a connectivity path:

1. Open the Manual Configure or Pipe Configuration page.
2. In the Primary Path Enablement or Secondary Path Enablement section, click **Associate**.

   The Add Pipes dialog box appears, containing a search section. The search relates to the entities based on the specifications that are defined as options for the Transport configuration option. If no specifications have been defined, you can search for any pipe.
3. Search for the pipes that enable the parent pipe or add new ones.

   See "Searching for Entities" for more information.

   The Add Pipes dialog box displays the search results or the new pipes.
4. In the Add Pipes dialog box, select the pipes and click **Create**.

   The new pipes appear in the Primary Path Enablement or Secondary Path Enablement section.
5. Do one of the following:
   - In the Manual Configure page, click **Save and Update**.
   - In the Pipe Configuration page, select **Update** from the **Actions** menu.

UIM updates the connectivity path, checking for required capacity and creating gap pipes as necessary.

Replacing Paths by Using Path Analysis

Replacing a primary path by using path analysis requires replacing the secondary path if one exists.

Replacing a secondary path without changing the primary path is the same as adding a secondary path where one did not exist previously. See "Adding Secondary Paths to Enablements" for more information.

To replace a primary connectivity path:

1. Open the Manual Configure or Pipe Configuration page.
2. In the Primary Path Enablement section, click **Alternate Primary Paths**.

   The Path Analysis page appears.
3. Follow the steps in "Enabling Pipes Automatically with Path Analysis" to complete the path analysis and select a connectivity path.

Adding Secondary Paths to Enablements

You can add a secondary connectivity path to an enablement that does not already have one. You can also replace an existing secondary path.

To add a secondary connectivity path:

1. If necessary, configure the pipe for secondary enablement. See "Configuring Existing Pipes for Secondary Enablement" for more information.
2. Open the Manual Configure or Pipe Configuration page.
3. In the Secondary Path Enablement section, click **Alternate Secondary Paths**.

   The Available Paths page appears. The **Secondary Paths** list shows all the available secondary paths for the current primary path. If no secondary paths are shown, none are available.
4. Select a secondary path and click **Update**.

   The Manual Configure or Pipe Configuration page appears, displaying the new secondary path in the Secondary Path Enablement section.

Viewing a Pipe Enablement Visualization

You can view a visualization of the enablement of a pipe or pipe configuration. The visualization displays the following:

- Primary and secondary paths. If a pipe is enabled by two connectivity paths, the visualization shows both. You can highlight one or the other of the paths to see it more clearly.
- Termination points. If the termination points are not terminated on a resource, they are labeled with their IDs. If they are terminated, they are labeled with the ID and name of the resource or its parent. For example, if a termination point is terminated on a device interface, the visualization displays the name and ID of the logical device that holds the interface. Boxes representing parent resources surround the termination points. If two termination points are terminated on the same parent resource, they are displayed in the same box.

- Pipes. Pipes are labeled with their IDs and names and the names of their parent pipes (if any). For example, if the second channel pipe of Facility Pipe LS_BW_A is included in the enablement, it would be labeled **LS_BW_A (LS_BW_A-2)** in the schematic view.
- Gap pipes. If gap pipes were created during the enablement, they are shown as a thin line connecting the thicker lines that represent other pipes.

The Enabled By Visualization page includes tools that you use to control the view. Many of these tools are common to all similar features in UIM. See "Working with Visualizations and Diagrams" for more information. In addition to these common tools, the Enabled By Visualization page allows you to expand and collapse termination points to see their resource termination.

See the following topics for more information about viewing a pipe enablement visualization:

- Opening the Pipe Enablement Visualization
- Highlighting a Connectivity Path
- Viewing Termination Point Resource Terminations
- Enabled By Visualization Page

Opening the Pipe Enablement Visualization

The Enabled By Visualization page controls the view of the enablement of a pipe or pipe configuration.

To open the pipe enablement visualization:

1. Open the Summary page or the Pipe Configuration page of the Pipe entity for which you want to open the pipe enablement visualization.
2. From the **Related Pages** menu, select **Graphic View**.

   The Enabled By Visualization page appears. See "Enabled By Visualization Page" for more information about the fields in this page.
3. Select a pipe or termination point to view detailed information about the entity.

   Entity details appear in the information section to the right of the canvas. Termination Point entities include the name, ID, and parent pipe. Pipe entities include the name and ID.

Related Topics

Viewing Termination Point Resource Terminations

Viewing a Pipe Enablement Visualization

Highlighting a Connectivity Path

If a pipe is enabled with two paths, both are shown in the enablement visualization. You can highlight either of the two paths to make it more visible. The unhighlighted path is shown in blue. The primary path is highlighted by default.

To highlight a path in the enablement visualization:

1. In the Paths section of the Enabled By Visualization page, click the **Primary Path** or **Secondary Path** link.

   The path whose link you clicked is highlighted in red. The other path is displayed in blue.

Viewing Termination Point Resource Terminations

You can expand termination points in the visualization to view their resource terminations. You can expand individual termination points or all termination points simultaneously.

To view individual resource terminations:

1. Open the Summary page or the Pipe Configuration page of the Pipe entity for which you want to view individual resource terminations.
2. From the **Related Pages** menu, select **Graphic View**.

   The Enabled By Visualization page appears. See "Enabled By Visualization Page" for more information about the fields in this page.
3. Select a termination point.
4. Click the switch icon in a termination point.

   The termination point expands to show its resource termination.
5. Click the switch icon again to collapse the termination point.
6. (Optional) In the toolbar, click **Open Subgraphs**.

   All termination points in the visualization expand to show their resource termination. Click **Close Subgraphs** to collapse all the termination points.

Related Topics

Opening the Pipe Enablement Visualization

Viewing a Pipe Enablement Visualization

Enabled By Visualization Page

Use the Enabled By Visualization page to view a visualization of the enablement of a pipe or pipe configuration. The Enabled By Visualization page shows schematic views of the trail pipe in the upper part of the canvas and the enabling pipes in the lower part.

Field	Description
Select	Click this button, then select an entity in the canvas area. After you select an entity, you can perform actions on the entity. For example, you can right-click a termination point and edit the entity information. When you select an entity, information about it is displayed in the Information section.
Zoom	Click this button, then drag out an area in the visualization to zoom in on that area.
Pan	Click to move the visualization within the canvas to display another area. When you click the this button, the cursor changes to a hand, and enables you to drag the visualization to display a different area. Panning is useful when the visualization is enlarged so that only part of the visualization is viewable.

Field	Description
Show All	Click to refresh the visualization to the zoom level required to show all elements in the diagram.
Zoom In	Click to enlarge the visualization on the current center point of the diagram.
Zoom Out	Click to reduce the size of the visualization on the current center point of the diagram.
Open Subgraph	Click to expand all termination points in the visualization to display their resource termination.
Close Subgraph	Click to collapse all the termination points.
Information section	Displays information about the element selected in the Canvas area, including: • An Overview section to display a small-scale view of the entire visualization. • Information about the entire pipe represented in the Canvas area. • Details about the selected entity. Termination Point entities include the name, ID, and parent pipe. Pipe entities include the name and ID.

Related Topics

Viewing a Pipe Enablement Visualization

Setting Pipe Capacity and Signal Structure

Pipes use bandwidth (the capacity to move data). Pipes can require capacity, provide capacity, or both. A pipe's capacity is typically defined in its specification. For example, a Pipe specification could define the capacity required and provided as 100 Mbps of bandwidth. (Capacity types and their units of measure are also defined in Design Studio.)

There are two ways to define a pipe's capacity:

- By associating Capacity Required and Capacity Provided specifications with the Pipe specification. For example, you can define a PVC service trail's capacity required as 56 Kbps. Packet-switched and other non-channelized pipes define their capacity this way.
- By associating the specification with a signal structure that defines how capacity can be broken into channels. The signal structure in turn is associated with a Capacity Provided specification. For example, an OC3 facility can provide 155.52 Mbps divided into three STS1 channels, each of which is divided into 28 VT1 channels. Signal structures are used to define capacity for channelized pipes, such as TDM (Time Duplex Multiplexing) pipes.

For a more detailed overview of capacity and signal structure and how their specifications are defined, see *UIM Concepts*.

Because capacity is defined in Pipe specifications, it is set up automatically when Pipe entities are created in UIM. Usually, you are not required to configure capacity in UIM.

In cases when a signal structure has not been associated with a specification, you can map a signal structure to a pipe. You can also open a tree view of a pipe's signal structure. Additionally, you can view and update a pipe's Capacity Required and Capacity Provided information.

See the following topics for more information about setting up pipe capacity and signal structure:

- About Signal Structure Channels
- Viewing a Pipe Signal Structure
- Mapping a Signal Structure to a Pipe
- Removing a Signal Structure
- Maintaining Capacity Information

About Signal Structure Channels

When a signal structure is associated with a Pipe specification, channels are not usually created automatically when you create a Pipe entity based on the specification. The structure is in place, but the actual channels are not created until they are required by an enablement. No child pipes will be shown in the Pipe Provides page you open from the Pipe Summary page until they are created by an enablement.

For example, the signal structure of an OC3 pipe divides its capacity into 3 STS1 channels, each of which can be divided into 28 VT1 channels. These channels are not created when you create an OC3 pipe entity because it is not possible to predict exactly how the channels will be used for enablement. An entire STS1 channel or just some individual VT1 channels may be required to enable a pipe. The channels are created only when an enablement requires them.

The one exception is when a signal structure has only two levels. For example, a DS3 signal structure might have only one level of child signals, for 28 DS1 signals. In this case, when you create a Pipe with the DS3 signal structure, 28 DS1 child pipes are created automatically. In this case, there is no ambiguity about how the DS3 will be channelized, so the channels can be created safely. They will be visible in the Pipe Provides page immediately.

Related Topics

Working with Child Pipes

Viewing a Pipe Signal Structure

Mapping a Signal Structure to a Pipe

Removing a Signal Structure

Maintaining Capacity Information

Viewing a Pipe Signal Structure

If a pipe has a signal structure, you can see a tree view of the structure and the status of items it contains.

To view a pipe signal structure:

1. Open the Summary page of the Pipe entity for which you want to view an associated signal structure.
2. From the **Related Pages** menu, select **Signal Structure**.

   The Signal Termination Point Structure Search page appears.
3. Search for the Signal Termination Point specification that defines the signal structure.

   Each item in the structure has an icon that indicates its status:

- A plain icon indicates that the item exists in the structure but has not yet been created in inventory.
- An icon with the letter **C** indicates that the item has been created in inventory.
- An icon with a red cross through it indicates that the item is unavailable because it is already enabling a service trail.

Related Topics

About Signal Structure Channels

Mapping a Signal Structure to a Pipe

Removing a Signal Structure

Maintaining Capacity Information

Mapping a Signal Structure to a Pipe

If a signal structure has not already been associated with a Pipe entity by its specification, you can map one manually. You can choose from the signal structures defined by Signal Termination Point specifications created in Design Studio.

There are two types of Signal Termination Point specifications: Trail Termination Points, which define the top level of a signal structure, and Connection Termination Points, which define lower levels of the signal structure.

> **Note:**
>
> Signal termination points are different from pipe termination points. See "Working with Termination Points" for more information about pipe termination points.

See *UIM Concepts* for more information about Signal Termination Point specifications.

To map a signal structure to a pipe:

1. Open the Summary page of the Pipe entity to which you want to map a signal structure. The Pipe entity must not previously have been associated with a signal structure.
2. From the **Actions** menu, select **Map Signal Structure**.

   The Signal Termination Points Search page appears.
3. Search for the Signal Termination Point specification that defines the signal structure you want.

   See "Searching for Entities" for more information. The Search Results section lists the Signal Termination Point specifications that match your search criteria. The **Entity Type** column indicates whether a specification is for a trail connection point or a child connection point.
4. In the Search Results section, select a Signal Termination Point specification and click **OK**.

   A signal structure entity is associated with the Pipe entity. Its structure can be viewed in the Signal Structure page. See "Viewing a Pipe Signal Structure" for more information.

Related Topics

About Signal Structure Channels

Removing a Signal Structure

Maintaining Capacity Information

Removing a Signal Structure

You can remove a signal structure from a Pipe entity if channels have not been created.

> **Note:**
>
> The removal process includes no confirmation step and is not reversible.

To remove a signal structure from a pipe:

1. Open the Summary page of the Pipe entity from which you want to remove a signal structure.
2. From the **Actions** menu, select **Remove Signal Structure**.

   The pipe's signal structure is removed.

Related Topics

About Signal Structure Channels

Mapping a Signal Structure to a Pipe

Maintaining Capacity Information

Maintaining Capacity Information

Capacity is defined by Capacity Provided or Capacity Required specifications associated with a Pipe specification in Design Studio, either directly or as the result of a signal structure.

It is unusual to change the capacity information, but this may be necessary if a facility pipe has been upgraded after installation. The following rules apply to changing the capacity-provided amount.

- You cannot change the capacity-provided information if the pipe has a signal structure.
- If a pipe is not enabling any other pipes (has no capacity consumed), you can increase or decrease the total capacity provided.
- If a pipe is enabling another pipe (has some capacity consumed), you can only increase the capacity provided. You cannot lower the percentage of capacity that is consumable because that would lower the effective amount of capacity provided.

There are no rules concerning changing the capacity-required amount. You can increase the capacity required after a pipe has been enabled by another pipe, even if you increase it to more than the capacity available on the enabling pipe. Changing the capacity required on a pipe that is already enabled by another pipe does not change the amount of capacity consumed on the enabling pipe.

You can view and update a pipe's capacity information on the Pipe Summary page, which includes Capacity Provided and Capacity Required sections that display information about the pipe's capacity. See "Updating Capacity Information" for more information.

Related Topics

About Signal Structure Channels

Mapping a Signal Structure to a Pipe

Removing a Signal Structure

Updating Capacity Information

To update capacity information:

1. Open the Summary page of the Pipe entity for which you want to update capacity information.
2. In the Capacity Provided or Capacity Required section, select a row and click **Edit**.

   The Pipe Capacity Provided or Pipe Capacity Required page appears.
3. Make changes to any of the capacity settings and click **Update**.

Related Topics

Maintaining Capacity Information

Creating Pipes and Channels for CWDM and DWDM

You can create optical fiber pipes and their corresponding channels for Coarse Wavelength Division Multiplexing (CWDM) and Dense Wavelength Division Multiplexing (DWDM). The UIM package includes **ora_uim_basewdm** cartridge, which you can deploy to access the optical fiber specifications for CWDM and DWDM.

You can create the optical fiber pipes and their corresponding channels using the following pipe specifications:

- **CWDM Optical Fiber**: This specification has a parent pipe (**CWDM_Optical_Fiber**) and a child channel type (**CWDM_Fiber_Channel**). The CWDM_Optical_Fiber pipe has unlimited capacity so that it can adapt to any bit rate, according to the connectivity. See "Creating CWDM Pipe and Channels" for information on creating a CWDM pipe and its corresponding channels.
- **DWDM Optical Fiber**: This specification has a parent pipe (**DWDM_Optical_Fiber**) and a child channel type (**DWDM_Fiber_Channel**). See "Creating DWDM Pipe and Channels" for information on creating a DWDM pipe and its corresponding channels.

Creating CWDM Pipe and Channels

To create a CWDM pipe and its corresponding channels:

1. In UIM, go to the **Pipes** page.
2. Click **Create**.
3. In the **ID** field, enter a unique ID.
4. From the **Specifications** menu, select **CWDM_Optical_Fiber**.

   By default, the **Medium** field displays the value **Fiber** and the **Transmission Signal Type** field displays the value **Optical**.

> **Note:**
>
> You can change the values in the **Medium** and **Transmission Signal Type** fields.

5. (Optional) Select **ITU Channel Numbering**.
6. Click **Save and Continue**.

   The Pipe Summary page appears.
7. To create a channel(s) as a child for the pipe, click **Related Pages** and then click **Provides**.

   The Pipe Provides page appears.
8. Click **Create**.

   The Pipe-New page appears.
9. In the **Number of Channels** field, enter the number of channels you want to create.
10. In the **Starting Wavelength** list, select a value.

> **Note:**
>
> The available wavelength values range from 1270 nm to 1810 nm. You can customize the minimum and maximum wavelengths within a range of 1000 nm, by updating the **Fiber.properties** file.

> **Note:**
>
> You can associate these wavelengths with colors. You can also customize these wavelength-color associations by updating the **Fiber.properties** file. See Table 12-1 for the default wavelength-to-color associations.

11. Click **Save and Close**.

    The Pipe Provides page appears and displays the list of channels that are created.

Table 12-1 Wavelength-to-Color Default Associations for CWDM Channels

Wavelength (in nm)	Color Value
1470	VIOLET
1490	GREY
1510	BLUE
1530	GREEN
1550	YELLOW
1570	ORANGE
1590	RED
1610	BROWN

> **Note:**
>
> The **Name** of a channel is generated automatically by the concatenation of the Fiber Channel ID, Wavelength, and Color.

Creating DWDM Pipe and Channels

To create a DWDM pipe and its corresponding channels:

1. Go to the **Pipes** page.
2. Click **Create**.

   The Pipe-New page appears.
3. In the **ID** field, enter a unique ID.
4. From the **Specifications** menu, select **DWDM_Optical_Fiber**.

   By default, the **Medium** field displays the value **Fiber** and the **Transmission Signal Type** field displays the value **Optical**.

   > **Note:**
   >
   > You can change the values in the **Medium** and **Transmission Signal Type**.
5. (Optional) Select **ITU Channel Numbering**.
6. In the **Offset** list, select a value.

   > **Note:**
   >
   > The available options for offset are 0 GHz and 50 GHz.
7. In the **Channel Spacing** field, select the spacing required between the channels. The available channel spacing values are 100 GHz, 200 GHz (Even), 200 GHz (Odd), and 50 GHz.
8. In the **Grid Type** field, select **Flex Grid** or **Fixed**.

   > **Note:**
   >
   > The Fixed grid option uses the values from **Channel Spacing** for creating the channels. Whereas, the Flex Grid option creates the channels based on the **Starting Frequency** and **Flex Grid Channel Spacing** that you select while creating the Provides.
9. Click **Save and Continue**.

   The Pipe Summary page appears.
10. To create a channel(s) as a child for the pipe, click **Related Pages** and then click **Provides**.

The Pipe Provides page appears.

11. Click **Create**.

    The Pipe-New page appears.

12. In the **Number of Channels** field, enter the number of channels you want to create.
13. In the **Flex Grid Channel Spacing** field, select a value.

> **Note:**
>
> This option is available only for Flex Grid type.

14. In the **Starting Frequency** list, select a value.

> **Note:**
>
> The available frequency values range from 190.1 THz to 197.20 THz. You can customize the minimum and maximum frequencies within a range of 10 THz, by updating the **Fiber.properties** file.

> **Note:**
>
> The **Name** of a channel is generated automatically by the concatenation of Fiber Channel ID and Wavelength.
> See Example 12-1 for an example of how to calculate the wavelength from a frequency.

15. Click **Save and Close**.

    The Pipe Provides page appears and displays the list of channels that are created.

Example 12-1 shows how a wavelength is calculated from a frequency.

Example 12-1

```
Speed of light in vacuum (constant) = 2.99792E-08
Wavelength(nm) = 2.99792E-08/Frequency(THz)*10000000000000
If the offset is 50 GHz, subtract 0.05 from the frequency to calculate the wavelength.
```

Viewing Pipe Information in Map View

You can view pipe design in a map from the Map View page. The Map View page for a pipe uses the default settings present in topologyProcess.properties file.

To open the Map View page and view the pipe design on a map:

1. Open the Summary page of the Pipe entity for which you want to view in the map view.
2. From the **Related Pages** menu, select **Map View**.

   The Map View page appears.

3. Use the Map View page of a pipe to view the primary and secondary paths that are configured in the Manual Configuration page of the pipe.

See "Map View Page" for more information.

> **Note:**
>
> You cannot make any changes to the pipe from the Map View page, but you can use tools to control the map display. You can make any changes to the pipe from the Manual Configuration page of the pipe.

4. Double-click on any location in the map to view the corresponding latitude and longitude coordinates.

Related Topics

Getting Information about Nodes in the Map View

Getting Information About Edges in the Map View

Working with Map Profiles

Pipe Connectivity - New Page

You use the Pipe Connectivity - New page to create new pipes and to add child pipes.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Select a Pipe specification to use to define the new entity. See *UIM Concepts* for more information about Pipe specifications. See "Creating Pipes and Channels for CWDM and DWDM" for creating CWDM or DWDM pipes and channels.
ID	If the entity specification requires a manually entered ID, enter a unique ID for the entity. Most entity specifications are defined in Design Studio so that IDs are generated automatically. The **ID** field for these specifications contains the text AUTOGENERATE.
Name	Enter a name for the Pipe entity.
Description	Enter a description of the Pipe entity.
Versioned	Determines whether to version the pipe. This option is available only if the Pipe specification is associated with one or more Pipe Configuration specifications. If you intend for the pipe to have configurations at any point during its life cycle, select **Versioned** when creating the new entity. After a pipe is versioned, you cannot change it back to unversioned if configuration versions have been created.
Medium	Select the option that describes the connection medium.
Transmission Signal Type	Select the option that describes the type of connection.

Field	Description
Gap Pipe	Indicates whether the Pipe entity is a gap pipe. Gap pipes ensure that there is a continuous path from the originating termination point to the terminating termination point. A gap pipe is required when the enabling pipes you specify do not share a common termination point. This option is read only.
Quantity	Enter the number of pipes you want to add.
Inventory Status	Displays the stage in the life cycle of the pipe. This field is read only. See *UIM Concepts* for more information about inventory statuses.
Assignment Status	Displays the stage in the life cycle of a specific assignment of the pipe to another entity. This field is read only. See *UIM Concepts* for more information about resource assignment statuses.
Allow Secondary Enablement	Select if you want the pipe to be configured for enablement by more than one path.

Related Topics

Creating Entities

Searching for Entities

Pipe Summary Page

Pipe - Information Page

You use the Pipes - Information page to edit the information that appears in the Summary page Information section. Some data elements, such as the ID, cannot be changed after the entity is created.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Displays the specification used to define the entity. This field is read only.
ID	Displays the unique ID generated for the entity. This field is read only.
Name	Edit the name for the Pipe entity.
Description	Edit the description of the Pipe entity.
Versioned	Determine whether to version the pipe. This option is available only if the Pipe specification is associated with one or more Pipe Configuration specifications. If you intend for the pipe to have configurations at any point during its life cycle, select **Versioned** when creating the new entity. After a pipe is versioned, you cannot change it back to unversioned if configuration versions have been created.

Field	Description
Medium	Select the option that describes the connection medium.
Transmission Signal Type	Select the option that describes the type of connection.
Gap Pipe	Indicates whether the Pipe entity is a gap pipe. Gap pipes ensure that there is a continuous path from the originating termination point to the terminating termination point. A gap pipe is required when the enabling pipes you specify do not share a common termination point. This option is read only.
Inventory Status	Displays the stage in the life cycle of the pipe. This field is read only. See *UIM Concepts* for more information about inventory statuses.
Assignment Status	Displays the stage in the life cycle of a specific assignment of the pipe to another entity. This field is read only. See *UIM Concepts* for more information about assignment statuses.
Allow Secondary Enablement	Select if you want the pipe to be configured for enablement by more than one path.
Arrangement	(Visible only in data cooperation scenarios.) The cooperation model for the entity as defined by the parties or systems exchanging entity data.
Entity Name	(Visible only in data cooperation scenarios.) The name of the entity in the context specified in the **Other System** field.
Entity ID	(Visible only in data cooperation scenarios.) The identifier of the entity. This identifier is unique in the context specified in the **Other System** field.
Other System	(Visible only in data cooperation scenarios.) The external system or domain that is participating in the data cooperation.

Related Topics

Creating Entities

Searching for Entities

Pipe Summary Page

Pipe Summary Page

You use the Pipe Summary page to define the content for a pipe. You can also view the topology diagram of the pipe, using the UTIA application, by clicking **Topology**. See "Working with the Inventory Topology" for more information.

The page is arranged into tabs, each of which is used for a different purpose:

- General Information Tab
- Capacity Tab
- Associated Resources Tab
- Consumers Tab
- Groups and Infrastructure Tab

See the following topics for more information about summary pages:

- Related Pages Menu
- Actions Menu

See "Entity Summary Page" for information about Summary page fields that are common among all entities.

Related Topics

Working with Child Pipes

Working with Pipe Configurations

Enabling Pipes

Setting Pipe Capacity and Signal Structure

General Information Tab

You use the **General Information** tab to view basic information about the pipe, pipe's termination points, pipe configurations, and the directionality defined for the pipe.

Section	Description
Pipe Information	Displays basic information about the entity, most of which was defined when you created the entity. Click **Edit** to change this information. Some data elements, such as the ID, cannot be changed after the entity is created. See "Creating Entities " and "Pipe Connectivity - New Page" for more information. Click **Other System** to view fields related to systems with which UIM is cooperating. These fields are visible by default when populated and hidden by default when not populated. Click the ID from Parent Pipe field to navigate to the corresponding parent pipe summary page. **Note:** The Parent Pipe field appears only if the current pipe is a child pipe and it has a parent pipe associated. See "Creating Pipes and Channels for CWDM and DWDM" for more information on CWDM and DWDM pipes and channels.
Termination Points	Displays a pipe's termination points. The information for each termination point includes network location and termination information for associated logical devices, physical devices, and equipment. Click the termination point ID to navigate to the Summary page for the termination point. Every pipe requires exactly two termination points. When you create a Pipe entity, two associated termination points are created automatically. If the Pipe specification includes a Pipe Termination Point specification, it is used to create the termination points. See "Working with Termination Points" for more information.
Configurations	Displays any pipe configurations created for the entity. Pipe configurations enable you to update the enablement and termination point resource assignments as changes are made in your inventory. **Note:** You can use pipe configurations only if the pipe's specification is related to a Pipe Configuration specification. In addition, you can add a configuration only if the pipe is defined as versioned. The fields that appear in the Configurations section are common among multiple entities. See "Entity Summary Page" for more information. See "Adding the First Version of a Configuration to an Entity" and "Adding Additional Configuration Versions" for information about creating configurations.

Section	Description
Pipe Termination Directionality	Displays the directionality defined for the pipe, which represents the direction that signals or routes flow through a pipe. You set the directionality of a pipe by specifying which termination point is the starting point and which is the ending point. See "Setting Pipe Directionality" for more information.
Description	Edit the description of the pipe.

Capacity Tab

You use the **Capacity** tab to view capacity-related information for the pipe.

Section	Description
Capacity Provided	Displays the capacity the pipe provides as defined by the Pipe specification. Pipes can require capacity, provide capacity, or both. Because a pipe's capacity is typically defined in its specification, it is set up automatically when Pipe entities are created in UIM. See *UIM Concepts* for more information about capacity.
Capacity Required	Displays the capacity the pipe requires as defined by the Pipe specification. Pipes can require capacity, provide capacity, or both. Because a pipe's capacity is typically defined in its specification, it is set up automatically when Pipe entities are created in UIM. See *UIM Concepts* for more information about capacity.
Capacity Consumed	Displays information about bandwidth consumption by enabled pipes. For each enabled pipe, the table displays the percentage of bandwidth consumed and the corresponding percentage of the total capacity consumed.

Associated Resources Tab

You use the **Associated Resources** tab to view information about the custom involvements and network edges of the pipe.

Section	Description
Custom Involvements	Displays any custom associations defined for the pipe with entities that are not otherwise associated. See "Working with Custom Involvements" for more information.
Network Edges	Displays the name of the network edge (if any) that represents the pipe in networks. The association occurs when you select a pipe to be represented by an edge in a network. The same entity can be represented by edges in different networks. For each network association, you can see the network name, network description, edge name, and edge description.

Consumers Tab

You use the **Consumers** tab to view information about assignments, references, and business interactions of the pipe.

Section	Description
Assignments	Lists the configurations to which the pipe has been assigned. For each assignment, you can see the entity to which the assignment has been made, that entity's type, and the start and end dates. The name of the associated connectivity is displayed as a link. Clicking on it takes you to the corresponding Connectivity Summary page.
References	Lists the configurations to which the pipe has been referenced. For each assignment, you can see the entity to which the assignment has been made, that entity's type, and the start and end dates.
Business Interactions	Displays any business interactions with which the pipe is associated. See "Working with Business Interactions" for more information.

Groups and Infrastructure Tab

You use the **Groups and Infrastructure** tab to view information about the places, inventory groups, and roles associated with the pipe.

Section	Description
Places	Displays any places that are associated with the pipe. The association can imply that the some part of the pipe is located at the place or that there is some kind of relationship between the entities. The fields that appear in the Places section are common among multiple entities. See "Entity Summary Page" for more information. See "Associating Places to Entities" and for information about creating new place associations.
Inventory Groups	Displays any inventory groups to which the pipe is associated. You use inventory groups to organize entities for a particular purpose. The fields that appear in the Inventory Groups section are common among multiple entities. See "Entity Summary Page" for more information. See "Adding an Entity to an Inventory Group from the Entity Summary Page " for information about associating entities with an inventory group.
Roles	Displays any roles that are associated with the pipe. You can associate roles with entities to define the functions they perform in your inventory. An entity can have multiple roles simultaneously, and its roles can change over time. See "Working with Roles" for more information.

13

Working with Networks and Network Visualization

In Oracle Communications Unified Inventory Management (UIM), you use several different kinds of entities to manage networks in your inventory:

- Network entities represent the network as a whole.
- Network configurations represent the resources assigned to the network at a particular point in time.
- Network nodes are specific locations in the network. They can represent physical or logical resources and can be associated with places and property locations.
- Network edges represent connectivity between nodes.

You configure network entities by using the Network Visualization page, where you add network nodes and network edges. You use nodes and edges to represent entities and describe how they are implemented. For example, a network node can represent a logical device, and a network edge can represent a connectivity. See "About Network Visualization Page" for more information about this page. The Network Visualization page appears by default and can be changed to the Network Topological View page instead. See "Network Topological View Page" for information about the fields in this page.

You can also see networks in a map view. Nodes appear in the geographic locations determined by places associated with them. See "Using the Map View" for more information.

There are three types of networks in UIM. You specify the type when you define a Network specification in Design Studio.

- An *infrastructure network* is a resource-based network such as SDH, ATM, Ethernet, or MPLS.
- A *packet virtual network* (PVN) is collection of the interfaces and connectivities that support a packet-based connectivity service. Multipoint ethernet virtual circuits (EVCs) are examples of packet virtual networks.
- A *service network* consolidates service locations, network access connectivity, and supporting virtual networks to provide a unified view of a connectivity-based service.

The network type and the network technology are interdependent. The network type is not displayed in Network Summary pages in UIM, but can be inferred from the specification on which the entity is based. For example, the Ethernet EVC Network specification, provided in the Carrier Ethernet cartridge, defines a PVN network. Similarly, the Ethernet Transport Network specification in the same cartridge defines an infrastructure network.

The network type determines the functionality that is available in the network visualization. For example, the Design Steps feature is available only for packet virtual networks and service networks.

Network entities share the features of many other entities. You can associate places and roles with them and you can include them in business interactions. See "Working with Inventory Entities " and "Working with Roles" for more information.

Network entities are topology-enabled, so you can search for them in the topology diagram using the UTIA application. See "Working with the Inventory Topology" for more information.

See the following topics for more information about working with network and network visualizations:

- Creating Networks
- About Network Configurations
- Designing a Network in the Network Topological View
- Using the Map View
- Validating and Completing a Service or Packet Virtual Network in the Network Topological View

Creating Networks

When you create a Network entity, the specification you use determines the possible values for other data elements. For example, if you select a Network specification that has a defined technology, then the **Technology** data element of the Network entity is automatically set to that value. The technology in turn can determine which **Network Topology** values are possible.

To create a network:

1. In the navigation section, click **Network**.
2. In the Search Results section, click **Create**.

   The Network - New page appears.
3. From the **Specification** list, select the specification you want to use for this network.

   If the specification includes a technology, the **Technology** field updates to include it. The rest of the page refreshes to include any customized fields from the specification.
4. If the **ID** field is available (does not include the text **AUTOGENERATE**), enter a unique ID for the network. The ID cannot be changed later.
5. (Optional) In the **Name** and **Description** fields, enter a name and a description.
6. (Optional) From the **Network Topology** list, select the topology that describes the network. The values you can choose from may be constrained by the technology defined by the specification.
7. Click **Save and Continue**.

   The Network Summary page for the network you created appears.
8. (Optional) Click **Save and Add Another** to create multiple networks.

   The network you created is saved and the Network - New page reappears.
9. (Optional) Click **Cancel** to dismiss creation process.

   The Network page appears.

Selecting the Network Topology

When you create or modify a network, you can select from a number of different topologies that describe its shape and how its nodes relate to each other. The following table lists all possible values in the **Network Topology** list, but the technologies you can select from can be defined by the Network specification.

Topology	Description
No topology selected	(Default) The Network Topology data element is not used or is not specified.
Bus	A topology in which a single backbone connection carries signals to nodes connected to it. This topology is typical of older token-ring networks.
Chain	A linear topology in which nodes are arranged sequentially, with each node connected to its adjacent node or nodes.
Hybrid	A topology that combines characteristics of other topologies, such as mesh and star.
Linear Add/Drop	A chain-like configuration with intermediate nodes where signals can enter and exit. Used in SONET and SDH networks.
Mesh	Each node in the network is connected to every other node. A fully-meshed network is one where each node is directly connected to the others. A partially-meshed network is one where some of the connections are indirect. Meshed networks are commonly used with Ethernet, IP, MPLS, and SONET.
Multipoint to Multipoint	A network topology in which all nodes are visible and accessible to all other nodes. For example, a multipoint Carrier Ethernet network includes three or more UNIs that are all visible and accessible to each other. A service network example is an E-LAN service.
Point to Point	The topology is linear with all edges terminating at two end nodes. For example, a point-to-point EVC network contains exactly two UNIs. Point-to-point EVCs carry Ethernet Line (E-LINE) services.
Ring	A closed topology in which signals are passed from node to node in predictable pattern. Ring topologies are common with SONET, SDH, and Ethernet.
Rooted Multipoint	A multipoint network topology in which one node is designated as the root. For example, in an EVC network, one UNI can be assigned a Root UNI role with the remaining UNIs assigned Leaf UNI roles. A service network example is an E-Tree service.
Singleton	The network includes only a single node with no connectivity.
Star	The network includes a hub node with leaf nodes connected to it. Also called hub-and-spoke. Commonly used with Ethernet, IP, MPLS, and SONET.
Tree	Similar to a collection of star networks in which a leaf in one star is the hub of another.
Unknown	The network topology is currently unknown or unspecified.

Related Topics

Creating Networks

About Network Configurations

You can create configurations for Network entities. Network configurations are used to assign resources to networks, including custom network addresses, custom objects, and logical devices. As you create new versions of the configuration, you create a record of resource assignments and characteristics assigned to configuration items.

> **Note:**
>
> Network configurations do not include the network topology, so the version history does not reflect the evolution of the topology.

Network configurations have the same features and functionality as other configurations. See "Working with Entity Configurations" for more information about using configurations.

Network Configuration Page

You use the Network Configuration page to define the content for a service configuration.

See the following topics for more information about tasks you can complete in Service Configuration pages:

- Related Pages Menu
- Actions Menu

> **Note:**
>
> The sections listed in the following table are specific to the Network Configuration page. See "Entity Summary Page" for information about features that are common among all entities.

Field	Description
Network Configuration Information	Displays basic information about the configuration, most of which was defined when you created the entity. Click **Edit** to change this information. Some data elements, such as the ID, cannot be changed after the configuration is created. The **Edit** button is available only before the configuration is completed.
Configuration Items	Displays configuration items associated with the configuration. See "Adding Configuration Items " for information about adding new configuration items.

Related Topics

About Network Configurations

Network Configuration Information Page

You use the Network Configuration Information page to modify a network configuration. This page is available only before the configuration is completed.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Displays the name of the specification used to create the configuration. See *UIM Concepts* for more information about configuration specifications.
ID	Modify the ID for the configuration. The default value is based on the ID of the parent network with an incremented version number.
Name	Modify the name of the configuration. The default value is the same as the ID.
Status	Displays the current status of the network configuration.
Previous Configuration	Displays the version number of the previous configuration, if any. If you are editing the first configuration version, this value is **0**.
Version	Displays the sequential version number of the configuration you are editing.
Start Date	Modify the date on which the configuration will become active.
End Date	Modify the date on which the configuration will become inactive.
Network	Displays the name of the configuration's parent network

Related Topics

About Network Configurations

Network Configuration Information - New Version Page

You use the Network Configuration Information - New Version page to create new network configurations.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Select a Network Configuration specification to use for the new configuration version. See *UIM Concepts* for more information about configuration specifications.
ID	Enter a unique ID for the configuration or accept the default. The default value is based on the ID of the parent network with an incremented version number.

Field	Description
Name	Enter a name for the configuration or accept the default. The default value is based on the name of the parent network with an incremented version number.
Previous Configuration	Displays the version number of the previous configuration, if any. If you are creating the first configuration version, this value is **0**.
Version	Displays the sequential version number of the configuration you are creating.
Start Date	Enter the date on which the configuration will become active.
End Date	Enter the date on which the configuration will become inactive.

Related Topics

About Network Configurations

Designing a Network in the Network Topological View

You design networks in the Network Topological View page by adding nodes and edges, then choosing which entities they represent. You can also add child networks, flow interfaces, and other items to the network

When you click on the Visualization tab, the Network Visualization page appears by default. You can change this view to Network Topological View page by using the **uim.ui.networkPlanAndBuild.canvas.enabled** parameter in the system-config.properties file. For more information on using the parameter, see *UIM System Administrator's Guide*.

To learn more about the Network Visualization page see "About Network Visualization Page". To find more information about designing networks on the Network Visualization page see "Working with Topology Graphs in Network Visualization Page".

The Network Topological View page includes a canvas area where the diagram is displayed. The page has a number of tools that enable you to control the topological display, including a toolbar, and an information section. Many of these features are common to all similar features in UIM. See "Working with Visualizations and Diagrams" for more information about these general features. See "Network Topological View Page" for information about fields in the Network Topological View page.

See the following topics:

- Working with Nodes in Network Visualization Page
- Working with Edges in Network Visualization Page
- Working with Subnetworks in Network Visualization Page
- Opening the Network Topological View Page
- Saving the Network Topological View as a Graphic File
- Working with Nodes
- Working with Edges
- Automatically Creating Nodes and Edges for Pipes and Connectivities
- Adding Flow Interfaces to Packet Virtual Networks
- Adding Connectivities to Packet Virtual Networks

- Working with Child Networks
- Adding Specifications and Identifying Information to Nodes and Edges
- Removing Nodes and Edges from a Network

About Network Visualization Page

The Network Visualization page shows the topology graph of the chosen network.

To open the Network Visualization page:

1. Open the Summary page for a Network entity for which you want to view the topology.
2. Click the **Visualization** tab.
3. The Network Visualization page appears. This page displays the topology graph of network.

The topology graph in the Network Visualization page consists of nodes representing different entities connected by edges representing pipes and connectivities. The area in which the topology graph appears is called the **Canvas** area. There is also an **Actions** toolbar that can be used to perform various actions in this page. See "Working with Topology Graphs in Network Visualization Page" for more information on working with the topology graph.

Related Topics

Working with Nodes in Network Visualization Page

Working with Edges in Network Visualization Page

Working with Subnetworks in Network Visualization Page

Working with Topology Graphs in Network Visualization Page

This section provides information about the various settings to customize topology graph view and the various actions that can be performed on it.

See the following topics:

- Searching and Filtering Nodes or Edges in Network Visualization Page
- Saving the Network Visualization Page as a Graphic File
- Changing Topology Graph Settings in Network Visualization Page
- Changing Display Settings
- Adding Advanced Settings
- Performing Actions on the Topology Graph in Network Visualization Page
- Overview tab
- Using Zoom settings and Mini-Map in Network Visualization Page
- Viewing Maps in Network Visualization Page

Searching and Filtering Nodes or Edges in Network Visualization Page

You can search for nodes or edges in a network in the Network Visualization Page by using the **Search and Filter Topology** option. You can also filter your search results to view only the nodes or edges matching the relevant criteria.

You can click on the **Search** icon at the top-right corner of the canvas just above the **Settings** icon to open the **Search and Filter Topology** panel on the left side of the screen. See "Changing Topology Graph Settings in Network Visualization Page" for more information about the Settings icon and its fields.

To search and filter nodes or edges in Network Visualization Page:

1. Click on the **Search** icon.

   The **Search and Filter Topology** panel appears to the left side of the screen. There is a search bar at the top of the panel and filter options are given below it. You can use these options to filter nodes or edges according to the desired criteria. Below the search bar is a list of all the nodes and edges in a topology graph. The nodes are grouped into categories by **Location**, while the edges are grouped separately.

2. (Optional) You can select any of these nodes and edges directly from the list.

   The selected nodes and edges are highlighted on the canvas.

3. (Optional) Click on the search bar in the left panel.

   A dropdown list of nodes and edges will appear. You can choose any of these nodes or edges. You can also filter your search by applying filters.

4. (Optional) Select a filter option below the search bar. You may select any number of filter options.

   The selected filter option appears inside the search bar. To see additional filters, click on the 'More' option.

5. In the search bar click on the selected filter option.

   A list of values for the selected option appears.

6. You can choose any number of options from this list.

   The filter option changes to reflect the value chosen.

7. The searched nodes or edges are highlighted on the canvas.

Saving the Network Visualization Page as a Graphic File

You can save the visible area of the Network Visualization page as a graphic file.

To save the Network Visualization page as a graphic file:

1. Open a network in the Network Visualization Page.

   See "About Network Visualization Page" for more information. See "Working with Topology Graphs in Network Visualization Page" for information about customizing and performing actions in this page.

2. Right-click on the canvas in the Network Visualization page.

   The **Save Image** option appears.

3. Select the **Save Image** option.

   The topology graph on the Network Visualization page is saved and downloaded as an image.

Changing Topology Graph Settings in Network Visualization Page

You can customize how the topology graph appears on the canvas by using the various settings and map views. For more information on changing map views see "Viewing Maps in Network Visualization Page".

The **Settings** icon appears below the **Search** icon at the top-right corner of the canvas. This icon opens the **Settings** tab at the right-side of the canvas. You use the Settings tab to customize the topology graph view on the canvas. The **Settings** tab has the following subtabs:

- Display Settings
- Advanced Settings

Related Topics

Changing Display Settings

Adding Advanced Settings

Changing Display Settings

You can use the **Display Settings** tab for customizing topology graph view through the various settings in it.

Setting Name	Description
Group by	Select an option to group components of the topology graph. You can group the components by state, city, postal code, district, province, location code, and circle. Each option you select provides the number of components present in each group.
Layouts	Select an option from the dropdown menu to change the layout of the topology graph: • **Custom Layout:** Displays the topology in a customized layout. See "Using Custom Layout" for more information on using custom layouts. • **Forced Layout:** Displays the topology graph's components. It is the default layout. • **Geo Map Layout:** Displays the topology graph in a geographical map view. • **Circular Layout:** Displays the topology components in a circle. • **Grid Layout:** Displays the topology components in the form of a grid. • **Hierarchical Layout:** Displays the topology components according to the hierarchy and without any overlaps.
Others	This section provides controls to adjust the topological view. You can hide the links, labels, and leaf nodes and remove the node overlaps by enabling the corresponding option.
Reset	Resets the display to default settings.

Related Topics

Adding Advanced Settings

Adding Advanced Settings

The Advanced Settings tab contains two collapsible sections which allow you to customize topology graph view.

- **Icons:** This section contains a **Show Icon** option that allows you to enable viewing icons on nodes in the topology graph. This option is enabled by default.
- **Geomap:** This section allows you to view the topology graph over different geographical maps in the canvas. For more information of the types of maps, see “Viewing Maps in Network Visualization Page”.

Using Custom Layout

To use custom layouts:

1. Click on the **Settings** icon.

   The **Settings** panel appears at the right side of the screen.
2. In the **Display Settings** subtab, under the Layout section, select **Custom Layout**.

   The **Save Node Confirmation** pop-up window appears on the screen informing you to save coordinates using **Save Coordinates** icon in the Actions toolbar. Using this option allows you to change the layout of the topological graph on the canvas manually.
3. Click **OK**.

   The **Save Coordinates** icon appears on the **Actions** toolbar. This icon will be visible only when the **Custom Layout** option is selected.

Performing Actions on the Topology Graph in Network Visualization Page

The **Actions** toolbar allows you to interact with the topology by performing various actions. This toolbar appears at the top of the canvas area with icons for each of the below options.

Action	Icon	Description
Edit		This allows you to update the specification of a node. For more information see “Editing Node Information in Network Visualization Page”.
Delete		This deletes a selected node in the topology graph. For more information see “Removing a Node from a Network in Network Visualization Page”.
Add Edge		This allows you to add an edge to the topology graph. For more information see “Adding an Edge to a Network in Network Visualization Page”.
Add Node		This allows you to add a node to the topology graph. For more information see “Adding a Node in Network Visualization Page”.

Overview tab

You use the Overview tab to view information about the entity being represented by nodes or edges in the topology graph. The fields vary depending on the entity type.

Field	Description
ID	Displays the ID of the entity. This field is displayed as a clickable link and takes you to the entity Summary Page. See “Opening Entity Summary Pages from Network Visualization Page” for more information.
Name	Displays the name of the entity.
Spec Name	Displays the specification of the entity.
Inventory Status	Displays the stage in the life cycle of the entity.
Property Location	Displays property location of the entity. This field is displayed as a clickable link and takes you to the Property Location Summary Page.
Place	Displays the place the entity is associated with. This field is displayed as a clickable link and takes you to the Place Summary Page.
Created User	Displays the name of the user who created the entity.
Created Date	Displays the date the entity was created on.

Using Zoom settings and Mini-Map in Network Visualization Page

You can zoom in to view a specific component by using the zoom settings bar at the right-bottom corner of the canvas and adjust viewing scope. For viewing all components in a topology graph, you can click the **Fit to Zoom** icon in the zoom settings bar.

There is also a **mini-map** on the left-bottom corner of the canvas. It shows the position of a selected topology component in the whole graph. You can click on the **collapsible legend** below the **mini-map** to see a list of specifications with their corresponding colors and icons present in the topology graph.

Viewing Maps in Network Visualization Page

You can view the topology graph of a network over various geographical maps in the Network Visualization page. These maps are available in the **Geomap** option under the **Advanced Settings** subtab in the Settings tab. To change the map type, you can simply select one of the different types in the **Advanced Settings** subtab. See "Adding Advanced Settings" and "Changing Display Settings" for more information about the fields in the subtabs in the Settings tab.

You can also change the opacity of the map by using the **Opacity in percentage** option and control the transparency of the map. You can change this by entering the percentage of opacity in the text box with a value between 0 to 100.

For more information on customizing topology graph view, see "Changing Topology Graph Settings in Network Visualization Page".

Working with Nodes in Network Visualization Page

When you first add a node to a network in the Network Visualization page, it can be either generic and undefined or created to represent a specific entity. For generic nodes, you can select a specification, choose a represented resource, and associate places with the node to define its function and location.

See the following topics:

- Adding a Node in Network Visualization Page
- Associating a Node with an Entity in Network Visualization Page
- Associating a Node with a Place in Network Visualization Page
- Viewing Node Information in Network Visualization Page
- Opening Entity Summary Pages from Network Visualization Page
- Editing Node Information in Network Visualization Page
- Editing Entity Information from Network Visualization Page
- Disassociating an Entity from a Node in Network Visualization Page
- Removing a Node from a Network in Network Visualization Page
- Isolating, Collapsing and Expanding a Node in the Network Visualization Page
- Disabling Links of a Node in the Network Visualization Page
- Viewing Links of a Node in the Network Visualization Page

Adding a Node in Network Visualization Page

To add a node to a network:

1. Open the Network Visualization page of a network.

   See "About Network Visualization Page" for more information. See "Working with Topology Graphs in Network Visualization Page" for information about customizing and performing actions in this page.

2. In the Actions Toolbar click on **Add node** icon.

   A dropdown list of resources you can add will appear.

> **Note:**
>
> To add nodes for any other resource, you can to switch to Network Topology View page using the **uim.ui.networkPlanAndBuild.canvas.enabled** system property in the **system-config.properties** file. For more information on using this property see Table 5-12 in *UIM System Administrator's Guide*.

3. Choose 'Node' to create a node.

   UIM adds a new node icon to the canvas.

4. (Optional) If you choose an entity type, a dialog box opens with the corresponding **Network Node entity Associate** page. From here, you can either create a new entity or search for an existing entity.

5. UIM adds a new node on the canvas.

For more information on associating a node with an entity, see “Associating a Node with an Entity in Network Visualization Page”.

Related Topics

Associating a Node with a Place in Network Visualization Page

Viewing Node Information in Network Visualization Page

Opening Entity Summary Pages from Network Visualization Page

Editing Node Information in Network Visualization Page

Editing Entity Information from Network Visualization Page

Disassociating an Entity from a Node in Network Visualization Page

Removing a Node from a Network in Network Visualization Page

Isolating, Collapsing and Expanding a Node in the Network Visualization Page

Disabling Links of a Node in the Network Visualization Page

Viewing Links of a Node in the Network Visualization Page

Associating a Node with an Entity in Network Visualization Page

You can use nodes to represent an entity in the topology graph. The color and icon of the node depends on the type of entity it is associated to.

In addition to representing a resource, a node can be associated with a place that defines its location. See "Associating a Node with a Place in Network Visualization Page" for more information. Place associations and resource representations are independent of each other.

To associate a resource with a node:

1. Open Network Visualization page of a network.

   See "About Network Visualization Page" for more information. See "Working with Topology Graphs in Network Visualization Page" for information about customizing and performing actions in this page.

2. Right-click on the node and select **Associate** from the menu that appears.

   A list of entity types you can add appears.

   > **Note:**
   >
   > To add nodes for any other entity type, you can to switch to Network Topology View page using the **uim.ui.networkPlanAndBuild.canvas.enabled** system property in the **system-config.properties** file. For more information on using this property see Table 5-12 in *UIM System Administrator's Guide*.

3. Select a resource type.

   The corresponding Network Node resource Associate dialog box appears.

4. Search for or create an entity of the type you selected.

5. In the Search Results section, select the resource.

6. Click **OK**.

   The node changes to an icon reflecting the entity type. The name of the entity is displayed below the node.

Related Topics

Adding a Node in Network Visualization Page

Viewing Node Information in Network Visualization Page

Opening Entity Summary Pages from Network Visualization Page

Editing Node Information in Network Visualization Page

Editing Entity Information from Network Visualization Page

Disassociating an Entity from a Node in Network Visualization Page

Removing a Node from a Network in Network Visualization Page

Isolating, Collapsing and Expanding a Node in the Network Visualization Page

Disabling Links of a Node in the Network Visualization Page

Viewing Links of a Node in the Network Visualization Page

Associating a Node with a Place in Network Visualization Page

You can associate places with nodes to define their geographic location.

To associate a resource with a place:

1. Open the Network Visualization page of a network.

   See "About Network Visualization Page" for more information. See "Working with Topology Graphs in Network Visualization Page" for information about customizing and performing actions in this page.
2. Select a node in the network.
3. Right-click on the node and select **Associate** from the menu that appears.

   A list of resources appears.
4. Select a resource type.

   The corresponding Network Node resource Associate dialog box appears.
5. Search for or create an entity of the type you selected.
6. In the Search Results section, select the resource.
7. Click **OK**.

   The node changes to an icon reflecting the entity type. The name of the entity is displayed below the node.

Related Topics

Adding a Node in Network Visualization Page

Associating a Node with an Entity in Network Visualization Page

Viewing Node Information in Network Visualization Page

Opening Entity Summary Pages from Network Visualization Page

Editing Node Information in Network Visualization Page

Editing Entity Information from Network Visualization Page

Disassociating an Entity from a Node in Network Visualization Page

Removing a Node from a Network in Network Visualization Page

Isolating, Collapsing and Expanding a Node in the Network Visualization Page

Disabling Links of a Node in the Network Visualization Page

Viewing Links of a Node in the Network Visualization Page

Viewing Node Information in Network Visualization Page

From the Network Visualization Page, you can view information about nodes and the resources they represent.

To view information about a node:

1. Open the Network Visualization page of a network.

   See "About Network Visualization Page" for more information. See "Working with Topology Graphs in Network Visualization Page" for information about customizing and performing actions in this page.
2. Select a node in the network.
3. The **Overview** tab appears on the right side of canvas. See “Overview tab” for more information about the fields in this tab.

Related Topics

Adding a Node in Network Visualization Page

Associating a Node with an Entity in Network Visualization Page

Associating a Node with a Place in Network Visualization Page

Opening Entity Summary Pages from Network Visualization Page

Editing Node Information in Network Visualization Page

Editing Entity Information from Network Visualization Page

Disassociating an Entity from a Node in Network Visualization Page

Removing a Node from a Network in Network Visualization Page

Isolating, Collapsing and Expanding a Node in the Network Visualization Page

Disabling Links of a Node in the Network Visualization Page

Viewing Links of a Node in the Network Visualization Page

Opening Entity Summary Pages from Network Visualization Page

You can open the Summary pages of entities represented by nodes and edges in the Network Topological View page. You can then use the Summary pages to view or edit information about the entity.

To open an entity Summary page:

1. Open the Network Visualization page of a network.

   See "About Network Visualization Page" for more information. See "Working with Topology Graphs in Network Visualization Page" for information about customizing and performing actions in this page.
2. Select a node in the network.
3. In the **Overview** tab, the entity **ID** field appears as a clickable link.

4. Click on the entity ID.

   The corresponding entity Summary page appears.

Related Topics

Adding a Node in Network Visualization Page

Associating a Node with an Entity in Network Visualization Page

Associating a Node with a Place in Network Visualization Page

Viewing Node Information in Network Visualization Page

Editing Node Information in Network Visualization Page

Editing Entity Information from Network Visualization Page

Disassociating an Entity from a Node in Network Visualization Page

Removing a Node from a Network in Network Visualization Page

Isolating, Collapsing and Expanding a Node in the Network Visualization Page

Disabling Links of a Node in the Network Visualization Page

Viewing Links of a Node in the Network Visualization Page

Editing Node Information in Network Visualization Page

You can edit node information directly through Network Visualization page to add or update its specifications, name, and descriptions. The ID for a node is automatically generated and cannot be changed. To edit information of the entity represented by a node, see “Editing Entity Information from Network Visualization Page”.

To edit node information:

1. Open the Network Visualization page of a network.

   See "About Network Visualization Page" for more information. See "Working with Topology Graphs in Network Visualization Page" for information about customizing and performing actions in this page.

2. Select a node in the network.
3. Click on the **Edit** icon in the Actions toolbar at the top of the canvas.

   The Network Node Information dialog box appears.

4. From the Specification list, select a specification for the node.
5. Enter additional required or optional information.
6. Click **Save and Close**.

   The topology graph refreshes. If you changed the name of the node or edge, the new name is shown.

Related Topics

Adding a Node in Network Visualization Page

Associating a Node with an Entity in Network Visualization Page

Associating a Node with a Place in Network Visualization Page

Viewing Node Information in Network Visualization Page

Opening Entity Summary Pages from Network Visualization Page

Disassociating an Entity from a Node in Network Visualization Page

Removing a Node from a Network in Network Visualization Page

Isolating, Collapsing and Expanding a Node in the Network Visualization Page

Disabling Links of a Node in the Network Visualization Page

Viewing Links of a Node in the Network Visualization Page

Editing Entity Information from Network Visualization Page

To edit information of an entity represented by a node:

1. Open the Network Visualization page of a network.

   See "About Network Visualization Page" for more information. See "Working with Topology Graphs in Network Visualization Page" for information about customizing and performing actions in this page.
2. Select a node in the network.
3. The **Overview** tab appears on the right-side of the canvas. See “Overview tab” for more information about the fields in this pane.
4. Click on the **ID** field.

   The entity Summary page appears
5. Click on the **Edit** button to edit the entity information.

Related Topics

Adding a Node in Network Visualization Page

Associating a Node with an Entity in Network Visualization Page

Associating a Node with a Place in Network Visualization Page

Viewing Node Information in Network Visualization Page

Opening Entity Summary Pages from Network Visualization Page

Editing Node Information in Network Visualization Page

Disassociating an Entity from a Node in Network Visualization Page

Removing a Node from a Network in Network Visualization Page

Isolating, Collapsing and Expanding a Node in the Network Visualization Page

Disabling Links of a Node in the Network Visualization Page

Viewing Links of a Node in the Network Visualization Page

Disassociating an Entity from a Node in Network Visualization Page

You can remove an entity represented by a node by disassociating it.

> **Note:**
>
> The disassociating process has no confirmation step. Once disassociated, you can associate the node to the same or different entity.

To disassociate an entity:

1. Open the Network Visualization page of a network.

   See "About Network Visualization Page" for more information. See "Working with Topology Graphs in Network Visualization Page" for information about customizing and performing actions in this page.
2. Right-click a node representing an entity.
3. Select **Disassociate Entity** from the menu that appears. The corresponding keyboard shortcut also appears next to it. You can use this shortcut to disassociate an entity from a node.

   The resource is disassociated from the node.

Related Topics

Adding a Node in Network Visualization Page

Associating a Node with an Entity in Network Visualization Page

Associating a Node with a Place in Network Visualization Page

Viewing Node Information in Network Visualization Page

Opening Entity Summary Pages from Network Visualization Page

Editing Node Information in Network Visualization Page

Editing Entity Information from Network Visualization Page

Removing a Node from a Network in Network Visualization Page

Isolating, Collapsing and Expanding a Node in the Network Visualization Page

Disabling Links of a Node in the Network Visualization Page

Viewing Links of a Node in the Network Visualization Page

Removing a Node from a Network in Network Visualization Page

You can remove a node directly from the Network Visualization page even when it represents an entity. But deleting the node will only disassociate the entity and remove it from the topology graph.

To delete a node from a network:

1. Open the Network Visualization page of a network.

   See "About Network Visualization Page" for more information. See "Working with Topology Graphs in Network Visualization Page" for information about customizing and performing actions in this page.
2. Select the node to be deleted.
3. In the Actions toolbar click on **Delete** icon.

A dialog box will appear asking you to confirm the action. If you are deleting a node with an edge, then the dialog box shows a message that the edge will be deleted along with the node.

4. Click **Proceed** to delete the node.

   The node (and its associated edge) is deleted from the canvas.

Related Topics

Adding a Node in Network Visualization Page

Associating a Node with an Entity in Network Visualization Page

Associating a Node with a Place in Network Visualization Page

Viewing Node Information in Network Visualization Page

Opening Entity Summary Pages from Network Visualization Page

Editing Node Information in Network Visualization Page

Editing Entity Information from Network Visualization Page

Disassociating an Entity from a Node in Network Visualization Page

Isolating, Collapsing and Expanding a Node in the Network Visualization Page

Disabling Links of a Node in the Network Visualization Page

Viewing Links of a Node in the Network Visualization Page

Isolating, Collapsing and Expanding a Node in the Network Visualization Page

You can isolate, collapse or expand a node from a network to view only the neighboring nodes it has connections with. This option hides all other nodes not connected to the selected node, allowing you to view the selected node independently of the topology graph.

> **Note:**
>
> The **Expand node** option is only available when a node is collapsed or isolated.

To isolate, collapse and expand a node:

1. Open the Network Visualization page of a network.

   See "About Network Visualization Page" for more information. See "Working with Topology Graphs in Network Visualization Page" for information about customizing and performing actions in this page.

2. Right-click on a node.

3. Select the **Isolate** option. The corresponding keyboard shortcut also appears next to it. You may directly use this shortcut to isolate a node.

   Only the selected node and its associated nodes are visible.

4. (Optional) Select the **Collapse** option. The corresponding keyboard shortcut also appears next to it. You may directly use this shortcut to collapse a node.

   The nodes associated with the selected node are hidden from view.

5. (Optional) Select the **Expand** option. The corresponding keyboard shortcut also appears next to it. You may directly use this shortcut to collapse a node.

   All the hidden nodes are visible.

Related Topics

Adding a Node in Network Visualization Page

Associating a Node with an Entity in Network Visualization Page

Associating a Node with a Place in Network Visualization Page

Viewing Node Information in Network Visualization Page

Opening Entity Summary Pages from Network Visualization Page

Editing Node Information in Network Visualization Page

Editing Entity Information from Network Visualization Page

Disassociating an Entity from a Node in Network Visualization Page

Removing a Node from a Network in Network Visualization Page

Disabling Links of a Node in the Network Visualization Page

Viewing Links of a Node in the Network Visualization Page

Disabling Links of a Node in the Network Visualization Page

You can hide all links (connectivities, pipes and edges) a node has with its neighboring nodes. This action allows you to view a particular node in relation to other nodes in the topology. This option also allows you to hide edges of nodes that are overlapping.

To hide edges of a node:

1. Open the Network Visualization page of a network.

   See "About Network Visualization Page" for more information. See "Working with Topology Graphs in Network Visualization Page" for information about customizing and performing actions in this page.

2. Right-click on a node.

3. Select the **Disable links** option from the menu that appears. The corresponding keyboard shortcut for it also appears next to it. You may directly use this shortcut to hide all edges.

   All the links a node has with other nodes is hidden on the canvas.

Related Topics

Adding a Node in Network Visualization Page

Associating a Node with an Entity in Network Visualization Page

Associating a Node with a Place in Network Visualization Page

Viewing Node Information in Network Visualization Page

Opening Entity Summary Pages from Network Visualization Page

Editing Node Information in Network Visualization Page

Editing Entity Information from Network Visualization Page

Disassociating an Entity from a Node in Network Visualization Page

Removing a Node from a Network in Network Visualization Page

Isolating, Collapsing and Expanding a Node in the Network Visualization Page

Viewing Links of a Node in the Network Visualization Page

Viewing Links of a Node in the Network Visualization Page

You can view all the links a node has with its neighboring nodes on the topology graph. When all the links are visible on the canvas, this option will be greyed out.

1. Open the Network Visualization page of a network.

   See "About Network Visualization Page" for more information. See "Working with Topology Graphs in Network Visualization Page" for information about customizing and performing actions in this page.

2. Right-click on a node.

3. Choose the **Show link** option from the menu that appears. The corresponding keyboard shortcut also appears next to it. You can use this shortcut to perform show link action.

   Only the links of the selected node with its neighboring nodes is visible.

Related Topics

Adding a Node in Network Visualization Page

Associating a Node with an Entity in Network Visualization Page

Associating a Node with a Place in Network Visualization Page

Viewing Node Information in Network Visualization Page

Opening Entity Summary Pages from Network Visualization Page

Editing Node Information in Network Visualization Page

Editing Entity Information from Network Visualization Page

Disassociating an Entity from a Node in Network Visualization Page

Removing a Node from a Network in Network Visualization Page

Isolating, Collapsing and Expanding a Node in the Network Visualization Page

Disabling Links of a Node in the Network Visualization Page

Working with Edges in Network Visualization Page

Edges represent connectivity between nodes in your network. An edge can represent a specific, defined connection such as a pipe or connectivity, or it can represent a more generalized connection, such as a dynamic route through another network.

In the Network Visualization page edges are represented by black lines, pipes by red lines and connectivities by green lines on the topology graph.

See the following topics:

- Adding an Edge to a Network in Network Visualization Page
- Associating a Pipe or Connectivity to an Edge in Network Visualization Page

- Viewing Edge Information in Network Visualization Page
- Editing Edge Information in Network Visualization Page
- Editing Pipe or Connectivity Information from Network Visualization Page
- Removing an Edge from the Network in Network Visualization Page

Adding an Edge to a Network in Network Visualization Page

To add edges to a network:

1. Open the Network Visualization page of a network.

   See "About Network Visualization Page" for more information. See "Working with Topology Graphs in Network Visualization Page" for information about customizing and performing actions in this page.
2. Click one of the two nodes that share an edge.
3. Press and hold the **Ctrl** key and click the second node.
4. In the Actions toolbar click on **Add edge** icon.

   A dropdown list of entity types will appear.
5. Choose 'Edge' option to create an edge.
6. (Optional) If you choose **Pipe** or **Connectivity**, a dialog box opens with the corresponding entity's Search Page. From here, you can either create a new entity or search for an existing entity.
7. An edge is created between the two nodes selected on the topology graph.

See "Associating a Pipe or Connectivity to an Edge in Network Visualization Page" for more information on associating a pipe or connectivity to an edge.

Related Topics

Viewing Edge Information in Network Visualization Page

Editing Edge Information in Network Visualization Page

Editing Pipe or Connectivity Information from Network Visualization Page

Removing an Edge from the Network in Network Visualization Page

Associating a Pipe or Connectivity to an Edge in Network Visualization Page

You can associate a network edge with a pipe or connectivity. You can leave the network edge undefined if the connectivity is not known or if it is through a dynamic route in another network.

In the Network Visualization page, edges are shown as lines that connect network nodes. The line is black if the edge is not associated with a pipe or connectivity. The line is red if the edge is associated to a pipe, or green when associated with a connectivity.

To associate a pipe or connectivity with an edge:

1. Open the Network Visualization page of a network.

   See "About Network Visualization Page" for more information. See "Working with Topology Graphs in Network Visualization Page" for information about customizing and performing actions in this page.
2. Right-click an edge in the topology graph.

3. Select **Associate** from the menu that appears and choose **Pipe** or **Connectivity**.

   An entity Search Page appears.

4. Search for or create an entity of the appropriate type.
5. In the Search Results section, select the entity you want and click OK.

   The edge changes from a dotted line to a solid line.

Related Topics

Adding an Edge to a Network in Network Visualization Page

Viewing Edge Information in Network Visualization Page

Editing Edge Information in Network Visualization Page

Editing Pipe or Connectivity Information from Network Visualization Page

Removing an Edge from the Network in Network Visualization Page

Viewing Edge Information in Network Visualization Page

To view information of an edge in Network Visualization page:

1. Open the Network Visualization page of a network.

   See "About Network Visualization Page" for more information. See "Working with Topology Graphs in Network Visualization Page" for information about customizing and performing actions in this page.

2. Select an edge on the network.
3. The **Overview** tab appears on the right side of the canvas with information about the edge. See “Overview tab” for more information about the fields in this pane.

Related Topics

Adding an Edge to a Network in Network Visualization Page

Associating a Pipe or Connectivity to an Edge in Network Visualization Page

Editing Edge Information in Network Visualization Page

Editing Pipe or Connectivity Information from Network Visualization Page

Removing an Edge from the Network in Network Visualization Page

Editing Edge Information in Network Visualization Page

To edit edge information:

1. Open the Network Visualization page of a network.

   See "About Network Visualization Page" for more information. See "Working with Topology Graphs in Network Visualization Page" for information about customizing and performing actions in this page.

2. Select an edge on the topology graph.
3. Click on the **Edit** icon in the Actions toolbar at the top of the canvas.

   The Network Node Information dialog box appears.

4. From the **Specification** list, select a specification for the edge.

5. Enter additional required or optional information.
6. Click **Save and Close**.

   The topology graph refreshes.

Related Topics

Adding an Edge to a Network in Network Visualization Page

Associating a Pipe or Connectivity to an Edge in Network Visualization Page

Viewing Edge Information in Network Visualization Page

Editing Pipe or Connectivity Information from Network Visualization Page

Removing an Edge from the Network in Network Visualization Page

Editing Pipe or Connectivity Information from Network Visualization Page

To edit the information of a pipe or connectivity represented by an edge:

1. Open the Network Visualization page of a network.

   See "About Network Visualization Page" for more information. See "Working with Topology Graphs in Network Visualization Page" for information about customizing and performing actions in this page.
2. Select an edge on the network.
3. The **Overview** tab appears on the right-side of the canvas. See “Overview tab” for more information about the fields in this pane.
4. Click on the **ID** field.

   The entity Summary page appears.
5. Click on the **Edit** button to edit the entity information.

Related Topics

Adding an Edge to a Network in Network Visualization Page

Associating a Pipe or Connectivity to an Edge in Network Visualization Page

Viewing Edge Information in Network Visualization Page

Editing Edge Information in Network Visualization Page

Removing an Edge from the Network in Network Visualization Page

Removing an Edge from the Network in Network Visualization Page

To remove an edge from Network Visualization page:

1. Open the Network Visualization page of a network.

   See "About Network Visualization Page" for more information. See "Working with Topology Graphs in Network Visualization Page" for information about customizing and performing actions in this page.
2. Select the edge to be removed.
3. In the Actions toolbar click on **Delete** icon.

   A dialog box will appear asking you to confirm the action.

4. Click **Proceed** to delete the edge.
5. The edge will be removed.

Related Topics

Adding an Edge to a Network in Network Visualization Page

Associating a Pipe or Connectivity to an Edge in Network Visualization Page

Viewing Edge Information in Network Visualization Page

Editing Edge Information in Network Visualization Page

Editing Pipe or Connectivity Information from Network Visualization Page

Working with Subnetworks in Network Visualization Page

Nodes in a network diagram can be used to represent other networks in the topology graph as a **subnetwork**. These subnetworks can be added to a topology graph by adding a node and associating it to an existing network. See "Associating a Node with an Entity in Network Visualization Page" for more information.

See the following topics:

- Adding a Node to a Subnetwork in Network Visualization Page
- Adding an Internetwork Node to a Subnetwork in Network Visualization Page

Adding a Node to a Subnetwork in Network Visualization Page

When a node in a network diagram represents a child network, you can expand the node to display the nodes and edges in the child network.

To add nodes to a subnetwork:

1. Open the Network Visualization page of a network.

   See "About Network Visualization Page" for more information. See "Working with Topology Graphs in Network Visualization Page" for information about customizing and performing actions in this page.
2. Right-click on a node representing a subnetwork.
3. Select **Isolate** option from the menu that appears. The corresponding keyboard shortcut also appears next to it. You can use this shortcut to perform show link action.
4. The nodes and edges of the subnetwork are shown on the canvas.

   You can also exit the subnetwork view by clicking on the **Close** icon appearing on top of the **Geomap** icon.
5. Click **Add node** icon in the actions toolbar.

   A dropdown list of resources you can add will appear.
6. Choose 'Node' to create a node.

   UIM adds a new node icon to the canvas. For associating an entity to this node, see "Associating a Node with an Entity in Network Visualization Page".

You use the same procedure to view information about subnetwork nodes that you do for other network nodes. See "Viewing Node Information in the Network Visualization Page" for more information.

You can use the same procedure to isolate, collapse and expand a subnetwork node that you do in parent nodes. See “Isolating, Collapsing and Expanding a Node in Network Visualization Page” for more information.

Adding an Internetwork Node to a Subnetwork in Network Visualization Page

Internetwork nodes are the nodes of a subnetwork which have a connection with other networks. You can add internetwork nodes to a subnetwork in the Network Visualization page.

To add internetwork nodes to a subnetwork:

1. Open the Network Visualization page of a network.

   See "About Network Visualization Page" for more information. See "Working with Topology Graphs in Network Visualization Page" for information about customizing and performing actions in this page.
2. Right-click on the node representing a subnetwork and select **Add Internetwork node** option. The corresponding keyboard shortcut also appears next to it. You can use this shortcut to add internetwork node to a subnetwork.

   The Network Node Search dialog box appears.
3. Search for a the node you want to add as internetwork node.

   In the Search Results section, select the desired node. You may also add any number of internetwork nodes by pressing **Ctrl** key from your keyboard.
4. Click on OK.

   The subnetwork node icon refreshes to show that a new internetwork node is added.

Opening the Network Topological View Page

To open the Network Topological View page:

1. Open the Summary page for a Network entity for which you want to view the topology.
2. Click the **Visualization** tab.

   The **Network Topological View** subtab appears by default, which contains the Network Topological View page. See "Network Topological View Page" for information about the fields in this page.

Related Topics

Designing a Network in the Network Topological View

Saving the Network Topological View as a Graphic File

You can save the visible area of the Network Topological View page as a graphic file in JPG format.

To save the Network Topological View page as a graphic file:

1. Right-click the visualization in the Network Topological View page.
2. In the menu that appears, select **Save as Image**, then **Visible View**.
3. Save the file to the desired location.

Related Topics

Opening the Network Topological View Page

Working with Nodes

When you first add a node to a network in the Network Topological View page, it is generic and undefined. You can select a specification, choose a represented resource, and associate places with the node to define its function and location.

See the following topics:

- Adding Nodes to a Network
- Representing Resources with Nodes
- Removing Resources Represented by Nodes
- Getting Information About Nodes
- Opening Entity Summary Pages from the Network Topological View
- Associating Places with Nodes
- Maintaining Places Associated with Nodes

Adding Nodes to a Network

To add nodes to a network:

1. Open the Summary page for a Network entity for which you want to view the topology.
2. Click the **Visualization** tab.

   On the **Network Topological View** subtab, the Network Topological View page appears. See "Network Topological View Page" for information about fields in this page.
3. In the toolbar, click the **New Node** button.

   UIM adds a new node icon to the canvas.
4. (Optional) Apply a specification to the node.

   See "Adding Specifications and Identifying Information to Nodes and Edges" for more information.

Related Topics

Representing Resources with Nodes

Removing Resources Represented by Nodes

Getting Information About Nodes

Associating Places with Nodes

Maintaining Places Associated with Nodes

Representing Resources with Nodes

You can use nodes to represent resources in your network. Separating nodes from the resources they represent makes it possible to keep up with equipment changes without having to update the network topology.

Some network node specifications limit the types of resources that can be represented by the node. For example, the DSL Network Node specification might allow representation of only DSLAM Logical Device specification entities.

If a Network Node specification does not limit representations, a node can represent a custom object, custom network address, device interface, equipment, logical device, network, place, party, physical device, or physical port.

Each entity type has a distinctive icon that replaces the generic icon displayed for nodes that do not represent resources. When you select a resource for the node to represent, the node's icon changes to reflect the entity type. You can click this icon to get information about a node's association. See "Getting Information About Nodes" for more information.

In addition to representing a resource, a node can be associated with a place that defines its location. See "Associating Places with Nodes" for more information. Place associations and resource representations are independent of each other.

To select resources represented by nodes:

1. Open the Network Topological View page for a network.

   See "Opening the Network Topological View Page" for more information. See "Network Topological View Page" for information about fields in this page.
2. Right-click a node in the network and select **Represents**.

   A list of resources appears.
3. Select a resource type.

   The Network Node Associate dialog box appears.
4. Search for or create an entity of the type you selected.
5. In the Search Results section, select the resource.
6. Click **OK**.

   The node icon changes to reflect the entity type.

Related Topics

Adding Nodes to a Network

Removing Resources Represented by Nodes

Maintaining Places Associated with Nodes

Adding Specifications and Identifying Information to Nodes and Edges

Removing Resources Represented by Nodes

After you remove a resource, you can select another resource to be represented by the node.

To remove a resource representation:

1. Open the Network Topological View page for a network.

   See "Opening the Network Topological View Page" for more information. See "Network Topological View Page" for information about fields in this page.
2. In the network diagram, right-click the node that represents the resource to be removed.

   Nodes that represent resources have distinctive icons for the resource type. A menu appears that includes a **Remove** command for the resource. For example, the command **Remove Logical Device** appears for a node that represents a logical device.

3. Select **Remove**.

   A dialog box for the entity type associated with the node appears.

4. Select the row containing the entity and click **Disassociate**.

Related Topics

Adding Nodes to a Network

Representing Resources with Nodes

Getting Information About Nodes

Associating Places with Nodes

Maintaining Places Associated with Nodes

Getting Information About Nodes

From the Network Topological View page, you can get information about nodes and the resources they represent.

To get information about a node:

1. Open the Network Topological View page for a network.

   See "Opening the Network Topological View Page" for more information. See "Network Topological View Page" for information about fields in this page.

2. Select a node in the network canvas.

   For infrastructure networks, the node name and ID appear in the information section to the right of the diagram. The section also provides information about the network itself.

   For packet virtual networks and service networks, information about the flow interface represented by the node appears below the network canvas.

Related Topics

Adding Nodes to a Network

Representing Resources with Nodes

Removing Resources Represented by Nodes

Associating Places with Nodes

Maintaining Places Associated with Nodes

Opening Entity Summary Pages from the Network Topological View

You can open the Summary pages of entities represented by nodes and edges in the Network Topological View page. You can then use the Summary pages to view or edit information about the entity.

To open a Summary page:

1. Open the Network Topological View page for a network.

   See "Opening the Network Topological View Page" for more information. See "Network Topological View Page" for information about fields in this page.

2. Right-click a node and select the **Summary** command for the entity you want to open. For example, if the node represents a custom object, select **Custom Object Summary**.

   The entity Summary page replaces the Network Topological View page.

Related Topics

Adding Nodes to a Network

Representing Resources with Nodes

Removing Resources Represented by Nodes

Associating Places with Nodes

Maintaining Places Associated with Nodes

Associating Places with Nodes

You can associate places with nodes to define their geographic location. If the place associated with a node has latitude and longitude coordinates or is associated with an address that has latitude and longitude coordinates, the node can be displayed in the Map View page. See "Using the Map View" for more information.

You make place associations separately from selecting resource representations.

> **Note:**
>
> A network node can represent a place or it can be associated with a place. If the node represents a place, you cannot also associate a place to the node. You can, however, change a place representation to an association. If a node currently represents a place, selecting a different entity for the node to represent automatically converts the place to an association.

To associate places with nodes:

1. Open the Network Topological View page for a network.

   See "Opening the Network Topological View Page" for more information. See "Network Topological View Page" for information about fields in this page.

2. Right-click a node in the network and select **Place**.

   The entity Search page appears.

3. Search for or create a Place entity.
4. In the Search Results section, select the place.
5. Click **OK**.

   The name of the associated place appears after the node name.

Related Topics

Adding Nodes to a Network

Representing Resources with Nodes

Removing Resources Represented by Nodes

Getting Information About Nodes

Maintaining Places Associated with Nodes

Maintaining Places Associated with Nodes

You can see information about a place associated with a node, remove the association, or go to the Summary page of the place.

To maintain place associations:

1. Open the Network Topological View page for a network.

   See "Opening the Network Topological View Page" for more information. See "Network Topological View Page" for information about fields in this page.

2. Right-click a node in the network that has a place association and select **Maintain Place**.

   Information about the place association appears.

3. (Optional) Click **Disassociate** to remove the association.

4. (Optional) Right-click the node and select **Place Summary** to view the Summary page for an associated place.

Related Topics

Adding Nodes to a Network

Representing Resources with Nodes

Removing Resources Represented by Nodes

Getting Information About Nodes

Associating Places with Nodes

Working with Edges

Edges represent connectivity between nodes in your network. An edge can represent a specific, defined connection such as a pipe or connectivity, or it can represent a more generalized connection, such as a dynamic route through another network.

See the following topics for more information about working with edges:

- Adding Edges to a Network
- Associating Pipes, Custom Objects, and Connectivities with Edges
- Viewing Entities Associated to Edges
- Removing Entity Associations from Edges

Adding Edges to a Network

To add edges to a network:

1. Open the Network Topological View page for a network.

   See "Opening the Network Topological View Page" for more information. See "Network Topological View Page" for information about fields in this page.

2. In the toolbar, click the **Select** button.

3. Click one of the two nodes that share an edge.
4. Press and hold the **Ctrl** key and click the second node.
5. In the toolbar, click the **Create Edge** button.

   UIM creates the edge, represented by a dotted line between the two nodes.
6. (Optional) Apply a specification to the edge.

   See "Adding Specifications and Identifying Information to Nodes and Edges" for instructions.

Related Topics

Associating Pipes, Custom Objects, and Connectivities with Edges

Viewing Entities Associated to Edges

Removing Entity Associations from Edges

Associating Pipes, Custom Objects, and Connectivities with Edges

You can associate a network edge with one or more pipes or connectivities. You can leave the network edge undefined if the connectivity is not known or if it is through a dynamic route in another network. You can also associate a network edge with one or more Custom Object entities that define a type of connectivity not available in the default model.

> **Note:**
>
> In packet virtual networks, only connectivities can be associated with network edges.

In the Network Topological View page, edges are shown as lines that connect network nodes. The line is dotted if the edge is not associated with a pipe, connectivity, or custom object. The line is solid if the edge has an association with one of these entities.

Some network edge specifications limit the associations an edge can have. For example, a Network Edge specification could limit the edge to associations with T1 and T3 Pipe specification entities.

To associate a pipe, connectivity, or custom object with an edge:

1. Open the Network Topological View page for a network.

   See "Opening the Network Topological View Page" for more information. See "Network Topological View Page" for information about fields in this page.
2. Right-click an edge in the network and select **Associate Pipe**, **Associate Connectivity**, or **Associate Custom Object**.

   An entity Search page appears.
3. Search for or create an entity of the appropriate type.
4. In the Search Results section, select the entity you want and click **OK**.

   The edge changes from a dotted line to a solid line.

Related Topics

Adding Edges to a Network

Viewing Entities Associated to Edges

Removing Entity Associations from Edges

Creating Edges Involving Nodes in Child Networks

Viewing Entities Associated to Edges

To view entities associated to an edge:

1. Open the Network Topological View page for a network.

   See "Opening the Network Topological View Page" for more information. See "Network Topological View Page" for information about fields in this page.

2. In the network visualization, right-click an edge that is shown as a solid line and select **Pipe Summary**, **Connectivity Summary**, or **Custom Object Summary**.

   If only a single entity of the selected type is associated to the edge, its Summary page appears. If more than one entity of that type is associated with the edge, a list appears.

3. Click a link in the list to open the Summary page for that pipe or custom object.

Related Topics

Adding Edges to a Network

Associating Pipes, Custom Objects, and Connectivities with Edges

Removing Entity Associations from Edges

Creating Edges Involving Nodes in Child Networks

Adding Specifications and Identifying Information to Nodes and Edges

Removing Entity Associations from Edges

To remove an entity association from an edge:

1. Open the Network Topological View page for a network.

   See "Opening the Network Topological View Page" for more information. See "Network Topological View Page" for information about fields in this page.

2. In the network diagram, right-click an edge that is shown as a solid line. select **Remove**.

   A list of entities appears.

3. Select the entity to remove and click **Disassociate**.

   The entity association is removed. If there are no more associations, the edge changes back to a dotted line.

Related Topics

Adding Edges to a Network

Associating Pipes, Custom Objects, and Connectivities with Edges

Viewing Entities Associated to Edges

Automatically Creating Nodes and Edges for Pipes and Connectivities

You can automatically create nodes and edges in the Network Topological View page based on pipes or connectivities that you select. UIM creates edges associated to pipes and connectivities and nodes to represent their termination points.

As with all network nodes, the nodes that UIM creates represent parent devices, not the interfaces, ports, or other entities that they provide. For example, if a pipe is terminated on a device interface, the network node represents the logical device that provides the interface. If a pipe or connectivity is terminated on a physical device that is associated with a logical device, then the node represents the logical device. See *UIM Concepts* for more information about how the UIM topology represents device hierarchies.

See the following topics:

- Automatically Creating Nodes and Edges for Connectivity Entities
- Automatically Creating Nodes and Edges for Pipes

Automatically Creating Nodes and Edges for Connectivity Entities

You can automatically create nodes and edges based on existing connectivities.

> **Note:**
>
> If the connectivity is terminated on a property location and not on the device interface of a logical device associated to the property location, then the network node is not associated with the property location, but has the same name as the property location.

To automatically create nodes and edges for a connectivity:

1. Open the Network Topological View page for a network.

   See "Opening the Network Topological View Page" for more information. See "Network Topological View Page" for information about fields in this page.
2. In the toolbar, click the **Associate Connectivity** icon.

   The Associate Connectivity dialog box appears.
3. Enter search criteria in the Search section and click **Search**. See "Searching for Entities" for more information.
4. In the Search Results section, select one or more connectivities and click **OK**.

   UIM creates nodes and edges to represent the selected connectivities and their termination points. The nodes and edge are displayed in the Network Topological View page.

Related Topics

Adding Connectivities to Packet Virtual Networks

Automatically Creating Nodes and Edges for Pipes

Automatically Creating Nodes and Edges for Pipes

You can automatically create nodes and edges based on existing pipes.

When a pipe is terminated to a network, the network node has the same name as the network but is not associated with it.

To automatically create nodes and edges for a pipe:

1. Open the Network Topological View page for a network.

   See "Opening the Network Topological View Page" for more information. See "Network Topological View Page" for information about fields in this page.

2. In the toolbar, click the **Associate Pipe** icon.

   The Associate Pipe dialog box appears.

3. Enter search criteria in the Search section and click **Search**. See "Searching for Entities" for more information.

4. In the Search Results section, select one or more pipes and click **OK**.

   UIM creates nodes and edges to represent the selected pipes and their termination points. The nodes and edge are displayed in the Network Topological View page.

Adding Flow Interfaces to Packet Virtual Networks

There are two ways to add flow interfaces to packet virtual networks:

- Adding Flow Interfaces to Packet Virtual Networks from the Network Topological View
- Adding Flow Interfaces to Packet Virtual Networks As Configuration Items

The result is the same with both methods. The flow interface is added to the network configuration and to the network topology.

When you add a flow interface, you select a parent device interface and specify the termination type and technology values. UIM uses these values to select an appropriate specification to use for the flow interface.

If there is already connectivity terminated on the parent media interface of the flow interface you are creating and you select a termination type or technology that is incompatible with the connectivity, you see an error message. For example, if you select **Internetwork** as the termination type and there is network access connectivity already terminated on the media interface, UIM displays an error message.

You also set a bit rate for the flow interface. The sum of the bit rates of the flow interfaces under a media interface cannot exceed the bit rate of the media interface. For example, you cannot add more than ten 100 Mbps flow interfaces under a 1 Gbps media interface.

After you add flow interfaces to the packet virtual network, you can monitor its consumption in the hierarchy of its parent logical device and device interface. See "Viewing Information About Flow Interface Consumption".

Flow interfaces can be added automatically to network configurations and topologies in some scenarios. For example, the UIM Carrier Ethernet cartridge includes specifications that have the capability to add flow interfaces automatically.

Adding Flow Interfaces to Packet Virtual Networks from the Network Topological View

Because the only nodes that can be included in a packet virtual network are those that represent flow interfaces, the Network Topological View page toolbar includes a **Flow Interface** icon instead of the **Insert Node** icon for packet virtual networks. You use this icon to add flow interfaces and nodes to represent them. The flow interfaces you add in the Network Topological View page are added automatically to the network configuration.

To add flow interfaces to a packet virtual network from the topological view:

1. Open the Network Topological View page for a network.

   See "Opening the Network Topological View Page" for more information. See "Network Topological View Page" for information about fields in this page.

2. In the toolbar, click **Add Flow Interface**.

   The Network Node Flow Interface Associate dialog box appears.

3. In the Logical Device Search section, enter search criteria and click **Search**.

   The logical devices that meet your search criteria are displayed in the Logical Device Hierarchy section.

4. In the **Termination Type** list in the Assign Flow Interface Details section, select the termination type (**Access**, **Trunk**, **Internetwork** or **Unknown**).

5. In the **Flow Interface Bit Rate** field, enter the bit rate to be used for the flow interface. The bit rate is required for **Access** and **Internetwork** flow interfaces and optional for **Trunk** flow interfaces.

6. In the **Technology** field, select the technology.

   The valid values for technology are **ATM**, **Frame Relay**, **Ethernet** and **IP**.

7. In the Logical Device Hierarchy section, expand a logical device and then select a media interface to provide the flow interface you are adding. (A media interface is a device interface that is at the top level of the device interface hierarchy.)

8. Click **Create** or **Create and Close**.

   UIM verifies that there is sufficient capacity on the selected device interface for a flow interface of the specified bit rate. If there is sufficient capacity, the flow interface is created. If there is insufficient capacity, you see an error message.

   If you clicked **Create and Close**, the dialog box closes and the network topology canvas includes the flow interface you added. If you clicked **Create**, the dialog box remains open so that you can create additional flow interfaces.

Related Topics

Adding Flow Interfaces to Packet Virtual Networks As Configuration Items

Adding Flow Interfaces to Packet Virtual Networks As Configuration Items

You can assign a flow interface to a packet virtual network by assigning it as a configuration item in the network configuration. A network configuration is added automatically when you create a packet virtual network.

To add flow interfaces to a packet virtual network as configuration items:

1. Open the current network configuration.

See "Opening Configurations" for more information.

2. In the Configuration Items section, right-click **Flow Interface List** and select **Add Config Item**.

   The Choose Configuration Items to be Added dialog box appears.

3. In the Quantity column of a Flow Interface row, select a number of interfaces to be created.

4. Click **Save and Close**.

   The dialog box closes and a rows is added to the **Flow Interface List** folder for each interface created.

5. Select a row in the **Flow Interface List** folder.

6. In the Specification column of the selected row, select the specification of the flow interface you want to add to the network configuration.

7. In the Actions column, click **Assign**.

   The Network Node Flow Interface Associate dialog box appears.

8. In the Logical Device Search section, enter search criteria and click **Search**.

   The logical devices that meet your search criteria are displayed in the Logical Device Hierarchy section.

9. (Optional) In the **Termination Type** list in the Assign Flow Interface Details section, select the termination type (**Access**, **Trunk**, **Internetwork** or **Unknown**).

10. In the **Flow Interface Bit Rate** field, enter the bit rate to be used for the flow interface. The bit rate is required for **Access** and **Internetwork** flow interfaces and optional for **Trunk** flow interfaces.

11. In the **Technology** field, select the technology.

    The valid values for technology are **ATM**, **Frame Relay**, Ethernet and IP.

12. In the Logical Device Hierarchy section, expand a logical device and then select a media interface to provide the flow interface you are adding. (A media interface is a device interface that is at the top level of the device interface hierarchy.)

13. Click **Create** or **Create and Close**.

    UIM verifies that there is sufficient capacity on the selected device interface for a flow interface of the specified bit rate. If there is sufficient capacity, the flow interface is created. If there is insufficient capacity, you see an error message.

    If you clicked **Create and Close**, the dialog box closes and the network topology canvas includes the flow interface you added. If you clicked **Create**, the dialog box remains open so that you can create additional flow interfaces.

Related Topics

Adding Flow Interfaces to Packet Virtual Networks from the Network Topological View

Assigning a Bit Rate to Flow Interfaces

When you associate connectivities to a network, UIM automatically creates flow interfaces for those connectivities. The newly created flow interfaces have a bit rate of zero. Rather than setting the bit rate for each flow interface individually, you can assign a bit rate to all flow interfaces in the network or to selected flow interfaces.

If you assign a bit rate in this way to a flow interface that already had one, the old bit rate is overwritten with the new one.

To assign a bit rate to flow interfaces:

1. Open the Network Topological View page for a packet virtual network.

   See "Opening the Network Topological View Page" for more information. See "Network Topological View Page" for information about fields in this page.
2. (Optional) Select the flow interfaces to which you want to assign a bit rate.
3. Click **Design Steps** in the toolbar, then select **Assign Bit Rate**.
4. In the Assign Bit Rate dialog box, enter the bit rate value and select the unit or measure.
5. Click **OK**.

   The dialog box closes and UIM assigns the bit rate to the selected flow interfaces or to all flow interfaces (if you did not select flow interfaces).

Related Topics

Adding Connectivities to Packet Virtual Networks

Adding Cross-Connects Between Flow Interfaces

You can use the Network Topological View page to add interface-bound cross-connects between two flow interfaces in packet virtual networks. UIM automatically creates edges to represent them.

There are several rules that govern when you can create a cross-connect between flow interfaces:

- Only two flow interfaces can be selected.
- For Access and Internetwork flow interfaces, the two flow interfaces can be provided by different media interfaces on the same logical device or on media interfaces of different logical devices that share a common parent.
- An internetwork interface can be cross-connected only to a trunk interface.
- A trunk interface can be cross-connected to any other interface, including another trunk interface.
- An access interface can be connected to an internetwork or trunk interface, but not to another access interface.

The UIM Carrier Ethernet cartridge includes specifications and rulesets that have the ability to create cross-connects automatically. When you create an Access flow interface and then a Trunk flow interface on the same device, UIM creates a cross-connect automatically.

To add a cross-connect between flow interfaces:

1. Open the Network Topological View page for a packet virtual network.

   See "Opening the Network Topological View Page" for more information. See "Network Topological View Page" for information about fields in this page.
2. Select a flow interface node.
3. Press and hold the **Ctrl** key and select a second node that represents a flow interface provided by the same media interface.
4. In the toolbar, click the **Create Flow Interface Interconnect** button.

   UIM creates the cross-connect and represents it with a dotted line between the two nodes.
5. (Optional) Apply a specification to the edge.

See "Adding Specifications and Identifying Information to Nodes and Edges" for instructions.

Adding Connectivities to Packet Virtual Networks

When you add connectivities to packet virtual networks, UIM automatically creates nodes and edges in packet virtual networks. You can add only existing packet connectivity entities.

When you select a connectivity, UIM creates one or two flow interfaces to be represented as a node or nodes in the Network Topological View page. Two flow interfaces are created unless the selected connectivity is a network access connectivity. In that case, only the flow interface for the device interface on the Z location (the network location side) is created and added as a node to the network canvas.

The automatically created flow interfaces have a bit rate of zero. You must assign a different bit rate to these flow interfaces or to all flow interfaces in the network. See "Assigning a Bit Rate to Flow Interfaces" for more information.

If an access or internetworking flow interface is added and a trunk flow interface already exists for the same logical device, UIM automatically adds a cross connect between the two flow interfaces.

The connectivities are added as references to the network configuration. They are not assigned to the configuration.

After you add flow interfaces to the packet virtual network, you can monitor its consumption in the hierarchy of its parent logical device and device interface. See "Viewing Information About Flow Interface Consumption".

See the following topics:

- Adding Connectivities to Packet Virtual Networks from the Network Topological View
- Adding Flow Interfaces to Packet Virtual Networks As Configuration Items

Adding Connectivities to Packet Virtual Networks from the Network Topological View

To add a connectivity from the Network Topological View page:

1. Open the Network Topological View page for a packet virtual network.

   See "Opening the Network Topological View Page" for more information. See "Network Topological View Page" for information about fields in this page.

2. In the toolbar, click the **Associate Connectivity** icon.

   The Associate Connectivity dialog box appears.

3. Enter search criteria in the Search section and click **Search**. Because you are working in a packet virtual network, the Specifications list displays only packet connectivity specifications.

4. In the Search Results section, select a connectivity and click **OK**.

   The node or nodes and edge are displayed on the Network Topological View page. UIM creates one or two flow interfaces and references them on the packet virtual network configuration.

Associating Connectivities to Packet Virtual Networks as Configuration Items

To add a connectivity as a network configuration item:

1. Open the current network configuration.

   See "Opening Configurations" for more information.

2. In the Configuration Items section, right-click **Connectivity List** and select **Add Config Item**.

   The Choose Configuration Items to be Added dialog box appears.

3. In the Quantity column of a Connectivity row, select a number of interfaces to be created.

4. Click **Save and Close**.

   The dialog box closes and a row is added to the **Connectivity List** folder for each interface created.

5. Select a row in the **Connectivity List** folder.

6. In the Resource Specification column of the selected row, select the specification of the connectivity you want to add to the network configuration.

7. In the Actions column, click **Reference**.

   The Connectivity search dialog box appears, with the specification you selected already entered as a search criterion.

8. Enter additional search criteria in the Search section and click **Search**.

9. In the Search Results section, select a connectivity and click **OK**.

   The connectivity ID appears in the selected row in the connectivity list. The connectivity and its termination points are also added as an edge and two nodes to the Network Topological View page.

Assigning Flow Identifiers in the Network Topological View

You can assign and reference flow identifiers while you are designing packet virtual networks. You can assign flow identifiers to the network as a whole or to individual flow interfaces.

- If you assign a flow identifier to the network as a whole, UIM assigns the flow identifier to the network configuration and adds it as a reference on all flow interfaces in the network.
- If you reference a flow identifier to an individual flow interface, UIM adds the flow identifier reference to that flow interface only.

To assign a flow identifier to the network:

1. Open the Network Topological View page for a packet virtual network.

   See "Opening the Network Topological View Page" for more information. See "Network Topological View Page" for information about fields in this page.

2. Click **Design Steps** in the toolbar, then select **Assign Flow Identifier**.

   The Flow Identifier Search page appears.

3. Search for and select a flow identifier.

   UIM assigns and references the flow identifier.

To reference a flow identifier to a selected flow interface:

1. Open the Network Topological View page for a packet virtual network.

   See "Opening the Network Topological View Page" for more information. See "Network Topological View Page" for information about fields in this page.

2. Right-click a flow interface and select **Assign Flow Identifier**.

The Flow Identifier Search page appears.

3. Search for and select a flow identifier.

   UIM references the flow identifier to the flow interface.

Related Topics

Unassigning Flow Identifiers in the Network Topological View

Assigning Flow Identifiers in the Connectivity Design Tab

Unassigning Flow Identifiers in the Network Topological View

You can unassign and dereference flow identifiers while you are designing packet virtual networks. You can unassign flow identifiers from the network as a whole or from individual flow interfaces.

If you unassign the flow interface from the network as a whole, UIM unassigns the flow identifier from the network configuration and removes references to it on all flow interfaces in the network.

If de-reference a flow identifier from an individual flow interface, UIM removes the flow identifier reference on that flow interface only.

To assign flow identifiers in the topological view:

1. Open the Network Topological View page for a packet virtual network.

   See "Opening the Network Topological View Page" for more information. See "Network Topological View Page" for information about fields in this page.

2. (Optional) Select one or more flow interfaces.

3. Click **Design Steps** in the toolbar, then select **Unassign Flow Identifier**.

   The Flow Identifier Search page appears.

4. Search for and select a flow identifier.

   UIM unassigns and de-references the flow identifier based on your selections in the network.

Related Topics

Assigning Flow Identifiers in the Network Topological View

Assigning Flow Identifiers in the Connectivity Design Tab

Working with Child Networks

Nodes in a network diagram can represent child networks that are part of a larger parent network structure. Representing child networks as single nodes makes it possible to keep the parent network diagram relatively simple.

You can drill down to see details about a child network, and you can also create edges between nodes in a child network and nodes in other locations.

See the following topics for more information about working with child networks:

- Viewing Nodes in Child Networks
- Creating Edges Involving Nodes in Child Networks

Viewing Nodes in Child Networks

When a node in a network diagram represents a child network, you can expand the node to display the nodes and edges in the child network. You can edit nodes within the child network.

You can have multiple child networks expanded at the same time in the network diagram.

To view nodes in a child network:

1. Open the Network Topological View page for a network.

   See "Opening the Network Topological View Page" for more information. See "Network Topological View Page" for information about fields in this page.
2. Click the asterisk to the upper-right of the cloud-shaped icon for a child network.

   The cloud icon is replaced by a rectangle containing the nodes in the child network.
3. When you are finished working with the child network, click the asterisk in the upper-right of the rectangle to collapse the node.

Related Topics

Creating Edges Involving Nodes in Child Networks

Creating Edges Involving Nodes in Child Networks

When a child network is expanded in a parent network diagram, you can create edges involving the child network's nodes. All of the following situations are supported:

- Edges between nodes within the child network
- Edges between a node in the child network and a node in the parent network
- Edges between nodes in two separate child networks

Edges to nodes in an expanded child network are connected to the appropriate individual nodes. When the child network is collapsed, however, these edges are connected to the network node. If there are multiple edges to different nodes in a child network from the same source, only a single edge is displayed.

You use the same procedure to create edges in child networks that you do in parent networks. See "Adding Edges to a Network" for more information.

Related Topics

Adding Edges to a Network

Viewing Nodes in Child Networks

Adding Specifications and Identifying Information to Nodes and Edges

You can assign or change the specification assigned to a node and also change the automatically generated node name and ID. If the Network specification has relationships with Network Node or Network Edge specifications, you must choose one of those specifications.

Some node or edge specifications include additional, customized fields into which you enter information. Specifications can also limit the kinds of resources you can associate with nodes.

To add specifications and identifying information to a node or edge:

1. Open the Network Topological View page for a network.

   See "Opening the Network Topological View Page" for more information. See "Network Topological View Page" for information about fields in this page.
2. Right-click a node in the network and select **Edit Node**.

   The Network Node page or the Network Edge page appears.
3. From the **Specification** list, select a specification for the node or edge.
4. Enter additional required or optional information.
5. Click **Save and Close**.

   The network diagram refreshes. If you changed the name of the node or edge, the new name is shown.

Related Topics

Adding Nodes to a Network

Adding Edges to a Network

Designing a Network in the Network Topological View

Removing Nodes and Edges from a Network

You can remove nodes and edges that are no longer needed.

> **Note:**
>
> The removal process includes no confirmation step and is not reversible.

To remove nodes and edges from a network:

1. Open the Network Topological View page for a network.

   See "Opening the Network Topological View Page" for more information. See "Network Topological View Page" for information about fields in this page.
2. In the toolbar, click the **Select** button.
3. Click a node or edge.

   Press and hold the **Ctrl** key to select multiple elements.
4. In the toolbar, click the **Delete** button.

   The selected elements are removed.

Related Topics

Adding Nodes to a Network

Adding Edges to a Network

Designing a Network in the Network Topological View

Using the Map View

If UIM has been configured to support maps, you can view nodes and edges visually on a map. Nodes appear on the map based on the valid latitude and longitude of places, property locations, or network entity code associated with them. Edges appear as lines connecting nodes.

By default, nodes are represented by icons that represent various entity types. You can find the icons and the corresponding entities using the Map Legend option on the Toolbar. You can customize these icons by creating the specifications in Design Studio. See *UIM System Administrator's Guide* for more information.

> **Note:**
>
> For nodes and edges to appear on a map, they must be associated with a place, property location, or network entity code that is associated with an address that includes a latitude and longitude. See "Working with Places and Place Configurations" for more information about latitude and longitude.

The information in the Map View page is read only (you cannot make changes to the network composition from the Map View page). See *UIM System Administrator's Guide* for information about configuring map support.

See the following topics:

- Opening the Network Map View
- Getting Information about Nodes in the Map View
- Getting Information About Edges in the Map View
- Working with Map Profiles
- Map View Page

Opening the Network Map View

To open a Map View page for a network, you must have set up a map profile for the network. See "Working with Map Profiles" for more information.

To open the Map View page and view a network on a map:

1. Open the Summary page for a Network entity for which you want to view on a map.
2. Click the **Visualization** tab, and then click the **Map View** subtab.

   The Map View page appears, displaying the network on the map specified by the appropriate map profile. Nodes are represented by icons and edges by solid or dotted lines. See "Map View Page" for more information about the fields in this page.
3. Double-click on any location in the map to view the corresponding latitude and longitude coordinates.

Related Topics

Getting Information about Nodes in the Map View

Getting Information About Edges in the Map View

Working with Map Profiles

Getting Information about Nodes in the Map View

You can click any node in the Map View page to view information about the node. By default, you can see the node name, node ID, resource ID, resource name, place ID, and place name. The Map View page can be customized using the Map Builder tool.

You can also open the Summary pages of resources represented by and places, property locations, or network entity codes associated with nodes. For nodes that represent child networks, you can open a separate Map View page of that network, or you can click **Sub Networks** from the Toolbar that displays the child networks available in the parent network.

You can view all the nodes with same latitude and longitude coordinates under **Multiple Nodes**. You can also open the Summary pages of all the nodes in a Multiple Node.

When getting information about the nodes in a Map View page:

- Opening Summary Pages for Associated Resources and Places
- Viewing Multiple Nodes with Same Location
- Opening Map Views of Child Networks

Opening Summary Pages for Associated Resources and Places

You can open the Summary page for a resource represented by a node or a place associated with it.

To open a Summary page from a node:

1. Open the Map View page. See "Opening the Network Map View".
2. Right-click a node (other than a node that represents a network) in the map.
3. Select **Place Summary** or (if the node represents a resource) the command that corresponds to the resource type. For example, select **Logical Device Summary**.

   The Summary page for the place or resource appears.
4. Select **Zoom To Country**, **Zoom To City**, or **Zoom To Street** to zoom into the corresponding country, city, or street in which the node exists.
5. Select **Zoom Out** to go back to the world map view.

Related Topics

Opening Map Views of Child Networks

Getting Information about Nodes in the Map View

Map View Page

Opening Map Views of Child Networks

You can open a separate Map View page for child networks from the Map View page of the parent network.

To open a Map View page of a child network:

1. In the Map View page, right-click a node that represents a network and select **Network Map View**. See "Opening the Network Map View".

   A separate window opens with a map of the child network.

Related Topics

Opening Summary Pages for Associated Resources and Places

Getting Information about Nodes in the Map View

Map View Page

Viewing Information About Child Network Entities in the Map View

You can view the child network entities of a network in the Map View page.

To view the child network entities:

1. Open the Map View page. See "Opening the Network Map View".
2. Click **Sub Networks** from the toolbar that exists on the top-right corner.

   The entities associated with the child network appear in the map.
3. Click on an entity to view the information about it.
4. (Optional) Right-click on an entity and select an option from the context menu to view the corresponding information.

Viewing Multiple Nodes with Same Location

You can view multiple nodes that are in the same location, with same latitude and longitude coordinates, under a single Multiple Node from the Map View. You can also navigate to the corresponding summary pages of all the associated nodes under a Multiple Node.

To view multiple nodes with same location:

1. Open the Map View page. See "Opening the Network Map View".
2. Right-click on a Multiple Node in the map.
3. Select **Place Summary** or (if the node represents a resource) the command that corresponds to the resource type. For example, select **Logical Device Summary**.

   The Summary page for the place or resource appears.

   > **Note:**
   >
   > If the node is a Multiple Node, the corresponding resource option does not appear.

4. Select **Associated Nodes**.

   The Inventory Association List page appears, containing the list of all nodes with same location.
5. (Optional) Click a node in the list to see the detailed information about it.

   The Summary page of the node appears.
6. Select **Zoom To Country**, **Zoom To City**, or **Zoom To Street** to zoom into the corresponding country, city, or street in which the node exists.

7. Select **Zoom Out** to go back to the world map view.
8. Click **Close** to close the menu.

Getting Information About Edges in the Map View

You can click an edge in a map to get information about the edge. By default, you see the edge ID. You can also open a list of pipes represented by an edge. From this list, you can go to the Summary pages of the pipes.

To get information about edges in the map view:

1. Open the Map View page. See "Opening the Network Map View".
2. (Optional) For Networks, right-click an edge and select **Associated Pipes**.

   The Associated Pipe List page appears, containing a list of all the pipes associated with the edge.

   > **Note:**
   >
   > For other entity Map View pages, right-click an edge and select **Connectivity Summary** or **Pipe Summary** that navigates you to the corresponding summary page.

3. (Optional) Click a pipe's link in the list to see detailed information about it.

   The Summary page for the pipe appears.

Related Topics

Opening the Network Map View

Getting Information about Nodes in the Map View

Working with Map Profiles

Map View Page

Working with Map Profiles

UIM uses a map profile to determine which map to display when you open the Map View page for a network. For example, for a national network, you may want to open a map of the entire country; for a local network, you may want to open a city map.

The map profile also determines the map center and zoom level, along with other parameters. Entering some of this information requires knowledge of how mapping has been enabled on your system. See *UIM System Administrator's Guide* for information about setting up mapping.

You must save a map profile for a network before you can view a map of that network. See "Setting Up Map Profiles" for more information.

Related Topics

Opening the Network Map View

Getting Information about Nodes in the Map View

Getting Information About Edges in the Map View

Map View Page

Setting Up Map Profiles

To set the map profile:

1. Open the Summary page for a Network entity for which you want to define a map profile.
2. Open the **Map Profile** tab under the **Visualization** tab.

   The Map Profile page appears.
3. Enter or change values as needed.
4. Click **Save**.

   The new values are stored.

Related Topics

Map Profile Page

Working with Map Profiles

Map Profile Page

You use the Map Profile page to define characteristics of the Map View page, such as the map to display, the map center, the zoom level, and so forth.

Field	Description
Base Map	Enter the name of the map that is displayed for the network. See your system administrator for a list of available maps. The default is **ELOCATION_MAP**.
Application Datasource	Enter the UIM data source location. The default is **UIMDATA**.
Map Tile Server URL	Enter the URL used for an external mapping service, such as the Oracle Map Service. The Oracle Map Server URL appears by default. Leave this field blank if you are using an internal map rather than a map service.
Copyright	Enter the copyright text to appear on the map. The default is: **Copyright \u00a9 2007, 2021 Oracle Corp**
Zoom Level	Enter the zoom level of the map when it opens. Values range from 0 to 9 and correspond to the increments on the zoom slider in the Map View page.
Map Center Latitude	Enter the latitude on which the base map is centered. This value defaults to the center of all the nodes in the network.
Map Center Longitude	Enter the longitude on which the base map is centered. This value defaults to the center of all the nodes in the network.

Related Topics

Setting Up Map Profiles

Working with Map Profiles

Map View Page

Use the Map View page to view nodes and edges visually on a map. You cannot make changes from the Map View page, but you can use tools to control the map display.

Field	Description
Zoom	Move the slider in the upper-left corner up or down to increase or decrease the zoom area of the map.
Legend	Click to view the map legend. This button is in the lower-right corner of the map
Scale	Displays the scale in both kilometers and miles. This button is located in the lower-left corner.
Pan	Click any of the pan directional arrows to move the map in the direction of the arrow. These buttons are located in the upper-left corner.
Center Map	Right-click a node in the map and select to re-center the orientation of the map.
Show Edges **Hide Edges**	Right-click a node in the map and select to hide or displays edges.
Toolbar section	The Toolbar section enables you to view the map using the following options: • **Clear** option clears all markings that you added to the map using toolbar. • **Circle** option marks a circle with any required radius on the map and highlights all the nodes within the circle. • **Rectangle** option marks a rectangle on the map and highlights all the nodes within the rectangle. • **Redline** option enables you to draw any shape on the map to mark the corresponding area. • **Distance** option enables you to draw line(s) on the map and provides the actual distance of the line(s). You can draw connected lines that provides **Total Distance** of all the connected lines and **Sub Distance** of the latest line. • **Zoom** option enables you to select any area and zoom in to the map. • **Magnifier** option enables you to hover the mouse cursor over the map to enhance the view of an area. • **Overview Map** option enables you to view a small overview map, which initially appears zoomed out by a factor of three. The overview map appears in the lower-right corner of the map. • **Legend** option shows the list of icons and the corresponding entities. • **Print Map** option enables you to print the map. • **White Board** option enables you to enter any customized text on the map upon selecting an area or a location. The **Add Text** page provides multiple options to customize the text style.

Network - New Page

You use the Network - New page to create new networks.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Select a Network specification. You can represent your networks in UIM without creating Network specifications in Design Studio; however, using Network specifications allows you to capture custom information about a network. If you do not use a Network specification to define the new network, you must manually enter a value in the **Network ID** field.
Network ID	If the entity specification requires a manually entered ID, enter a unique ID for the entity. Most entity specifications are defined in Design Studio so that IDs are generated automatically. The **ID** field for these specifications contains the text AUTOGENERATE.
Name	Enter a name for the network.
Description	Enter a description of the network.
Inventory Status	Displays the stage in the life cycle of the network. This field is read only. See *UIM Concepts* for more information about inventory statuses.
Assignment Status	Displays the stage in the life cycle of a specific assignment of the network to another entity. This field is read only. See *UIM Concepts* for more information about assignment statuses.
Technology	Displays the technology used for the network. This field is read only.

Related Topics

Creating Entities

Searching for Entities

Network Topological View Page

Network - Information Page

You use the Network - Information page to edit the information that appears in the Summary page Information section. Some data elements, such as the ID, cannot be changed after the entity is created.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Displays the specification used to create the entity. This field is read only.
Network ID	Displays the unique ID generated for the entity. This field is read only.
Name	Edit the name for the network.
Description	Edit the description of the network.
Inventory Status	Displays the stage in the life cycle of the network. This field is read only. See *UIM Concepts* for more information about inventory statuses.
Assignment Status	Displays the stage in the life cycle of a specific assignment of the network to another entity. This field is read only. See *UIM Concepts* for more information about assignment statuses.
Technology	Displays the technology used for the network. This field is read only.

Related Topics

Creating Entities

Searching for Entities

Network Topological View Page

Network Summary Page

You use the Network Summary page to define the content for a network. The page is arranged into tabs, each of which is used for a different purpose:

- General Information Tab
- Configurations Tab
- Associated Resources Tab
- Consumers Tab
- Groups and Infrastructure Tab
- Visualization Tab

See the following topics for more information about summary pages:

- Related Pages Menu
- Actions Menu

See "Entity Summary Page" for information about Summary page fields that are common among all entities.

Related Topics

Designing a Network in the Network Topological View

Using the Map View

About Network Configurations

Network - New Page

General Information Tab

You use the **General Information** tab to view basic information about the Network entity, most of which was defined when you created the entity. Click **Edit** to change this information. Some data elements cannot be changed after the entity is created. See "Creating Entities " and "Network - New Page" for more information.

Configurations Tab

You use the **Configurations** tab to view any network configurations created for the entity. You use network configurations to assign resources to networks.

This section is available only when the specification on which the network is based includes a reference to a Network Configuration specification.

The fields that appear in the Configurations section are common among multiple entities. See "Entity Summary Page" for more information. See "Adding the First Version of a Configuration to an Entity" and "Adding Additional Configuration Versions" for information about creating configurations.

Associated Resources Tab

You use the **Associated Resources** tab to view information about the associated logical devices, associated pipes and connectivities, IP resources, and network nodes of the logical device.

Subtab	Description
Associated Logical Devices	(Infrastructure networks only) Displays a list of logical devices represented by nodes in the network. See "Representing Resources with Nodes" for more information.
Associated Pipes/ Connectivities	Displays a list of the pipes and connectivities represented by edges in the network.
IP Resources	Lists IP subnets assigned to the network. Click **Assign** to assign a new IP subnet.
Network Nodes	Displays a list of the nodes in the network. See "Adding Nodes to a Network" for more information.

Consumers Tab

You use the **Consumers** tab to view information about assignments, references, and business interactions of the network.

Section	Description
Assignments	Lists the configurations to which the network has been assigned. For each assignment, you can see the entity to which the assignment has been made, that entity's type, and the start and end dates.

Section	Description
References	Lists the configurations to which the network has been referenced. For each assignment, you can see the entity to which the assignment has been made, that entity's type, and the start and end dates.
Business Interactions	Displays any business interactions with which the network is associated. See "Working with Business Interactions" for more information.

Groups and Infrastructure Tab

You use the **Groups and Infrastructure** tab to view information about the places and roles associated with the network.

Section	Description
Places	Displays any places that are associated with the network. The association can imply that some part of the network is located at the place or that there is some kind of relationship between the entities. The fields that appear in the Places section are common among multiple entities. See "Entity Summary Page" for more information. See "Associating Places to Entities" for information about creating new place associations.
Roles	Displays any roles that are associated with the network. You can associate roles with entities to define the functions they perform in your inventory. An entity can have multiple roles simultaneously, and its roles can change over time. See "Assigning a Role in an Entity Summary Page" for more information.

Visualization Tab

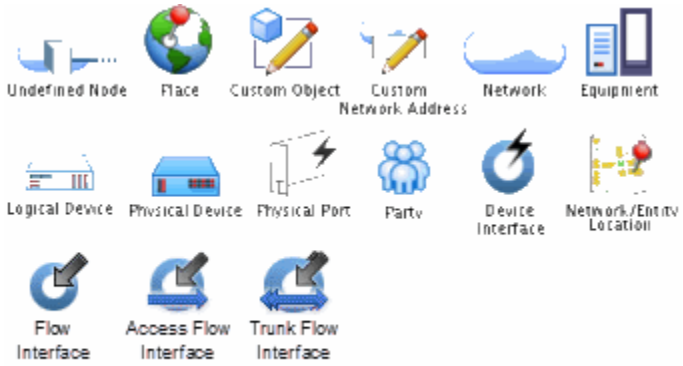
You use the **Visualization** tab to add network nodes and network edges to a network, to select a map profile, and to view a network geographically on a map.

Subtab	Description
Network Topological View	This tab contains the Network Topological View page, which enables you to configure network entities visually. See "Network Topological View Page" for more information.
Map Profile	This tab contains the Map Profile page, which enables you to define characteristics of the Map View page. See "Map Profile Page" for more information.
Map View	This tab contains the Map View page, which enables you to view a network geographically on a map. See "Map View Page" for more information.

Network Topological View Page

You use the Network Topological View page to configure network entities visually. You add network nodes and network edges and select entities that they represent.

The following icons represent entities in the Network Topological View page:



The following controls appear in the Network Topological View page:

Control	Description
Design Steps	(Packet Virtual Networks only) Click to open a menu with the following commands: • **Validate Design** • **Save New Version** • **Complete Design** See "Validating and Completing a Service or Packet Virtual Network in the Network Topological View" for information about using these commands.
Select	Click this button, then select an entity in the canvas area. After you select an entity, you can perform actions on the entity. For example, you can associate resources to nodes in a network diagram. When you select an entity, information about it is displayed in the Information section.
Zoom	Click this button, then drag out an area in the diagram to zoom in on that area.
Pan	Click to move the diagram within the canvas to display another area. When you click the **Pan** button, the cursor changes to a hand and enables you to drag the diagram to display a different area. Panning is useful when the diagram is enlarged so that only part of the diagram is viewable.
Show All	Click to refresh the diagram to the zoom level required to show all elements in the diagram.
Zoom In	Click to enlarge the diagram on the current center point of the diagram.
Zoom Out	Click to reduce the size of the diagram on the current center point of the diagram.
New Node	Click to add a new node to a network. See "Adding Nodes to a Network" for more information.
Flow Interface	(Packet virtual networks only) Click to add a new network node that represents a flow interface.

Control	Description
Create Edge	Select two nodes then click **Create Edge** to add a new edge to the network. See "Adding Edges to a Network" for more information.
Associate Pipe	Click to search for a pipe to be represented by new nodes and an edge.
Associate Connectivity	Click to search for a connectivity to be represented by new nodes and an edge.
Create Flow Interface Interconnect	Click to add an interconnect between two selected nodes that represent flow interfaces. This action creates a network edge as well as the actual interconnect.
Perform Label Layout	Click to rearrange overlapping labels for improved legibility.
Delete	Click to remove elements from the diagram. When an element represents an actual inventory resource rather than an item that exists only in the context of the diagram or visualization, deleting it does not delete the entity from inventory.
Save	Click to save the current positions in the diagram. If you do not save the current positions, changes you make to the layout or position of elements are lost when you navigate away from the page. **Note:** Saving positions affects only the appearance and arrangement of the diagrams, not the content of the related entities.
Resize Canvas	Click to expand the canvas to its maximum size.
Filter Nodes and Edges	Click to filter nodes and edges using the following **Filter Criteria**: • Role Name • Technology • Rate Code
Search	Click to search for entities within the topology diagram by entering the following search criteria: • Entity Type • Name
Spring Embedder Layout	Click to arrange elements with no edge crossings or very few edge crossings. For example, this layout is useful for depicting small- and medium-sized networks.
Random Layout	Click to arrange the elements randomly, with random-length edges.
Uniform Length Edges Layout	Click to arrange elements in the topology to create edges of approximately equal length while minimizing edge crossings. The initial position of nodes affects the layout. This layout is useful, for example, for visualizing WANs. Networks with a star topology are automatically displayed in this layout.
Tree Layout	Click to arrange elements orthogonally in levels depending on their relationships.
Hierarchical Layout	Click to arrange elements without overlaps into horizontal or vertical levels, such that the majority of links are short and flow uniformly in the same direction.

Control	Description
Circular Layout	Click to arrange elements in a circle. Networks with a ring topology are automatically displayed in this layout.
Topological Mesh Layout	Click to arrange elements such that mesh relationships are visible. This layout is valid only in networks whose topologies include a loops, such as a mesh topology. You see an error message if you try to apply it to an invalid network. Networks with a mesh topology are automatically displayed in this layout.
Grid Layout	Click to arrange elements in the form of a grid.
Preferences	Click to add the following preferences to the topological diagram: • Canvas Size • Hide Edge Labels • Hide Node Labels
Print	Click to print the topology diagram.
Information area	(Infrastructure networks only) Displays information about the element selected in the Network Topological View page Canvas area, including: • Information about the entire network represented in the Canvas area • The name, ID, and object type • Information about the parent network, when the selected element in the Network Topological View page Canvas area represents a child network
Details area	(Packet virtual networks and service networks only) Displays information about the flow interface represented by the selected node. Information includes: • Flow Interface ID • Flow Interface Bit Rate • Termination Type • Device Interface • Logical Device • Network Entity Location • Network Location Address

Related Topics

Opening the Network Topological View Page

Validating and Completing a Service or Packet Virtual Network in the Network Topological View

When a packet or service network design is in place, you can validate, save, and complete the design. After the design is complete, it can no longer be modified.

See the following topics:

- Validating the Design

- Completing the Design
- Creating a New Version

Validating the Design

You can validate a service or packet virtual network design to ensure that it is complete and correct. During the validation, UIM checks:

- That all service locations associated with the network (parent) service are present in the service network.
- That there is a connectivity between each service location and associated network device.
- That all connectivities have completed design versions.

To validate the service network or packet virtual network design:

1. Open the Network Topological View page of the service network. See "Opening the Network Topological View Page".
2. Click **Design Steps** in the toolbar, then select **Validate Design**.

   UIM validates the design and displays either a confirmation message or a list of errors to correct.

Completing the Design

When you complete a network design, the network configuration version is set to Completed. Changes to this version are no longer allowed.

To complete a service network or packet virtual network design:

1. Open the Network Topological View page of the service network. See "Opening the Network Topological View Page".
2. Click **Design Steps** in the toolbar, then select **Complete Design**.

   UIM validates the design. If the validation succeeds, UIM completes the current design.

Creating a New Version

You can create a new design version only after the previous version has been completed.

To create a service network or packet virtual network design version:

1. Open the Network Topological View page of the service network. See "Opening the Network Topological View Page".
2. Click **Design Steps** in the toolbar, then select **Create New Version**.

   UIM creates a new version of the design.

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Working with Flow Identifiers

A flow identifier is a type of network address that is associated with a collection of flow interfaces that trace the path of a multipoint or point-to-point connectivity-based service through the device interfaces and connectivities. For example, flow identifiers can represent VLAN IDs for Ethernet; VPIs and VCIs for ATM; DLCIs for Frame Relay; and other virtual channel parameters such as VPLS IDs for MPLS.

Flow identifiers are defined in their specifications as provider-managed or unmanaged:

- Provider-managed flow identifiers are created by service providers and used to manage the flow of traffic in their own network.
- Unmanaged flow identifiers are provided by a third party (such as another service provider) or by the customer to tag the flow of traffic in the service provider network.

You can create flow identifiers one at a time or in ranges based on the identifier value. For example you could create a range of VLAN IDs with identifiers from 1 to 4095.

You can assign Flow Identifier entities to network configurations and flow interface configurations. You can also include them in reservations and apply conditions to them.

See the following topics for more information about working with flow identifiers:

- Flow Identifier - New Page
- Flow Identifier Range - New Page
- Flow Identifier - Summary Page
- Flow Identifier - Information Page

Flow Identifier - New Page

You use the Flow Identifier - New page to create new flow identifiers.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Select a Flow Identifier specification on which to base the new entity.

Field	Description
Domain	Select the network address domain to which the flow identifier belongs. The name of the flow identifier must be unique within the domain. A network address domain is required for flow identifiers that are defined as provider-managed. A domain is optional for flow identifiers that are defined as unmanaged. The network address domain cannot be changed after a flow identifier has been saved.
Resource Pool	Select a resource pool to which the flow identifier will belong. Resource pools are used when searching for flow identifiers to assign to services. A flow identifier can belong to only one resource pool.
Identifier Prefix	Enter an alphanumeric prefix for the flow identifier. This prefix is combined with the numeric identifier value to create the identifier.
Identifier Value	Enter a numeric value to be used as a tag to identify a service as data flows through the network. For example, a VLAN ID identifies traffic for a VLAN service in an Ethernet network. The identifier value must be unique across all flow identifiers associated with the same network address domain. If the flow identifier is not associate with a network address domain, the identifier value must be unique across all flow identifiers without a domain. Flow Identifier specifications can define minimum and maximum identifier values. An identifier value is required for all flow identifiers, except those define as untagged.
Name	By default, displays a name that is a combination of the identifier prefix and the identifier value. You can change the default name. The name must be unique within the selected network address domain.
Description	Enter a description of the flow identifier.
Untagged Flow Identifier	Indicates whether the flow identifier can allow untagged frames to pass through. • If the **Untagged Flow Identifier** check box is available, you can choose to select it to create an untagged flow identifier or leave it unselected to create a tagged flow identifier. • If the **Untagged Flow Identifier** check box is not available, the specification allows you create only tagged flow identifiers. All untagged flow identifiers are named **Untagged** and have no identifier value.
Provider Managed	Indicates whether the flow identifier is provider-managed or unmanaged. Provider-managed flow identifiers can belong to only one network address domain.
Stacking Level	(Read only) Identifies the encapsulation order relative to other flow identifiers associated with a flow interface. For example, a C-Tag (Level 0) is encapsulated inside an S-Tag (Level 1) or a VCI (Level 0) is encapsulated inside a VPI (Level 1). Stacking levels are oriented from the customer point of view, looking into the service provider network. The stacking level is read only and determined by the specification on which the flow identifier is based.

Related Topics

Creating Entities

Flow Identifier - Summary Page

Flow Identifier Range - New Page

You use the Flow Identifier Range - New page to create ranges of new flow identifiers.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Select a Flow Identifier specification on which to base the new entity.
Domain	Select the network address domain to which the flow identifier belongs. The name of the flow identifier must be unique within the domain. A network address domain is required for flow identifiers that are defined as provider-managed. A domain is optional for flow identifiers that are defined as unmanaged. The network address domain cannot be changed after a flow identifier has been saved.
Description	Enter a description of the flow identifier.
Resource Pool	Select a resource pool to which the flow identifier will belong. Resource pools are used when searching for flow identifiers to assign to services. A flow identifier can belong to only one resource pool.
Identifier Prefix	Enter an alphanumeric prefix for the flow identifier. This prefix is combined with the numeric identifier value to create the identifier.
Lower Identifier Value	Enter the lower numeric value of the range. Identifier values are used as tags to identify services as data flows through the network. For example, a VLAN ID identifies traffic for a VLAN service in an Ethernet network. Identifier values must be unique across all flow identifiers associated with the same network address domain. If a flow identifier is not associated with a network address domain, the identifier value must be unique across all flow identifiers without a domain. Flow Identifier specifications can define minimum and maximum identifier values. An identifier value is required for all flow identifiers, except those define as untagged.
Upper Identifier Value	Enter the upper numeric value of the range.
Excluded Identifier Values	Enter identifier values from within the specified range that should not be created. Specify ranges by using hyphens. Separate multiple discontinuous values with commas.
Include Untagged Flow Identifier	If the specification enables the creation of untagged flow identifiers, select to create an untagged flow identifier in addition to the range you are creating. The untagged flow identifier is named **Untagged** and has no identifier value.
Provider Managed	Indicates whether the flow identifier is managed by the service provider rather than by you. Provider-managed flow identifiers can belong to only one network address domain.

Field	Description
Stacking Level	(Read only) Identifies the encapsulation order relative to other flow identifiers associated with a flow interface. For example, a C-Tag (Level 0) is encapsulated inside an S-Tag (Level 1) or a VCI (Level 0) is encapsulated inside a VPI (Level 1). The stacking levels are from the customer point of view looking into the service provider network. The stacking level is read only and determined by the specification on which the flow identifier is based.

Related Topics

Creating Entities

Flow Identifier - Summary Page

Flow Identifier - Summary Page

You use the Flow Identifier - Summary page to view information about a flow identifier. The Summary page contains an Information section and an Assignments section.

See the following topics for more information about summary pages:

- Related Pages Menu
- Actions Menu

You can use the **Edit** command on the Information section to open the Information page, where you can edit the flow identifier name and description.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

The fields in the following table are common to most specifications of this type.

Field	Description
ID	Displays the flow identifier ID. The ID is a combination of the network address domain, a delimiter (# by default), and the identifier value. For example, if the network address domain is North and the identifier value is 256, the default ID is North#256. If the flow identifier has no domain, the ID is the identifier value alone. The ID is unique among all flow identifiers in the database.
Specification	Displays the specification used to create the flow identifier.
Domain	Displays the network address domain to which the flow identifier belongs.
Description	Displays a description of the flow identifier.
Resource Pool	Displays the resource pool to which the flow identifier belongs.

Field	Description
Name	By default, displays a name that is a combination of the identifier prefix and the identifier value. You can change the default value. The name must be unique within the selected network address domain.
Inventory Status	Displays the stage in the life cycle of the flow identifier. This field is read only. See *UIM Concepts* for more information about inventory statuses.
Assignment Status	Displays the stage in the life cycle of a specific assignment of the flow identifier to another entity. This field is read only. See *UIM Concepts* for more information about assignment statuses.
Provider Managed	Indicates whether the flow identifier is managed by the service provider rather than by you. Provider-managed flow identifiers can belong to only one network address domain.
Stacking Level	Displays the encapsulation order relative to other flow identifiers associated with a flow interface. For example, a C-Tag (Level 0) is encapsulated inside an S-Tag (Level 1) or a VCI (Level 0) is encapsulated inside a VPI (Level 1). The stacking level is read only and determined by the specification on which the flow identifier is based.
Assignments	List the configurations and connectivity design versions to which the flow identifier has been assigned. For each assignment, you can see the entity to which the assignment has been made, that entity's type, and the start and end dates.

Related Topics

Searching for Entities

Flow Identifier - Information Page

You use the Flow Identifier - Information page to edit the information that appears in the Summary page Information section. Only the name and description are editable by default.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Displays the specification used to define the flow identifier. This field is read only.
Domain	Displays the network address domain to which the flow identifier belongs.
Resource Pool	Displays the resource pool to which the flow identifier belongs.
ID	Displays the ID generated or entered when the entity was created. This field is read only.

Field	Description
Name	Edit the name for the flow identifier. By default, displays a name that is a combination of the identifier prefix and the identifier value. You can change the default value. The name must be unique within the selected network address domain.
Description	Edit the description of the flow identifier.
Provider Managed	Indicates whether the flow identifier is managed by the service provider rather than by you. Provider-managed flow identifiers can belong to only one network address domain.
Stacking Level	Displays the encapsulation order relative to other flow identifiers associated with a flow interface. For example, a C-Tag (Level 0) is encapsulated inside an S-Tag (Level 1) or a VCI (Level 0) is encapsulated inside a VPI (Level 1). The stacking level is read only and determined by the specification on which the flow identifier is based.

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Working with IP Addresses

In Oracle Communications Unified Inventory Management (UIM), you can manage IPv4 and IPv6 address resources. UIM IP address management provides the ability to allocate, classify, and track IPv4 and IPv6 addresses.

An IP network is the foundation of IP infrastructure. All IP address management takes place within an IP network, which you can partition into subnets that can contain multiple IP address ranges.

See the following topics for more information about working with IP addresses:

- Working with IP Networks
- Working with IP Subnets
- Working with IP Addresses

Working with IP Networks

In UIM, IP network entities represent blocks of IP address spaces in your inventory. All address space within an IP network is occupied by one or more contiguous IP subnets. When you create an IP network, UIM automatically creates a default IP subnet that occupies the entire address space. You can partition the default IP subnet into multiple smaller subnets.

See the following topics for more information about working with IP networks:

- Creating IP Networks
- Managing IP Networks
- Working with IP Subnets
- Working with IP Addresses
- IP Network Page

Creating IP Networks

When you create an IP network, UIM automatically creates a default IP subnet that occupies the entire address space.

The prefix length represents the network portion (also called subnet mask) of the IP address. The larger the prefix length, the fewer IP addresses are available on the network.

The IP address you enter must be in standard IPv4 or IPv6 form, such as those shown in the following examples:

For IPv4:

- 10.20.0.0
- 26.5.100.0
- 8.200.54.10

For IPv6:

- 2001:0020::
- 226a:ffff:0800:50::
- fd04:0047:0002:9999:0000:0000:0000:0000

  (Or just fd04:47:2:9999:: because leading zeros and any trailing nodes that are only zeros can be omitted.)

When creating IP Networks, see "IP Network - New Page" for additional information about each field.

To create an IPv4 or IPv6 network:

1. In the **Resources** section, click **IP Address - IPv4** or **IP Address - IPv6**.

   The IP Network Search page appears.
2. In the Search Results toolbar, click **Create**.

   The IP Network - New page appears.
3. (Optional) In the **Name** field, enter a name for the IP network.
4. (IPv4 only) In the **IPv4 Address** field, enter the starting IP address for the IP network.
5. (IPv6 only) In the **IPv6 Address** field, enter the starting IP address for the IP network.
6. (IPv6 only) From the **IPv6 Address Type** list, select a type of address, either **Global Unicast** or **Unique Local Unicast**.

   The IPv6 address type you select must correspond with the type of network address domain you select.
7. (Optional) Associate a party to the network by doing one of the following:
   - In the **Owned By** field, enter the first few characters of the party, then select one from the search results displayed.
   - Click the **Search** icon next to the **Owned By** field to search for a party.

   See "Working with Parties" for more information.
8. (Optional) In the **Description** field, enter a description for the IP network.
9. Associate a network address domain to the network by doing one of the following:
   - In the **IP Address Domain** field, enter the first few characters of the network address domain, then select one from the search results displayed.
   - Click the **Search** icon next to the **IP Address Domain** field to search for a network address domain.

   For IPv6 only, the type of network address domain you select must correspond with the IPv6 address type you select.

   See "Working with Resource Management Entities " for more information.

   For IPv4 only, even if the IP network is in public domain, the IP ranges can be assigned to private domains. This is possible by enabling the property **uim.ip.network.allowPublicIPRangeInPrivateDomain** in **system-config.properties** file. For more information on using this property, see *UIM System Administrator's Guide*.
10. In the **Prefix Length** field, specify the prefix length for the IP address you entered in the **IPv4 Address** or **IPv6 Address** field.

    For IPv4 addresses, the prefix length can be 3 through 32, and for IPv6 addresses, the prefix length can be 3 through 128.
11. Click **Save** or **Save And Close**.

Depending on what you click, the IP Network Summary page appears, or the IP Network Search page appears.

Related Topics

IP Network - New Page

IP Network Page

Managing IP Networks

Managing IP Networks

You can manage IP networks by performing any of the following tasks:

- Viewing or Updating IP Networks
- Deleting IP Networks
- Activating or Deactivating IP Networks

Viewing or Updating IP Networks

You can view or update an entity's basic information from the Information section at the top of its Summary page. The Information section displays much of the information entered during entity creation. Some data elements cannot be changed after the entity is created.

To view or edit an IPv4 or IPv6 network:

1. In the Resources section, click **IP Address - IPv4** or **IP Address - IPv6**.

   The IP Network Search page appears.
2. In the Search section, search for an IP network.

   See "Searching for IP Address Entities" for more information.
3. In the Search Results section, click an IP network link.

   The IP Network Summary page appears, where you can view and update the IP network.
4. Click **Edit**. Alternatively, search for an entity, select it in the search results, and click **Edit** in the Search Results toolbar.

   Several fields in the IP Network Information section become editable.
5. Make any changes and click **Save** or **Save And Close**.

   Depending on what you clicked, the IP Network Summary page appears, or the IP Network Search page appears.

Related Topics

- Deleting IP Networks
- Activating or Deactivating IP Networks

Deleting IP Networks

You can delete an IP network, but keep in mind that deleting an IP network also deletes any IP subnets and IP addresses that are part of the IP network.

To delete an IPv4 or IPv6 network:

1. In the Resources section, click **IP Address - IPv4** or **IP Address - IPv6**.

   The IP Network Search page appears.

2. In the Search section, search for an IP network.

   See "Searching for IP Address Entities" for more information.

3. In the Search Results section, select an IP network row.

4. In the Search Results toolbar, click **Delete**.

   The Delete Confirmation dialog box appears.

5. Click **Yes** to confirm the deletion.

   The IP network is deleted, and all IP subnets and IP addresses that are part of the IP network are deleted.

Related Topics

- Viewing or Updating IP Networks
- Activating or Deactivating IP Networks

Activating or Deactivating IP Networks

IP networks are lifecycle-managed entities for which you can change the inventory status. If you deactivate an IP network, all IP subnets and IP addresses within the IP network are also deactivated.

On the **Actions** menu:

- **Activate** is available only for IP networks with an Inventory Status of **Unavailable**. Selecting **Activate** changes the Inventory Status of the IP network from **Unavailable** to **Installed**.
- **Deactivate** is available only for IP networks with an Inventory Status of **Installed**. Selecting **Deactivate** changes the Inventory Status of the IP network, and all IP subnets and IP addresses within the IP network, from **Installed** to **Unavailable**.

To activate or deactivate an IPv4 or IPv6 network:

1. In the Resources section, click **IP Address - IPv4** or **IP Address - IPv6**.

   The IP Network Search page appears.

2. In the Search section, search for an IP network.

   See "Searching for IP Address Entities" for more information.

3. In the Search Results section, click an IP network link.

   The IP Network Summary page appears.

4. From the **Actions** menu, select **Activate** or **Deactivate**.

Related Topics

- Managing Entity Life Cycles
- Viewing or Updating IP Networks
- Deleting IP Networks

IP Network - New Page

You use the IP Network - New page to create new IPv4 or IPv6 networks.

Field	Description
Name	Enter a name for the IP network. UIM automatically creates an IP subnet, but does not propagate the name entered for the IP network. After you create the IP network, you can edit the also-created IP subnet to provide a name for the subnet.
IP Address Domain	Select an IP address domain. The list of IP address domains from which to choose are the Network Address Domain entities that you have defined prior to creating the IP network. For IPv6 only, the type of network address domain you select must correspond with the IPv6 address type you select.
IPv4 or **IPv6 Address**	Enter an IP address in standard form for the IP network. The address you enter must correspond with the specified prefix length.
IPv6 Address Type	Select an IPv6 address type for the IPv6 network. The choices are **Global Unicast** or **Unique Local Unicast**. The IPv6 address type you select must correspond with the type of network address domain you select.
Prefix Length	Enter a prefix length. The prefix length represents the network portion (also called subnet mask) of the IP address. The prefix length is the number of bits set in the subnet mask. For an IPv4 example, if the subnet mask is 255.255.255.0, there are 24 1's in the binary version of the subnet mask, so the prefix length is 24.
Owned By	Enter a party, or click to search for a party, to assign as the owner of the IP network. The list of parties from which to choose are the Party entities that you have defined prior to creating the IP network.
Inventory Status	Displays the stage in the lifecycle of the IP Network entity. This field is read only. See *UIM Concepts* for more information about inventory statuses.
Description	Enter a description of the IP network.

Related Topics

Creating IP Networks

IP Network Page

IP Network - Information Page

You use the IP Network - Information page to edit the information that appears in the IPv4 or IPv6 Summary page Information section. Some data elements cannot be changed after the entity is created.

Field	Description
Name	Edit the name of the IP network.

Field	Description
IP Address Domain	Displays the IP address domain. This field is read only. IP address domains are Network Address Domain entities.
IPv4 or **IPv6 Address**	Displays the IP address for the IP network. This field is read only.
IPv6 Address Type	Displays the IPv6 address type that was selected for the IPv6 network. This field is read only.
Prefix Length	Displays the prefix length of the IP network. This field is read only.
Owned By	Enter a party, or click to search for a party, to assign as the owner of the IP network. The list of parties from which to choose are the Party entities that you have defined prior to creating the IP network.
Inventory Status	Displays the stage in the lifecycle of the IP Network entity. This field is read only. See *UIM Concepts* for more information about inventory statuses.
Description	Edit the description of the IP network.

Related Topics

Managing IP Networks

IP Network Page

IP Network Page

You use the IP Network page to define the content for IPv4 or IPv6 Network entities.

See the following topic for more information about summary pages:

- Related Pages Menu
- Actions Menu

Section	Description
IP Network Information	Displays basic information about the entity, most of which was defined when you created the IP network. Click **Edit** to change this information. Some data elements cannot be changed after the IP network is created. See "Creating IP Networks" for more information.
IP Network Hierarchy	Displays the entities included in the IP network hierarchy, which you can expand or collapse. When an IP network is created, a default subnet is automatically created, so the network always has a minimum of one child (the subnet). If the subnet is partitioned, the subnet will have two or more children (any partitioned subnets). The hierarchy displays the **IP Address**, **Inventory Status**, and **Assignment Status** fields for each **IP Address** listed. Depending on the level of the hierarchy, the **IP Address** may represent the IP network, the IP subnet, any partitioned IP subnets, or any IP addresses.

Related Topics

Working with IP Networks

Working with IP Subnets

An IP subnet is a range of IP addresses within an IP network.

When you create an IP network, UIM automatically creates a default IP subnet that occupies the entire address space. You can partition the default IP subnet into multiple smaller subnets. The default IP subnet has the same prefix length as the IP network.

See the following topics for more information about working with IP subnets:

- Managing IP Subnets
- Partitioning IP Subnets
- Aggregating IP Subnets
- Working with IP Addresses
- IP Subnet Page
- Working with IP Networks

Managing IP Subnets

UIM automatically creates an IP subnet when you create an IP network. It is not possible to create an IP subnet directly. See "Creating IP Networks" for more information.

UIM automatically deletes all IP subnets that are part of an IP network when you delete an IP network. It is not possible to delete an IP subnet directly. See "Deleting IP Networks" for more information.

You can assign or reference an IPv4 or IPv6 subnet resource to a service configuration item in the same manner you assign or reference other resources.

You can manage IP subnets by performing any of the following tasks:

- Viewing or Updating IP Subnets
- Activating or Deactivating IP Subnets
- Reserving IP Subnets
- Unreserving IP Subnets
- Adding or Deleting Conditions to/from IP Subnets

Viewing or Updating IP Subnets

You can view or update an entity's basic information from the Information section at the top of its Summary page. The Information section displays much of the information entered during entity creation. Some data elements cannot be changed after the entity is created.

To view or edit an IPv4 or IPv6 subnet:

1. In the Resources section, click **IP Address - IPv4** or **IP Address - IPv6**.

   The IP Network Search page appears.
2. Click the **IPv4 Subnet** or **IPv6 Subnet** tab.

   The IP Subnet Search page appears.
3. In the Search section, search for an IP subnet.

See "Searching for IP Address Entities" for more information.

4. In the Search Results section, click an IP subnet link.

   The IP Subnet Summary page appears, where you can view the IP subnet.

5. Click **Edit**. Alternatively, search for an entity, select it in the search results, and click **Edit** in the Search Results toolbar.

   Several fields in the IP Subnet Information section become editable.

6. Make any changes and click **Save** or **Save And Close**.

   Depending on what you clicked, the IP Subnet Summary page appears, or the IP Subnet Search page appears.

Related Topics

- Activating or Deactivating IP Subnets
- Reserving IP Subnets
- Unreserving IP Subnets
- Adding or Deleting Conditions to/from IP Subnets

Activating or Deactivating IP Subnets

IP subnets are lifecycle-managed entities for which you can change the inventory status. If you deactivate an IP subnet, all IP addresses within the IP subnet are also deactivated.

To activate or deactivate an IPv4 or IPv6 subnet:

1. In the Resources section, click **IP Address - IPv4** or **IP Address - IPv6**.

   The IP Network Search page appears.

2. Click the **IPv4 Subnet** or **IPv6 Subnet** tab.

   The IP Subnet Search page appears.

3. In the Search section, search for an IP subnet.

   See "Searching for IP Address Entities" for more information.

4. In the Search Results section, click an IP subnet link.

   The IP Subnet Summary page appears.

5. From the **Actions** menu, select **Activate** or **Deactivate**.

   On the **Actions** menu, **Activate** is available only for IP subnets with an Inventory Status of **Unavailable**. Selecting **Activate** changes the Inventory Status of the IP subnet from **Unavailable** to **Installed**.

   On the **Actions** menu, **Deactivate** is available only for IP subnets with an Inventory Status of **Installed**. Selecting **Deactivate** changes the Inventory Status of the IP subnet, and all IP addresses within the IP subnet, from **Installed** to **Unavailable**.

Related Topics

- Managing Entity Life Cycles
- Viewing or Updating IP Subnets
- Reserving IP Subnets
- Unreserving IP Subnets

- Adding or Deleting Conditions to/from IP Subnets

Reserving IP Subnets

You can reserve an IP subnet resource in the same manner you reserve other resources. See "Working with Resource Reservations" for more information.

In addition, you can reserve an IP subnet resource from the Reservations section on its Summary page.

To reserve an IPv4 or IPv6 subnet:

1. In the Resources section, click **IP Address - IPv4** or **IP Address - IPv6**.

   The IP Network Search page appears.
2. Click the **IPv4 Subnet** or **IPv6 Subnet** tab.

   The IP Subnet Search page appears.
3. In the Search section, search for an IP subnet.

   See "Searching for IP Address Entities" for more information.
4. In the Search Results section, click an IP subnet link.

   The IP Subnet Summary page appears.
5. Click the **Consumers** tab, located below the IP Subnet Information section.

   The **Consumers** tab appears, which contains the Assignments, Reservations, and Conditions sections.
6. In the Reservations section, select the IP subnet you want to reserve. If a reservation is already shown, you cannot reserve the resource unless you delete the existing reservation. See "Removing Resources from Reservations".
7. Click **Create**.

   The Reservation - New page appears. See "Reservation - New Page" for more information about the fields in this page.
8. In the **Reserved for Type** list, select the type of entity or process for which the reservation is made.

   The options in the list vary depending on how UIM is configured.
9. In the **Reserved For** field, enter text that identifies who is making the reservation.

   This value must be specified during reservation redemption. See "Redeeming Reservations".
10. In the **Reservation Type** list, select **Shortterm** or **Longterm**.
11. In the **Start Date** field, enter the date on which the reservation becomes effective.
12. (Optional) In the **Expiry Date** field, enter the date on which the reservation expires.

    Define a date here to override the **Reservation Type** setting.
13. (Optional) In the **Reason** field, enter a reason for the reservation.
14. Click **Save and Close**.

    The list of reservations reappears, now including the reservation you just created.

Related Topics

- Unreserving IP Subnets

- Viewing or Updating IP Subnets
- Activating or Deactivating IP Subnets
- Adding or Deleting Conditions to/from IP Subnets

Unreserving IP Subnets

You can unreserve an IP subnet resource in the same manner you unreserve other resources. See "Working with Resource Reservations" for more information.

In addition, you can unreserve an IP subnet resource from the Reservations section on its Summary page.

To unreserve an IPv4 or IPv6 subnet:

1. In the Resources section, click **IP Address - IPv4** or **IP Address - IPv6**.

   The IP Network Search page appears.
2. Click the **IPv4 Subnet** or **IPv6 Subnet** tab.

   The IP Subnet Search page appears.
3. In the Search section, search for an IP subnet.

   See "Searching for IP Address Entities" for more information.
4. In the Search Results section, click an IP subnet link.

   The IP Subnet Summary page appears.
5. Click the **Consumers** tab, located below the IP Subnet Information section.

   The **Consumers** tab appears, which contains the Assignments, Reservations, and Conditions sections.
6. In the Reservations section, select the IP subnet you want to unreserve and click **Delete**.

   The IP subnet resource is removed from the reservation.

Related Topics

- Reserving IP Subnets
- Viewing or Updating IP Subnets
- Activating or Deactivating IP Subnets
- Adding or Deleting Conditions to/from IP Subnets

Adding or Deleting Conditions to/from IP Subnets

You can add conditions to an IP subnet resource in the same manner you add conditions to other resources. See "Working with Conditions" for more information.

You delete conditions differently from other resources, however.

To delete conditions from an IPv4 or IPv6 subnet:

1. In the Resources section, click **IP Address - IPv4** or **IP Address - IPv6**.

   The IP Network Search page appears.
2. Click the **IPv4 Subnet** or **IPv6 Subnet** tab.

   The IP Subnet Search page appears.

3. In the Search section, search for an IP subnet.

   See "Searching for IP Address Entities" for more information.

4. In the Search Results section, click an IP subnet link.

   The IP Subnet Summary page appears.

5. Click the **Consumers** tab, located below the IP Subnet Information section.

   The **Consumers** tab appears, which contains the Assignments, Reservations, and Conditions sections.

6. In the Conditions section, select the condition you want to delete and click **Delete**.

   The condition is deleted from the IP subnet.

Related Topics

- Viewing or Updating IP Subnets
- Activating or Deactivating IP Subnets
- Reserving IP Subnets

Partitioning IP Subnets

You can partition an IP subnet into smaller subnets to better manage IP addresses. You can change the default number of subnets to a lesser number of subnets, in which case the specified number of subnets are created and the remaining address space is calculated based on the maximum number of subnets possible in the space. Selecting a number of subnets that is less than the default number is called smart partitioning.

To partition an IPv4 or IPv6 subnet:

1. In the Resources section, click **IP Address - IPv4** or **IP Address - IPv6**.

   The IP Network Search page appears.

2. Click the **IPv4 Subnet** or **IPv6 Subnet** tab.

   The IP Subnet Search page appears.

3. In the Search section, search for an IP subnet.

   See "Searching for IP Address Entities" for more information.

4. In the Search Results section, click an IP subnet link.

   The IP Subnet Summary page appears.

5. Click **Partition**. Alternatively, search for an entity, select it in the search results, and click **Partition** in the Search Results toolbar.

   The Partition Details dialog box appears.

6. From the **Partition CIDR Number** list, select the classless inter-domain routing (CIDR) number.

7. From the **Number of Subnets** list, select the number of subnets into which you want to partition the selected IP subnet.

   Number of Subnets defaults to the maximum number of subnets possible with the new prefix length.

8. Click **Partition**.

   The Partition Details dialog box closes.

> **Note:**
>
> For IPv4 only, IP subnets can be partitioned even if they are assigned by enabling the **uim.ip.subnet.allowPartitionOnAssignedSubnet** property in the system-config.properties file. For more information on using this property, see *UIM System Administrator's Guide*.

Related Topics

- Managing IP Subnets
- Aggregating IP Subnets

Aggregating IP Subnets

You can aggregate an IP subnet by joining it with other contiguous subnets within the same network, which combines the collective IP addresses therein.

To aggregate an IPv4 or IPv6 subnet:

1. In the Resources section, click **IP Address - IPv4** or **IP Address - IPv6**.

   The IP Network Search page appears.
2. Click the **IPv4 Subnet** or **IPv6 Subnet** tab.

   The IP Subnet Search page appears.
3. In the Search section, search for an IP subnet.

   See "Searching for IP Address Entities" for more information.
4. In the Search Results section, click an IP subnet link.

   The IP Subnet Summary page appears.
5. Click **Join**. Alternatively, search for an entity, select it in the search results, and click **Join** in the Search Results toolbar.

   The Join Details dialog box appears.
6. From the **Join CIDR Number** list, select the classless inter-domain routing (CIDR) number.
7. Click **Join**.

   The Join Details dialog box closes.

Related Topics

- Managing IP Subnets
- Partitioning IP Subnets

IP Subnet - Information Page

You use the IP Subnet - Information page to edit the information that appears in the IPv4 or IPv6 Summary page Information section. Some data elements cannot be changed after the entity is created.

Field	Description
Name	Edit the name of the IPv4 subnet.
IP Address Domain	Displays the IP address domain. This field is read only. IP address domains are Network Address Domain entities.
IPv4 or **IPv6 Subnet Start**	Displays the starting address for the range of addresses within the IP subnet. This field is read only.
IPv4 or **IPv6 Subnet End**	Displays the ending address for the range of addresses within the IP subnet. This field is read only.
IPv6 Address Type	Displays the IPv6 address type. This field is read only.
Prefix Length	Displays the prefix length. This field is read only.
IPv4 or **IPv6 Network**	Displays the IP network to which the subnet belongs. This field is read only.
Owned By	Displays the party assigned as the owner of the IP network, and thereby owner of the IP subnet. This field is read only. The owner is a party entity.
Managed By	Click to search for a party to assign as the manager of the IP subnet. The list of parties from which to choose are the Party entities that you have defined prior to editing the IP address.
Inventory Status	Displays the stage in the lifecycle of the IP Subnet entity. This field is read only. See *UIM Concepts* for more information about inventory statuses.
Assignment Status	Displays the stage in the lifecycle of a specific assignment of the IP subnet entity to another entity. This field is read only. See *UIM Concepts* for more information about inventory statuses.
Description	Edit the description of the IP subnet.

Related Topics

Managing IP Subnets

IP Subnet Page

IP Subnet Page

You use the IP Subnet page to define the content for IPv4 or IPv6 Subnet entities. The page is arranged into tabs, each of which is used for a different purpose.

- Subnet Details Tab
- Consumers Tab

Subnet Details Tab

You use the Subnet Details tab to view and edit basic information about subnets.

Field	Description
IP Subnet Hierarchy	Displays the entities included in the IP subnet hierarchy, which you can expand or collapse. When an IP network is created, a subnet is automatically created, so the network always has a minimum of one child (the subnet). If the subnet is partitioned, the subnet will have two or more children (any partitioned subnets). The hierarchy displays the **IP Address**, **Inventory Status**, and **Assignment Status** fields for each **IP Address** listed. Depending on the level of the hierarchy, the **IP Address** may represent the IP subnet, any partitioned IP subnets, and any IP addresses.
IP Resource Pools / Inventory Groups	Displays any inventory groups of type IP Address Resource Pool to which the IP subnet is associated. You use inventory groups to organize entities for a particular purpose. The fields that appear in the IP Resource Pools / Inventory Group section are common among multiple entities. See "Entity Summary Page" for more information. See "Adding an Entity to an Inventory Group from the Entity Summary Page " for information about associating entities with an inventory group.
Custom Involvements	Displays any custom associations defined for the IP subnet with entities that are not otherwise associated. See "Working with Custom Involvements" for more information.

Consumers Tab

You use the Consumers tab to view and edit basic information about assignments, reservations, and conditions defined for the IP subnet.

Field	Description
Assignments	Displays any assignments defined for the IP subnet. See "Assigning Entities to Configuration Items" for more information.
Reservations	Displays any reservations defined for the IP subnet. See "Working with Resource Reservations" for more information.
References	Displays any references of the IP subnet which has been made.
Conditions	Displays any conditions defined for the IP subnet. See "Working with Conditions" for more information.

IP Subnet Partition Dialog Box

You use the IP Subnet Partition dialog box to partition IPv4 or IPv6 subnets.

Field	Description
IPv4 or **IPv6 Network**	Displays the name of the IP network. This field is read only.
IPv4 or **IPv6 Subnet Start**	Displays the starting address for the range of addresses within the IP subnet. This field is read only.
Partition CIDR Number	Select a classless inter-domain routing (CIDR) number from the list.
Subnet Mask	Displays the subnet mask, as generated based on the specified CIDR number. This field is read only.

Field	Description
IPv4 or **IPv6 Subnet End**	Displays the ending address for the range of addresses within the IP subnet. This field is read only.
Number of Subnets	Select the number of subnets into which you want to partition the subnet. **Number of Subnets** defaults to the maximum number of subnets possible with the new prefix length. You can change the defaulted number of subnets to a lesser number of subnets, in which case the specified number of subnets are created and the remaining address space is calculated based on the maximum number of subnets possible in the space. Selecting a number of subnets that is less than the defaulted number is called smart partitioning.
Maximum Hosts per Subnet	Displays the maximum hosts per subnet, as generated based on the specified CIDR number. This field is read only.

Related Topics

Working with IP Subnets

IP Subnet Page

IP Subnet Join Dialog Box

You use the IP Subnet Join dialog box to aggregate IPv4 or IPv6 subnets.

Field	Description
IPv4 or **IPv6 Network**	Displays the name of the IP network. This field is read only.
IPv4 or **IPv6 Subnet Start**	Displays the starting address for the range of addresses within the IP subnet. This field is read only.
Join CIDR Number	Select a classless inter-domain routing (CIDR) number.
Subnet Mask	Displays the subnet mask, as generated based the specified CIDR number. This field is read only.
IPv4 or **IPv6 Subnet End**	Displays the ending address for the range of addresses within the IP subnet. This field is read only.
New IPv4 or **IPv6 Subnet Start**	Displays the new starting address for the range of addresses within the joined IP subnets. This field is read only.
Maximum Hosts per Subnet	Displays the maximum hosts per subnet, as generated based the specified CIDR number. This field is read only.

Related Topics

Working with IP Subnets

IP Subnet Page

Working with IP Addresses

An IP address is a numerical label assigned to each device, such as a computer or printer, participating in a network that uses the Internet Protocol for communication. Because an IP address resides within IP network, within an IP subnet, an IP address has the same IP address prefix as the IP network and IP subnet.

See the following topics for more information about working with IP addresses:

- Creating IP Addresses
- Managing IP Addresses

Related Topics

IP Address Page

Working with IP Networks

Working with IP Subnets

Creating IP Addresses

See the following topics for more information about creating IP addresses:

- Creating IP Addresses within an Existing Non-Partitioned Subnet
- Creating IP Addresses within a New Network

Creating IP Addresses within an Existing Non-Partitioned Subnet

You can create an IP address within an existing non-partitioned subnet from the Network Search Results section or the Subnet Search Results section, as described in the following procedure.

To create an IPv4 or IPv6 address within an existing non-partitioned subnet:

1. In the Resources section, click **IP Address - IPv4** or **IP Address - IPv6**.

   The IP Network Search page appears.

2. Do one of the following:

   To create the IP address from the Network Search Results section:

   a. In the Search section, search for an IP network.

      See "Searching for IP Address Entities" for more information.

   b. In the Search Results section, expand an IP network.

   c. Within the expanded network, right-click on a non-partitioned IP subnet row and select **Create IPv4 Address** or **Create IPv6 Address**.

      The IP Address - New page appears.

   To create the IP address from the Subnet Search Results section:

   a. Click the **IPv4 Subnet** or **IPv6 Subnet** tab.

      The IP Subnet Search page appears.

   b. In the Search section, search for an IP subnet.

      See "Searching for IP Address Entities" for more information.

   c. In the Search Results section, right-click on a non-partitioned IP subnet row and select **Create IPv4 Address** or **Create IPv6 Address**.

      The IP Address - New page appears.

3. Populate the fields as needed. See IP Address - New Page for detailed information about each field.

> **Note:**
>
> When creating an IP address from within an existing non-partitioned subnet, several of the fields are pre-populated based on the selected subnet, and based on the network in which the selected subnet resides.

4. Click **Save** or **Save And Close**.

   Depending on what you clicked, the IP Address Summary page appears, or the IP Address Search page appears.

Creating IP Addresses within a New Network

To create an IPv4 or IPv6 address:

1. In the Resources section, click **IP Address - IPv4** or **IP Address - IPv6**.

   The IP Network Search page appears.

2. Click the **IPv4 Address** or **IPv6 Address** tab.

   The IP Address Search page appears.

3. In the Search Results toolbar, click **Create**.

   The IP Address - New page appears.

4. (Optional) In the **Name** field, enter a name for the IP address.
5. In the **IPv4** or **IPv6 Address From** field, enter the IP address from for the IP address.
6. (Optional) In the **MAC Address** field, enter a MAC address for the IPv4 address.
7. (Optional) If you entered a MAC address, from the **MAC Address Type** list, select a MAC address type.
8. The **Assignment Status** field automatically defaults to the **Unassigned** status.
9. Associate a network address domain to the IPv4 address. Click the **Search** icon next to the **IP Address Domain** field to search for a network address domain.

   See "Working with Resource Management Entities " for more information.

10. (Optional) In the **IPv4 Address To** field, enter the IPv4 address to for the IPv4 address.
11. (Optional) Associate a party to the IP address. Click the **Search** icon next to the **Managed By** field to search for a party.

    See "Working with Parties" for more information.

12. (Optional) In the **Description** field, enter a description for the IPv4 address.
13. Click **Save** or **Save And Close**.

    Depending on what you clicked, the IP Address Summary page appears, or the IP Address Search page appears.

Related Topics

IP Address - New Page

IP Address Page

Managing IP Addresses

Managing IP Addresses

You can manage IPv4 and IPv6 addresses by performing any of the following tasks:

- Viewing or Updating IP Addresses
- Deleting IP Addresses
- Activating or Deactivating IP Addresses
- Unreserving IP Addresses
- Adding or Deleting Conditions to and from IP Addresses

Viewing or Updating IP Addresses

You can view or update an entity's basic information from the Information section at the top of its Summary page. The Information section displays much of the information entered during entity creation. Some data elements cannot be changed after the entity is created.

To view or edit an IPv4 or IPv6 address:

1. In the Resources section, click **IP Address - IPv4** or **IP Address - IPv6**.

   The IP Network Search page appears.
2. Click the **IPv4 Address** or **IPv6 Address** tab.

   The IP Address Search page appears.
3. In the Search section, search for an IP address.

   See "Searching for IP Address Entities" for more information.
4. In the Search Results section, click an IP address link.

   The IP Address Summary page appears, where you can view the IP address.
5. Click **Edit**. Alternatively, search for an entity, select it in the search results, and click **Edit** in the Search Results toolbar.

   Several fields in the IP Address Information section become editable.
6. Make any changes and click **Save** or **Save And Close**.

   Depending on what you clicked, the IP Address Summary page appears, or the IP Address Search page appears.

Related Topics

- Deleting IP Addresses
- Activating or Deactivating IP Addresses
- Unreserving IP Addresses
- Adding or Deleting Conditions to and from IP Addresses

Deleting IP Addresses

You can delete IP addresses.

To delete an IPv4 or IPv6 address:

1. In the Resources section, click **IP Address - IPv4** or **IP Address - IPv6**.

The IP Network Search page appears.

2. Click the **IPv4 Address** or **IPv6 Address** tab.

   The IP Address Search page appears.

3. In the Search section, search for an IP address.

   See "Searching for IP Address Entities" for more information.

4. In the Search Results section, select an IP address row.

5. In the Search Results toolbar, click **Delete**.

   The Delete Confirmation dialog box appears.

6. Click **Yes** to confirm the deletion.

   The IP address is deleted.

Related Topics

- Viewing or Updating IP Addresses
- Activating or Deactivating IP Addresses
- Unreserving IP Addresses
- Adding or Deleting Conditions to and from IP Addresses

Activating or Deactivating IP Addresses

IP addresses are lifecycle-managed entities for which you can change the inventory status.

On the **Actions** menu:

- **Activate** is available only for IP addresses with an Inventory Status of **Unavailable**. Selecting **Activate** changes the Inventory Status of the IP address from **Unavailable** to **Installed**.
- **Deactivate** is available only for IP addresses with an Inventory Status of **Installed**. Selecting **Deactivate** changes the Inventory Status of the IP address from **Installed** to **Unavailable**.

To activate or deactivate an IPv4 or IPv6 address:

1. In the Resources section, click **IP Address - IPv4** or **IP Address - IPv6**.

   The IP Network Search page appears.

2. Click the **IPv4 Address** or **IPv6 Address** tab.

   The IP Address Search page appears.

3. In the Search section, search for an IP address.

   See "Searching for IP Address Entities" for more information.

4. In the Search Results section, click an IP address link.

   The IP Address Summary page appears.

5. From the **Actions** menu, select **Activate** or **Deactivate**.

Related Topics

- Managing Entity Life Cycles
- Viewing or Updating IP Addresses

- Deleting IP Addresses
- Reserving IP Addresses
- Unreserving IP Addresses
- Adding or Deleting Conditions to and from IP Addresses

Reserving IP Addresses

You can reserve an IP address resource in the same manner you reserve other resources. See "Working with Resource Reservations" for more information.

In addition, you can reserve an IP address resource from the Reservations section on its Summary page.

To reserve an IPv4 or IPv6 address:

1. In the Resources section, click **IP Address - IPv4** or **IP Address - IPv6**.

   The IP Network Search page appears.
2. Click the **IPv4 Address** or **IPv6 Address** tab.

   The IP Address Search page appears.
3. In the Search section, search for an IP address.

   See "Searching for IP Address Entities" for more information.
4. In the Search Results section, click an IP address link.

   The IP Address Summary page appears.
5. Click the **Consumers** tab, located below the IP Address Information section.

   The **Consumers** tab appears, which contains the Assignments, Reservations, and Conditions sections.
6. In the Reservations section, select the IP address you want to reserve. If a reservation is already shown, you cannot reserve the resource unless you delete the existing reservation. See "Removing Resources from Reservations".
7. Click **Create**.

   The Reservation - New page appears. See "Reservation - New Page" for more information about the fields in this page.
8. In the **Reserved for Type** list, select the type of entity or process for which the reservation is made.

   The options in the list vary depending on how UIM is configured.
9. In the **Reserved For** field, enter text that identifies who is making the reservation.

   This value must be specified during reservation redemption. See "Redeeming Reservations".
10. In the **Reservation Type** list, select **Shortterm** or **Longterm**.
11. In the **Start Date** field, enter the date on which the reservation becomes effective.
12. (Optional) In the **Expiry Date** field, enter the date on which the reservation expires.

    Define a date here to override the **Reservation Type** setting.
13. (Optional) In the **Reason** field, enter a reason for the reservation.
14. Click **Save and Close**.

The list of reservations reappears, now including the reservation you just created.

Related Topics

- Unreserving IP Addresses
- Adding or Deleting Conditions to and from IP Addresses

Unreserving IP Addresses

You can unreserve an IP address resource in the same manner you unreserve other resources. See "Working with Resource Reservations" for more information.

In addition, you can unreserve an IP address resource from the Reservations section on its Summary page.

To unreserve an IPv4 or IPv6 address:

1. In the Resources section, click **IP Address - IPv4** or **IP Address - IPv6**.

   The IP Network Search page appears.
2. Click the **IPv4 Address** or **IPv6 Address** tab.

   The IP Address Search page appears.
3. In the Search section, search for an IP address.

   See "Searching for IP Address Entities" for more information.
4. In the Search Results section, click an IP address link.

   The IP Address Summary page appears.
5. Click the **Consumers** tab, located below the IP Address Information section.

   The **Consumers** tab appears, which contains the Assignments, Reservations, and Conditions sections.
6. In the Reservations section, select the IP address you want to unreserve and click **Delete**.

   The IP address resource is removed from the reservation.

Related Topics

- Reserving IP Addresses
- Viewing or Updating IP Addresses
- Deleting IP Addresses
- Activating or Deactivating IP Addresses
- Adding or Deleting Conditions to and from IP Addresses

Adding or Deleting Conditions to and from IP Addresses

You can add conditions to an IP address resource in the same manner you add conditions to other resources. See "Working with Conditions" for more information.

You cannot delete conditions from an IP address resource in the same manner you delete conditions from other resources, so disregard the "Deleting Conditions" subsection within the previously cited section. Instead, perform the following procedure.

To delete conditions from an IPv4 or IPv6 address:

1. In the Resources section, click **IP Address - IPv4** or **IP Address - IPv6**.

   The IP Network Search page appears.

2. Click the **IPv4 Address** or **IPv6 Address** tab.

   The IP Address Search page appears.

3. In the Search section, search for an IP address.

   See "Searching for IP Address Entities" for more information.

4. In the Search Results section, click an IP address link.

   The IP Address Summary page appears.

5. Click the **Consumers** tab, located below the IP Address Information section.

   The **Consumers** tab appears, which contains the Assignments, Reservations, and Conditions sections.

6. In the Conditions section, select the condition you want to delete and click **Delete**.

   The condition is deleted from the IP address.

Related Topics

- Viewing or Updating IP Addresses
- Deleting IP Addresses
- Activating or Deactivating IP Addresses
- Unreserving IP Addresses

IP Address - New Page

You use the IP Address - New page to create new IPv4 or IPv6 addresses.

If you are creating an IP address from an existing non-partitioned subnet, several of the fields are pre-populated and you cannot change the data.

Field	Description
Name	Enter a name for the IP address.
IP Address Domain	Select an IP address domain. The list of IP address domains from which to choose are the Network Address Domain entities that you have defined prior to creating the IP address.
IPv4 or **IPv6 Address From**	Enter an address. If creating a range of addresses, the address you enter is the starting address used with the ending address you specify in **IPv4** or **IPv6 Address To**.
IPv4 or **IPv6 Address To**	Enter an address. If creating a range of addresses, the address you enter is the ending address used with the starting address you specify in **IPv4** or **IPv6 Address From**.
MAC Address	Enter the MAC address of client using the IP address. A MAC address is hexadecimal number that uniquely identifies hardware, and which varies per specified MAC address type.

Field	Description
MAC Address Type	Select a MAC address type from the list. MAC address types provide the ability to support different types of MAC addresses, including: • Ethernet • ATM • Bluetooth • Fibre Channel • MAC Type 80211
Managed By	Click to search for a party to assign as the manager of the IP address. The list of parties from which to choose are the Party entities that you have defined prior to creating the IP address.
Inventory Status	Displays the stage in the lifecycle of the IP Network entity. This field is read only. See *UIM Concepts* for more information about inventory statuses.
Assignment Status	Displays the stage in the lifecycle of a specific assignment of the IPv4 Address entity to another entity. This field is read only. See *UIM Concepts* for more information about inventory statuses.
Description	Enter a description for the IP address.

Related Topics

Creating IP Addresses

IP Address Page

IP Address - Information Page

You use the IP Address - Information page to edit the information that appears in the Summary page Information section. Some data elements cannot be changed after the entity is created.

Field	Description
Name	Edit the name of the IP address.
IP Address Domain	Displays the IP address domain. This field is read only. IP address domains are Network Address Domain entities.
IPv4 or **IPv6 Address**	Displays the IP address. This field is read only.
IPv6 Address Type	Displays the IPv6 address type. This field is read only.
Prefix Length	Displays the prefix length. This field is read only.
MAC Address	Edit the MAC address of client using the IP address. A MAC address is hexadecimal number that uniquely identifies hardware, and which varies per specified MAC address type.
MAC Address Type	Select a MAC address type from the list. MAC address types provide the ability to support different types of MAC addresses, including: • Ethernet • ATM • Bluetooth • Fibre Channel • MAC Type 80211

Field	Description
IPv4 or **IPv6 Subnet Start**	Displays the starting address for the range of addresses within the IP subnet to which the IP address belongs. This field is read only.
IPv4 or **IPv6 Subnet End**	Displays the ending address for the range of addresses within the IP subnet to which the IP address belongs. This field is read only.
IPv4 or **IPv6 Network**	Displays the network address. This field is read only.
Owned By	Displays the party assigned as the owner of the IP network, and therefore owner of the IP subnet and IP address. This field is read only. The owner is a party entity.
Managed By	Click to search for a party to assign as the manager of the IP address. The list of parties from which to choose are the Party entities that you have defined prior to editing the IP address.
Inventory Status	Displays the stage in the lifecycle of the IP Address entity. This field is read only. See *UIM Concepts* for more information about inventory statuses.
Assignment Status	Displays the stage in the lifecycle of a specific assignment of the IP Address entity to another entity. This field is read only. See *UIM Concepts* for more information about inventory statuses.
Description	Edit the description of the IP address.

Related Topics

Managing IP Addresses

IP Address Page

IP Address Page

You use the IP Address page to define the content for IPv4 or IPv6 Address entities. The page is arranged into tabs, each of which is used for a different purpose.

- IP Address Details Tab
- Consumers Tab

IP Address Details Tab

You use the IP Address Details tab to view and edit basic information about IP addresses.

Field	Description
IP Resource Pools / Inventory Groups	Displays any inventory groups of type IP Address Resource Pool to which the IP address is associated. You use inventory groups to organize entities for a particular purpose. The fields that appear in the IP Resource Pools / Inventory Group section are common among multiple entities. See "Entity Summary Page" for more information. See "Adding an Entity to an Inventory Group from the Entity Summary Page " for information about associating entities with an inventory group.
Custom Involvements	Displays any custom associations defined for the IP address with entities that are not otherwise associated. See "Working with Custom Involvements" for more information.

Related Topics

Working with IP Addresses

Consumers Tab

You use the Consumers tab to view and edit basic information about assignments, reservations, and conditions defined for the IP address.

Field	Description
Assignments	Displays any assignments defined for the IP address. See "Assigning Entities to Configuration Items" for more information.
Reservations	Displays any reservations defined for the IP address. See "Working with Resource Reservations" for more information.
Conditions	Displays any conditions defined for the IP address. See "Working with Conditions" for more information.

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Working with Telephone Numbers

You can include telephone numbers in Oracle Communications Unified Inventory Management (UIM). You can manage and assign telephone numbers as items in your inventory, or you can include them only as information that applies to other entities, such as parties or locations.

Specifications can define different types of telephone numbers that vary by geography. For example, you could have specifications for North American numbers and UK numbers. You may also have specifications that define numbers for specific purposes, such as wire line numbers or Centrex numbers.

The formatting of telephone numbers is governed by rulesets defined for each specification. These rulesets determine the length of a number and arrangement of its digits. A default ruleset applies when a specification does not include its own. See *UIM System Administrator's Guide* for information about setting the default values.

A configuration file entry controls whether zeros are allowed at the beginning of telephone numbers. By default, leading zeros are stripped during validation, but you can change the setting to allow them. Some countries, such as South Africa, use leading zeros as an integral part of telephone numbers. See *UIM System Administrator's Guide* for information about changing this setting.

You can include telephone numbers in conditions, involvements, inventory groups, business interactions, network address domains, and reservations.

The Telephone Number landing page contains icons that enable you to do the following:

- Search, edit, and delete telephone numbers. See "Searching for Entities", "Viewing and Updating Entity Information", and "Deleting Entities" for more information.

  > **Note:**
  >
  > If a telephone number is reserved or if it has a Blocked condition, then that telephone number is not retrieved in the search results when you do a telephone number search by selecting **Unassigned** from the **Assignment Status** list.

- Create telephone numbers. See "Creating Telephone Numbers" for more information.
- Search for telephone number entities in blocks of sequential numbers (telephone number blocks). See "Searching for Telephone Number Blocks" for more information.

You can also reserve a telephone number block (multiple telephone numbers) the same way as you reserve a single telephone number. See "Creating Reservations from a Search Results Page" for more information.

In addition, the Telephone Number landing page also contains icons that enable you to perform various bulk operations on multiple telephone numbers at a time by providing data in a spreadsheet file as input, which UIM uses to process the bulk operation. See "Working with Telephone Number Bulk Operations" for more information.

See the following topics for more information about working with Telephone Number entities:

- Creating Telephone Numbers

- Working with Telephone Number Bulk Operations
- Telephone Number - New Page
- Telephone Number - Information Page
- Telephone Number - Bulk Edit Page
- Telephone Number Summary Page
- Telephone Number Operation Page

Creating Telephone Numbers

You can create Telephone Number entities individually or in blocks of sequential numbers.

UIM enforces the formatting ruleset that applies to the specification you choose for the number. If you enter the number incorrectly, you see an error message.

To create Telephone Number entities:

1. In the **Inventory - Resources** group of the navigation section, click **Telephone Numbers**.

   The Telephone Numbers landing page appears.
2. Click **Create**.

   The Telephone Number - New page appears. See "Telephone Number - New Page" for information about this page.
3. In the **Specification** list, select the Telephone Number specification you want to use for the entities that you create.

   If the specification you select includes characteristics, they appear in the page.
4. In the **Range From** field, do one of the following:
   - Enter the number you want to create.
   - Enter the starting number of a range of numbers that you want to create.
5. (Optional) In the **Range To** field, enter the ending number if you are creating a range of numbers.

   UIM creates individual entities for each number in the range.
6. In the **Description** field, enter a description for the number or numbers.
7. Enter the appropriate information for any additional fields that appear in the page.
8. Click **Save and Continue**.

Related Topics

Adding Entities to an Inventory Group

Searching for Telephone Number Blocks

Creating Reservations from a Search Results Page

Adding Conditions

Working with Telephone Number Bulk Operations

Telephone number bulk operations enable you to perform various operations on multiple telephone numbers at a time, based on the data you provide as input in a spreadsheet file. You can perform the following bulk operations on telephone numbers:

- Load and associate telephone numbers
- Create ported-in telephone numbers
- Assign ported-in numbers to services
- Transition ported-out telephone numbers
- Transition snapback telephone numbers
- Transition winback telephone numbers
- Assign winback telephone numbers to services

See the following topics for more information about working with telephone number bulk operations:

- Loading and Associating Telephone Numbers in Bulk
- Working with Ported-In Telephone Numbers
- Transitioning Ported-Out Telephone Numbers in Bulk
- Transitioning Snapback Telephone Numbers in Bulk
- Working with Winback Telephone Numbers

Loading and Associating Telephone Numbers in Bulk

You can load and associate telephone numbers in bulk using the Telephone Number Operation - Load And Associate page. Loading and associating telephone numbers implies that in a single operation you can do the following:

- (Optional) Create logical devices.
- (Optional) Create logical device accounts.
- Associate logical devices with telephone numbers and logical device accounts. The telephone numbers must already exist in the inventory.

To load and associate telephone numbers, UIM provides a sample spreadsheet that contains the following tabs:

- **SIM:** Use this tab to specify information to create logical devices, which represent the subscriber identity module (SIM). This tab is optional.
- **IMSI:** Use this tab to specify information to create logical device accounts, which represent the international mobile subscriber identity (IMSI). This tab is optional.
- **SimMapping:** Use this tab to specify information to associate SIMs with IMSIs, and to associate Mobile Station International Subscriber Directory Number (MSISDNs) with IMSIs. On the **SimMapping** tab, telephone numbers represent MSISDN. Associating MSISDNs with SIMs is optional. In other words, you may choose to not specify telephone numbers in the MSISDN column, in which case UIM ignores the MSISDN column and associates only the SIMs with IMSIs.

UIM uses separate transactions to process the information in the **SIM**, **IMSI**, and **SimMapping** tabs. The **SIM** tab is processed first, and next the **IMSI** tab is processed, and then finally the

SimMapping tab is processed. If the processing of a tab fails, UIM does not roll back the successfully completed processes of the other tabs. For example, if the processing of the **IMSI** tab fails, UIM does not roll back the logical devices that are created as part of processing the **SIM** tab.

> **Note:**
>
> In the sample spreadsheet, you must retain the column headers even if all the rows in a column are empty.

On the **SIM** tab, you provide the required information in the following columns to create logical device entities in bulk:

- action (for example, CREATE)
- name
- specification
- description
- characteristic
- deviceIdentifier
- networkLocation

On the **IMSI** tab, you provide the required information in the following columns to create logical device account entities in bulk:

- action (for example, CREATE)
- name
- specification
- description
- characteristic
- SIMName
- SIMId

On the **SimMapping** tab, you provide the required information in the following columns to associate SIMs with IMSIs, and to associate SIMs with MSISDNs:

- action (for example, ASSOCIATE)
- MSISDN
- SIMName
- IMSIName

> **Note:**
>
> In UIM, entities must have unique IDs but can have the same name. In other words, UIM does not to distinguish between entities of the same type that are not uniquely named.
>
> For example, when associating SIMs (logical devices) and IMSIs (logical device accounts) using the Load and Associating bulk operation, ensure that you specify a unique name in the **SIMName** column on the **SimMapping** tab of the Load and Associate spreadsheet. If you specify the same name for multiple logical devices in multiple rows under the **SIMName** column, the Load and Associate bulk operation may not work as expected and may fetch the same logical device from the database and associate it with different logical device accounts/telephone numbers.

UIM uses the spreadsheet file to load and associate telephone numbers in bulk.

To load and associate telephone numbers in bulk:

1. In the **Inventory - Resources** group of the navigation section, click **Telephone Numbers**.

   The Telephone Number landing page appears.
2. Hover the mouse cursor over the Load And Associate icon and click **Load And Associate**.

   The Telephone Number Operation - Load And Associate page appears.
3. In the **Field** field, click **Browse** to navigate to and select a spreadsheet file that contains information about the logical devices, telephone numbers, and logical device accounts that you want to associate.
4. (Optional) Click **Download Excel Template** to download the sample spreadsheet file in which you can provide the required telephone number information.
5. Click **Process**.

   UIM processes the input data you provided in the spreadsheet and associates SIMs with IMSIs, and if you provided information about MSISDNs (telephone numbers) in the spreadsheet file, then UIM associates MSISDNs with SIMs using custom involvements.

Working with Ported-In Telephone Numbers

You work with the ported-in telephone numbers in the following pages:

- **Telephone Number Operation - Port In:** Enables you to create ported-in telephone numbers in bulk by providing the required information in a spreadsheet file.
- **Telephone Number Operation - Port In Service Assignment:** Enables you to bulk assign the ported-in telephone numbers to services by providing the required information in a spreadsheet file.

UIM uses separate spreadsheet files to create ported-in telephone numbers and to assign the ported-in telephone numbers to services.

See the following topics for more information about working with ported-in telephone numbers:

- Creating Ported-In Telephone Numbers in Bulk
- Bulk Assigning Ported-In Telephone Numbers to Services

Creating Ported-In Telephone Numbers in Bulk

You can create ported-in telephone numbers in bulk using the Telephone Number Operation - Port In page.

In a spreadsheet file, you provide the required information in the following columns to create the ported-in telephone numbers:

- action (for example, PORTIN)
- telephoneNumber
- specification
- characteristic (for example, tnType=PORTEDIN)

  UIM uses the TN Type characteristic to identify telephone numbers as ported-in.
- description

To create ported-in telephone numbers in bulk:

1. In the **Inventory - Resources** group of the navigation section, click **Telephone Numbers**.

   The Telephone Number landing page appears.
2. Hover the mouse cursor over the Port In icon and click **Port In**.

   The Telephone Number Operation - Port In page appears.
3. In the **Field** field, click **Browse** to navigate to and select a spreadsheet file that contains the required information about the ported-in telephone numbers.
4. (Optional) Click **Download Excel Template** to download the sample spreadsheet file in which you can provide the required telephone number information.
5. Click **Process**.

   UIM processes the input data you provided in the spreadsheet, creates multiple ported-in numbers and reserves them based on the specified quarantine period.

   The quarantine period is configured in the **telephoneNumberBulk.properties** file. See *UIM System Administrator's Guide* for more information.

Bulk Assigning Ported-In Telephone Numbers to Services

You can assign ported-in telephone numbers to services using the Telephone Number Operation - Port In Service Assignment page. The ported-in telephone numbers must not be in Reserved status for the bulk assignment to be successful.

In a spreadsheet file, you provide the required information in the following columns to assign the newly created ported-in telephone numbers to services:

- action (for example, PORTIN)
- telephoneNumber
- serviceSpecification
- serviceName
- serviceConfigurationSpecification

To bulk assign the ported-in telephone numbers to services:

1. In the **Inventory - Resources** group of the navigation section, click **Telephone Numbers**.

The Telephone Number landing page appears.

2. Hover the mouse cursor over the Port In icon and click **Port In Service Assignment**.

   The Telephone Number Operation - Port In Service Assignment page appears.

3. In the **Field** field, click **Browse** to navigate to and select a spreadsheet file that contains information about the ported-in telephone numbers and the services to which you want to assign them.
4. (Optional) Click **Download Excel Template** to download the sample spreadsheet file in which you can provide the required telephone number information.
5. Click **Process**.

   UIM processes the input data you provided in the spreadsheet, creates services and service configurations, assigns the ported-in telephone numbers to the configuration items on the service configurations and completes the service configurations.

Transitioning Ported-Out Telephone Numbers in Bulk

You can transition ported-out telephone numbers in bulk using the Telephone Number Operation - Port Out page.

In a spreadsheet file, you provide the required information in the following columns to transition ported-out telephone numbers in bulk:

- action (for example, PORTOUT)
- telephoneNumber
- characteristic (for example, tnType=PORTEDOUT)

  UIM uses the TN Type characteristic to identify telephone numbers as ported-out.

UIM uses the spreadsheet file to transition ported-out telephone numbers in bulk.

To transition ported-out telephone numbers in bulk:

1. In the **Inventory - Resources** group of the navigation section, click **Telephone Numbers**.

   The Telephone Number landing page appears.

2. Hover the mouse cursor over the Port Out icon and click **Port Out**.

   The Telephone Number Operation - Port Out page appears.

3. In the **Field** field, click **Browse** to navigate to and select a spreadsheet file that contains information about the ported-out telephone numbers you want to create.
4. (Optional) Click **Download Excel Template** to download the sample spreadsheet file in which you can provide the required telephone number information.
5. Click **Process**.

   UIM processes the input data you provided in the spreadsheet and transitions the ported-out telephone numbers to PORTED status.

Transitioning Snapback Telephone Numbers in Bulk

You can transition snapback telephone numbers in bulk using the Telephone Number Operation - Snapback page.

In a spreadsheet file, you provide the required information in the following columns to transition the snapback telephone numbers in bulk:

- action (for example, SNAPBACK)
- telephoneNumber
- characteristic (for example, tnType=OWNED)

UIM uses the spreadsheet file to transition the snapback telephone numbers in bulk.

To transition snapback telephone numbers in bulk:

1. In the **Inventory - Resources** group of the navigation section, click **Telephone Numbers**.

   The Telephone Number landing page appears.
2. Hover the mouse cursor over the Snapback icon and click **Snapback**.

   The Telephone Number Operation - Snapback page appears.
3. In the **Field** field, click **Browse** to navigate to and select a spreadsheet file that contains information about the snapback telephone numbers you want to create.
4. (Optional) Click **Download Excel Template** to download the sample spreadsheet file in which you can provide the required telephone number information.
5. Click **Process**.

   UIM processes the input data you provided in the spreadsheet and transitions the snapback telephone numbers to Unassigned status.

Working with Winback Telephone Numbers

You work with the winback telephone numbers in the following pages:

- **Telephone Number Operation - Winback:** Enables you to transition winback telephone numbers in bulk by providing the required information in a spreadsheet file.
- **Telephone Number Operation - Winback Service Assignment:** Enables you to bulk assign winback telephone numbers to services by providing the required information in a spreadsheet file.

UIM uses separate spreadsheet files to transition winback telephone numbers and to assign the winback telephone numbers to services.

See the following topics for more information about working with winback telephone numbers:

- Transitioning Winback Telephone Numbers in Bulk
- Bulk Assigning Winback Telephone Numbers to Services

Transitioning Winback Telephone Numbers in Bulk

You can transition winback telephone numbers in bulk using the Telephone Number Operation - Winback page.

In a spreadsheet file, you provide the required information in the following columns to create the winback telephone numbers:

- action (for example, WINBACK)
- telehoneNumber
- characteristic (for example, tnType=OWNED)
- characteristic (for example, winback=true)

To transition winback telephone numbers in bulk:

1. In the **Inventory - Resources** group of the navigation section, click **Telephone Numbers**.

   The Telephone Number landing page appears.

2. Hover the mouse cursor over the Winback icon and click **Winback**.

   The Telephone Number Operation - Winback page appears.

3. In the **Field** field, click **Browse** to navigate to and select a spreadsheet file that contains information about the winback telephone numbers.

4. (Optional) Click **Download Excel Template** to download the sample spreadsheet file in which you can provide the required telephone number information.

5. Click **Process**.

   UIM processes the input data you provided in the spreadsheet and transitions the winback telephone numbers to Unassigned status.

Bulk Assigning Winback Telephone Numbers to Services

You can assign winback telephone numbers to services using the Telephone Number Operation - Winback Service Assignment page.

In a spreadsheet file, you provide the required information in the following columns to assign the winback telephone numbers to services:

- action (for example, WINBACK)
- telephoneNumber
- serviceSpecification
- serviceName
- serviceConfigurationSpecification

To bulk assign winback telephone numbers to services:

1. In the **Inventory - Resources** group of the navigation section, click **Telephone Numbers**.

   The Telephone Number landing page appears.

2. Hover the mouse cursor over the Winback icon and click **Winback Service Assignment**.

   The Telephone Number Operation - Winback Service Assignment page appears.

3. In the **Field** field, click **Browse** to navigate to and select a spreadsheet file that contains information about the winback telephone numbers and the services to which you want to assign them.

4. (Optional) Click **Download Excel Template** to download the sample spreadsheet file in which you can provide the required telephone number information.

5. Click **Process**.

   UIM processes the input data you provided in the spreadsheet, creates services and service configurations, assigns the winback telephone numbers to the configuration items on the service configurations and completes the service configurations.

Telephone Number - New Page

You use the Telephone Number - New page to create Telephone Number entities individually or in blocks of sequential numbers. The maximum number you can create is configurable based on the uim.entity.maxCreateRange entry in the **system-config. properties** file. See the *UIM System Administration Guide* for more information.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Select the Telephone Number specification you want to use for the entities you create. For example, the specification might define different types of telephone numbers that vary by geography. See *UIM Concepts* for more information about telephone numbers.
Range From	Enter the number you want to create or the starting number of a range of numbers.
Range To	(Optional) Enter the ending number if you are creating a range of numbers.
Description	Enter a description of the telephone number.
Inventory Status	Displays the stage in the life cycle of the telephone number. This field is read only. See *UIM Concepts* for more information about inventory statuses.
Assignment Status	Displays the stage in the life cycle of a specific assignment of the telephone number to another entity. This field is read only. See *UIM Concepts* for more information about assignment statuses.

Related Topics

Creating Telephone Numbers

Searching for Entities

Telephone Number - Information Page

You use the Telephone Number - Information page to edit the information that appears in the Summary page Information section. Some data elements, such as the ID, cannot be changed after the entity is created.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Displays the specification used to define the telephone number. This field is read only.
Description	Edit the description of the telephone number.

Field	Description
Inventory Status	Displays the stage in the life cycle of the telephone number. This field is read only. See *UIM Concepts* for more information about inventory statuses.
Assignment Status	Displays the stage in the life cycle of a specific assignment of the telephone number to another entity. This field is read only. See *UIM Concepts* for more information about assignment statuses.

Related Topics

Creating Telephone Numbers

Searching for Entities

Telephone Number - Bulk Edit Page

You use the Telephone Number - Bulk Edit page to edit the characteristics of one or more Telephone Number entities. To enable this option, you must do the following:

- Select a specification in the telephone number search.
- Be in the current or live business interaction context.
- In the Search Results section, select one or more entities.
- Then, select the **Bulk Edit** option, which opens the Telephone Number - Bulk Edit page.

To bulk edit the characteristics of Telephone Number entities:

1. In the Telephone Number - Bulk Edit page, click the **Add Fields** button to select the characteristics fields to display.

   The Add Fields page appears.

2. Use the arrow buttons to move fields from the available fields to the selected fields column to select the fields to display and edit. You can also move fields from the selected fields column back to available fields. Click **OK**.

   > **Note:**
   >
   > If there are no characteristics for the selected specification, the page columns appear empty. In this case, you need to add characteristics to the specification. See *UIM Concepts* for information on characteristics.

   The selected characteristics appear in the bulk edit page.

3. Enter values in the relevant fields for the characteristics.
4. Click **Save And Close**.

   The following confirmation message is displayed:

   ```
   You are about to update all the selected entities of specification
   specificationName. The following characteristics values will be updated.

   characteristic1
   characteristic2
   ```

```
.
.
characteristicN

Do you want to proceed?
```

5. Click **Yes**.

   The characteristics with set field values are added to all selected entities.

Related Topics

Creating Telephone Numbers

Searching for Entities

Telephone Number Summary Page

You use the Telephone Number Summary page to define the content for Telephone Number entities. The page is arranged into tabs, each of which is used for a different purpose:

- General Information Tab
- Associated Resources Tab
- Consumers Tab
- Groups and Infrastructure Tab

See the following topics for more information about summary pages:

- Related Pages Menu
- Actions Menu

See "Entity Summary Page" for information about Summary page fields that are common among all entities.

Related Topics

Creating Telephone Numbers

Searching for Entities

General Information Tab

You use the **General Information** tab to view basic information about the Telephone Number entity, most of which was defined when you created the entity. Click **Edit** to change this information. Some data elements, such as the ID, cannot be changed after the entity is created. See "Telephone Number - Information Page" for more information.

Associated Resources Tab

You use the **Associated Resources** tab to view any custom associations defined for the telephone number with entities that are not otherwise associated. See "Working with Custom Involvements" for more information.

Consumers Tab

You use the **Consumers** tab to view information about assignments and business interactions of the telephone number.

Section	Description
Assignments	Displays the assignments of the telephone number to another entity. For each assignment, you can see the ID and name of the entity to which the assignment has been made, that entity's specification, the assignment status, and the start and end dates.
Business Interactions	Displays any business interactions with which the telephone number is associated. See "Working with Business Interactions" for more information.

Groups and Infrastructure Tab

You use the **Groups and Infrastructure** tab to view any inventory groups to which the telephone number is associated. You use inventory groups to organize entities for a particular purpose.

See "Adding an Entity to an Inventory Group from the Entity Summary Page " for information about associating entities with an inventory group.

Telephone Number Operation Page

You use the Telephone Number Operation page to process the telephone number bulk operations (such as Load and Associate, Port In, Port Out, Snapback, and Winback), based on the data you provide in a spreadsheet file.

Field	Description
File	Click **Browse** to navigate to and select a spreadsheet file that contains the required information about the telephone numbers.
Download Excel Template	Click to download the sample excel template.
Process	Click to start the telephone number bulk operation process.
Cancel	Click to cancel the telephone number bulk operation process.

Related Topics

Working with Telephone Number Bulk Operations

17

Working with Operational Analysis

In Oracle Communications Unified Inventory Management (UIM), you use the options in the Operational Analysis group to:

- Search paths between the source and target entities and analyze the path results in a topological view
- Generate outage reports that provide details about system outages that occurred because of simulation failures

See *UIM Concepts* for more information on path analysis and outage reports.

For more information on the tasks that you can perform in Operational Analysis, see the following topics:

- Evaluating Outage Impacts
- About Running Path Analysis in the Search Page

Evaluating Outage Impacts

Outages may occur because of simulation failures such as:

- Field failure
- Interrupted lines
- Protection failure
- Single point failure

To understand and evaluate all connectivity services or outages that are impacted, you can generate an outage impacts report. The outage impacts report provides a list of all system outages that occurred because of any impacted connectivity services or simulation failures and their associated contacts. The report is generated in the form of a spreadsheet that shows the list of circuits or services impacted using which you can analyze the outages.

See "Generating Outage Impacts Report" for more information on generating the outage impacts report.

> **Note:**
>
> You can generate outage reports using the REST API. See *UIM REST API Guide* for more information about REST APIs.

The following table lists the entities and the input types that you can specify to generate the corresponding outage reports.

Input Entity	Failure Type
Equipment	Card burn

Input Entity	Failure Type
Logical Device	Device/node failure
Logical Device Account	Information/registry of any existing failure
Physical Device	Device/node failure
Connectivity	Connectivity identifier
Pipe	Fiber, cable name, or ID
Device Interface	Physical ports with logical entities
Physical Port	Physical port

> **Note:**
>
> Outage report does not include the Trail and Facility pipes that are not terminated.

Generating Outage Impacts Report

To generate the outage impacts report:

1. In the **Operational Analysis** group, click **Outage Reports**.

   The Outage Impacts page appears.
2. From the **Entity** list, select the entity for which you want to generate an outage report.

   > **Note:**
   >
   > See Evaluating Outage Impacts for a list of entity and input types that you can select.
3. (Optional) If you know the name of the entity, enter the name in the text field.
4. (Optional) Enter **%** in the text field to select an entity from the most recent 10 entities that you searched for.
5. (Optional) Add qualifications to the search:
   a. Click the magnifying glass icon next to the text field to search.

      The search page for the corresponding entity appears.
   b. Enter search criteria in the desired fields. Some fields require that you enter text while other fields allow you to select from lists.
   c. Click **Search**.

      A table of search results appears in the Search Results section.
   d. Select the entity and click **OK**.

      The selected entity name appears in the text box.
6. Click **Retrieve Outage Report**.

   The system generates the outage impacts report in a Microsoft Excel file.

7. Click **Open** to view the report.

   See Understanding Outage Impacts Report for information about the data and worksheets in the outage impacts report.

8. (Optional) Click **Save** to save the report on your local system.

> **Note:**
>
> You can customize the outage data to be refreshed periodically. Contact your system administrator to customize the intervals at which you want the data refreshed.
>
> If you cannot view the latest changes in the report, contact your system administrator to refresh the data by using the **Reload** option, which is available only to the administrator.

Understanding Outage Impacts Report

The following table describes the data and worksheets in the outage impacts report.

Sheet	Description
Report Details	Provides the name and other details of the generated Outage Impacts report
ServiceImpacts	Provides the list of outage impacts that occurred according to the given inputs
Data Dictionary	Helps in understanding the report by providing the descriptions for columns in ServiceImpacts sheets

About Running Path Analysis in the Search Page

You can run path analysis in a Path Analysis Search page. The Path Analysis Search page provides you with advanced search criteria, using which you can refine the path analysis search. You can view the path results in the **Path Analysis Results** table or in the form of a schematic diagram in the **Topological View** tab, which enables you to view and understand all the related paths, nodes, connections, and pipes.

See "Running Path Analysis in the Path Analysis Search Page" for instructions on running path analysis.

You can access the Path Analysis Search page using either of the following options:

- From the UIM landing page, hover your mouse over the **Operational Analysis** icon and select **Path Analysis**.
- From the left navigation pane, under the **Operational Analysis** section, select **Path Analysis**.

See Path Analysis Search Page for more information.

Running Path Analysis in the Path Analysis Search Page

To perform path analysis from the Path Analysis Search page:

1. Open **UIM**.

2. In the navigation section, under **Operational Analysis**, click **Path Analysis**.

   The Path Analysis Search page appears.

3. Expand the **Source and Target** criteria.
4. In the **Source Type** list, select the type of entity that represents the source.
5. In the **Source ID** field, enter the ID of the source entity.

   To locate a source ID:

   a. Click the Browse icon.

      The Search page appears for the source entity.

   b. Enter the search criteria.

   c. Click **Search**.

      The search results appear.

   d. Select an entity.

   e. Click **OK**.

      The ID appears in the **Source ID** field.

   f. (Optional) To reset the **Source ID**, click the Clear icon.

6. (Optional) Specify information about an intermediate node in the **Intermediate Type** and **Intermediate ID** fields.
7. In the **Target Type** list, select the type of entity that represents the target.
8. In the **Target ID** field, enter the ID of the target entity.

   To locate a target ID:

   a. Click the Browse icon.

      The Search page appears for the source entity.

   b. Enter the search criteria.

   c. Click **Search**.

      The search results appear.

   d. Select an entity.

   e. Click **OK**.

      The ID appears in the **Target ID** field.

   f. (Optional) To reset the **Target ID**, click the Clear icon.

9. (Optional) Enter **General Criteria** and **Advanced Criteria**. See General Information Tab for the list of fields and their descriptions.
10. Click **Search**.

    The paths appear in the Path Analysis Results pane.

11. To view path analysis in a topology view, click the **Topological View** tab.

    See "Topological View of Path Analysis" for more information about the topological view.

12. (Optional) To reset the path analysis search criteria and the topological view, click **Reset**.
13. To view path analysis in a map view, click the **Map View** tab.

    See "Map View Tab of Path Analysis Search Page" for more information about the map view.

14. To download the path analysis results to a spreadsheet, click **Export** from the **Path Analysis Results** pane.

    The system generates the **PathResults** spreadsheet.

15. To download the list of network nodes that are included in the path analysis, click E**xport Analysis Data** from the **Path Analysis Results** pane.

    The system generates the **ExportAnalysisData** spreadsheet.

Selecting Networks for Path Analysis

To select the required networks for path analysis:

1. In the **Path Analysis Search** page, expand **Advanced Criteria** and then expand **Network**.

   The Network criteria panel appears.

2. Click **Filter By Network**.

   The Network Search page appears.

3. Enter the required details of search criteria.

4. Click **Search**.

   The **Search Results** pane appears with a list of networks.

5. Select the required network(s).

   > **Note:**
   >
   > You can select one or more networks from the search results.

6. Click **OK**.

   The list of selected network(s) appears in the **Network** criteria of the **Path Analysis Search** page.

7. (Optional) If you do not need any of the networks that are displayed, select them and click **Delete**.

   The selected networks are removed from the list in **Network** criteria.

Selecting Pipe/Connectivity Specification for Path Analysis

To select pipe or connectivity specifications for path analysis:

1. In the **Path Analysis Search** page, expand **Advanced Criteria** and then expand **Pipe/ Connectivity Specifications**.

   The Pipe/Connectivity Specification criteria panel appears.

2. Click **Filter By Specification**.

   The Specification Search page appears.

3. Enter the required details of search criteria.

> **Note:**
>
> The **Entity Type** is non-editable and the default value is **Pipe Specification**. This is because, in UIM, every connectivity specification is modelled as a pipe specification.

4. Click **Search**.

   A list of specifications appears in **Search Results**.

5. Select the required specification(s).

6. Click **OK**.

   The list of selected specification(s) appears in the **Pipe/Connectivity Specifications** criteria of the **Path Analysis Search** page.

7. (Optional) If you do not need any of the displayed specifications, select them and click **Delete**.

   The selected specifications are removed from the list in **Pipe/Connectivity Specifications** criteria.

Topological View of Path Analysis

You can view and analyze the operational paths in a topological diagram. To do so, you must search for a path by specifying a source entity and a target entity. In the topological view of path analysis, you can isolate any entity and view all the nodes connected to it.

The topology diagram changes based on the algorithm that you select, even for the same set of source and target entities. If you select Simple Linear and Mesh algorithms, the topology diagram displays all the paths between the source and target. If you select Full Mesh algorithm, the topology diagram displays all the paths you have searched so far and highlights the source and target from your latest search.

The topology diagram shows the following:

- All possible paths between source and target entities according to the search criteria
- Nodes or entities that are used to determine the paths
- Partial paths that are determined for feasibility analysis
- Pipes and connectivities connecting the entities in each path
- Locations of source and target entities
- Overview of the topology diagram, which is useful if the diagram has a large number of entities. The overview helps to find the exact location of your current entity or path.

Viewing and Analyzing Path Analysis in a Topological View

To view and analyze path analysis in topological view:

1. Perform path analysis by searching for paths between source and target entities.

   The **Path Analysis Results** pane appears.

2. Click the **Topological View** tab.

   The topological diagram appears with all path results between the source and the target entities.

> **Note:**
>
> The source and target entities are highlighted in the diagram.

3. Navigate to the **Display Path or Find Entity** pane by clicking the Restore Pane button on the top-right corner.
4. Select the required path in **Available Paths**.

   The selected path is highlighted in the topology diagram.
5. Select an entity in the **Entity Name** field.

   The selected entity is highlighted in the topology diagram.

> **Note:**
>
> You can view the information about the selected entity in the **Editor** pane on the right side.

6. Select an entity or pipe in the topology diagram and navigate to the **Editor** pane by clicking the Restore Pane button on the right side, to view details.

   The details of the selected entity or pipe appear in the **Editor** pane.

   a. Click the **ID** value to open the corresponding entity page.

   b. Click the **Network/Entity Location** value to open the corresponding network or entity location page.
7. To view the summary, right-click the entity and then click **View Summary**.

   The summary page of the selected entity appears.
8. To adjust zoom options, use the following options in the top-left corner:

   - Zoom to Fit
   - Zoom In
   - Zoom Out
9. In the **Overview** panel (in the bottom-right corner), check the overview of the topology diagram.
10. To isolate an entity, select the entity and then click the Isolate icon.

    The selected entity gets isolated from the topology diagram.
11. To find all the nodes connected to the isolated entity:

    a. Select the entity in the isolated pane.

    b. Hover the mouse over the round buttons.

    c. Click the **Additional Links** icon to find all the nodes connected to the entity.

Path Analysis Search Page

You use the Path Analysis Search page to refine the path analysis search using the advanced search criteria. The Path Analysis Search page has the following tabs:

- General Information tab
- Topological View tab
- Map View Tab of Path Analysis Search Page

General Information Tab

Use the General Information tab to enter the search criteria for path analysis.

This tab provides the following search criteria:

- Source and Target
- General Criteria
- Advanced Criteria

  In addition to other options, the advanced search criteria includes the following criteria panes:

  – Network

  – Pipe/Connectivity Specifications

Table 17-1 General Information tab of Path Analysis Search Page

Field	Description
Source Type	Select the source entity type. Valid values: • Equipment • Logical Device • Network/Entity Location • Physical Device • Place
Source ID	Enter the ID of the source entity. Click **Search** to search for the entity. If the source entity is part of a logical device, physical device, or equipment hierarchy, specify the highest-level entity in the hierarchy as the source.
Target Type	Select the target entity type. Valid values: • Equipment • Logical Device • Network/Entity Location • Physical Device • Place
Target ID	Enter the ID of the target entity if you know it or click the **Browse** icon to search for the entity. If the target entity is part of a logical device, physical device, or equipment hierarchy, specify the highest-level entity in the hierarchy as the target.

Table 17-1 (Cont.) General Information tab of Path Analysis Search Page

Field	Description
Intermediate Type	Select the entity type of the intermediate node that you want to include in the path found by path analysis. If the pipe has a pipe configuration that includes specification relationships for the Intermediate Node configuration item, you can select only from the types of those specifications. Valid values: • Equipment • Logical Device • Network/Entity Location • Physical Device • Place
Intermediate ID	Enter the ID of the entity to use as an intermediate node if you know it or click the **Browse** icon to search for the entity. The search is limited to entities of the type specified in the **Intermediate Type** field. If the pipe has a pipe configuration that defines specification relationships for the Intermediate Node configuration item, the search is further limited to entities based on those specifications. After you enter or select an ID, the **Intermediate Name** field is populated.
Rate Code	Enter the rate code associated with the connectivity. You can enter a wildcard value **%** to see all possible autosuggestions. When you enter a rate code, the system populates the corresponding **Bit Rate**.
Bit Rate	Enter a required bit rate to ensure that path analysis finds paths with sufficient capacity. For example, enter 64 for a 64 Kbps connection. This value is populated automatically after you enter the **Rate Code**. If a rate code is not provided, you can enter the value. If path analysis fails to find a path using the automatically entered bit rate, you can remove it and run path analysis again. If a path is returned, you can make design changes to accommodate it.
UOM	Select the unit of measure that applies to the bit rate. For example, choose Kbps if the bit rate was specified for that unit of measure.
Quantity	Enter the number of connections required. This field is used for fractional TDM services such as Fractional T1. For example, if you need 256 Kbps of capacity, this translates into four 64 Kbps channels. The default value is **1**.
Vendor	Select the vendor from the drop down menu.

Table 17-1 (Cont.) General Information tab of Path Analysis Search Page

Field	Description
Exclude Alarm Type	Select an option to exclude the corresponding alarm types from displaying based on their severity. The available options are: **Critical and Greater**, **Major and Greater**, and **Minor and Greater**. The severity of the alarms are as follows: • **Critical**: Severity 1 (Alert) • **Major**: Severity 2 (Critical) • **Minor**: Severity 3 (Error) • **Warning**: Severity 4 (Warning) • **Intermediate**: Severity 5 (Notice) • **Cleared**: Severity 5 (Notice) For example, if you select **Major and Greater**, the alarms of severity less than or equal to 2 will be excluded from path analysis.
Cost Effective Routing	Select a routing type that changes the values in **Filter By** and **Algorithm** fields accordingly. The available routing options are: **Equal Weights (Hops)** and **Least Cost**.
Custom Tuning	Use custom tuning to control the number of paths returned. If you want path analysis to find the simplest paths in the shortest time, select **Fastest**. If you want path analysis to find the paths in more time, select **Most Paths**. See Table 17-2 for the list of custom tuning types and their corresponding tuning percentage ranges. The default value is **Fastest**.
Algorithm	Select the algorithm to control the topological view of the path analysis. **Note**: The algorithm options change based on the **Cost Effective Routing** option you select.
Filter By Hops	The **Filter By** options change based on the **Cost Effective Routing** option you select. For the **Equal Weights (Hops)** routing option, enter the number of hops to search for the paths that have less than or equal to the required number of hops. The default value for this is **10**. If you enter **0** in the **Filter By Hops** field in the **Path Analysis Search** page, the value that you entered in the **TopologyProcess.properties** file takes precedence. For the **Least Cost** routing option, select the cost variable. The available options are: **Distance**, **Jitter**, and **Latency**.
K(# of Paths)	Select the number of paths that you want to view. This field is enabled only if **Algorithm** is either **Top K Shortest** or **Top K Cheapest**. These two **Algorithm** values populate based on the **Cost Effective Routing** option selected.

Table 17-1 (Cont.) General Information tab of Path Analysis Search Page

Field	Description
Same Wavelength or Frequency Channel	(Optional) Select **Same Wavelength or Frequency Channel** to find the paths with the same wavelength or frequency. If the paths with the same wavelength or frequency are not available, the application throws an error as follows: *Same wavelength or frequency fiber not found. Refine criteria and rerun Path Analysis.* **Note**: This filter is applicable only for connectivity enablement.
Network	Search and select the required networks for searching the paths. You can select one or more networks. The path analysis result displays all the paths with any of the selected networks. See "Selecting Networks for Path Analysis" for more information on selecting the network criteria.
Pipe/Connectivity Specifications	Search and select the required pipe/connectivity specifications for searching the paths. You can select one or more specifications. The path analysis result displays all the paths with any of the selected specifications. See "Selecting Pipe/Connectivity Specification for Path Analysis" for more information on selecting the pipe/connectivity specification criteria.

Table 17-2 Custom Tuning for Path Analysis

Custom Tuning Type	Tuning Percentage Range
Fastest	0-20
Fast	20-40
Balanced	40-60
More Paths	60-80
Most Paths	80-100

Topological View Tab of Path Analysis Search Page

This tab provides you with the topological view of path analysis. See "Topological View of Path Analysis" for information about topological view of path analysis.

Table 17-3 Topological View Tab of Path Analysis Search Page

Field	Description
Available Paths	Select a path from the list of available paths to highlight it in the topology diagram.
Entity Name	Select an entity from the list of entities available to highlight it in the topology diagram.

Table 17-3 (Cont.) Topological View Tab of Path Analysis Search Page

Field	Description
Force Directed Layout	Select to display all one-to-one connections between the nodes. This is the default layout.
Circular Layout	Select to display the nodes of the canvas diagram in a circle.
Grid Layout	Select to display the nodes of the canvas diagram in a grid. This layout has the pipe or connection crossings.
Control Panel icon	Clicking this icon displays the following icons: • **Zoom to Fit**: Click to automatically zoom the display to fit the canvas. • **Zoom In**: Click to zoom into the canvas. • **Zoom Out**: Click to zoom out from the canvas.
Overview section	Displays a rectangle around the portion of the diagram that you have zoomed in on. If you zoom out, the rectangle becomes larger until it disappears when the entire diagram is displayed in the main view.

Map View Tab of Path Analysis Search Page

The Map View tab helps you to view paths visually on a map. You cannot make changes from the Map View page, but you can use tools to control the map display.

Table 17-4 Map View Tab of Path Analysis Search Page

Field	Description
Zoom	Move the slider in the upper-left corner up or down to increase or decrease the zoom area of the map.
Legend	Click to view the map legend. This button is in the lower-right corner of the map
Scale	Displays the scale in both kilometers and miles. This button is located in the lower-left corner.
Pan	Click any of the pan directional arrows to move the map in the direction of the arrow. These buttons are located in the upper-left corner.

Table 17-4 (Cont.) Map View Tab of Path Analysis Search Page

Field	Description
Toolbar section	The Toolbar section enables you to view the map using the following options: • **Clear** option clears all markings that you added to the map using toolbar. • **Circle** option marks a circle with any required radius on the map and highlights all the nodes within the circle. • **Rectangle** option marks a rectangle on the map and highlights all the nodes within the rectangle. • **Redline** option enables you to draw any shape on the map to mark the corresponding area. • **Distance** option enables you to draw line(s) on the map and provides the actual distance of the line(s). You can draw connected lines that provides **Total Distance** of all the connected lines and **Sub Distance** of the latest line. • **Zoom** option enables you to select any area and zoom in to the map. • **Magnifier** option enables you to hover the mouse cursor over the map to enhance the view of an area. • **Overview Map** option enables you to view a small overview map, which initially appears zoomed out by a factor of three. The overview map appears in the lower-right corner of the map. • **Legend** option shows the list of icons and the corresponding entities. • **Print Map** option enables you to print the map. • **White Board** option enables you to enter any customized text on the map upon selecting an area or a location. The **Add Text** page provides multiple options to customize the text style.

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Working with Custom Entities

Oracle Communications Unified Inventory Management (UIM) includes two entity types that you can use when the default set of entities do not your meet your needs and when you do not want to extend UIM by defining entirely new entities:

- Custom Network Address entities represent network addresses required by your inventory that are not represented by default in UIM. See "Working with Custom Network Addresses" for more information.
- Custom Object entities represent resources that do not fit into one of the predefined entity types in UIM. See "Working with Custom Objects" for more information.

Working with Custom Network Addresses

Custom Network Address entities represent network addresses required by your inventory that are not represented by default in UIM. For example, your inventory may include Custom Network Address entities for ASNs (Autonomous System Numbers), VPN IDs, or IP addresses (if implemented prior to UIM natively supporting IP addresses).

You can include Custom Network Address entities in conditions, involvements, inventory groups, business interactions, and reservations. They can include hierarchies, and you can associate places with them. See "Working with Inventory Entities " and "Working with Roles" for more information.

You can assign or reference custom network addresses to site-type places, services, and pipe termination points.

See the following topics for more information about working with custom network addresses:

- Custom Network Address - New Page
- Custom Network Address - Information Page
- Custom Network Address Summary Page

Custom Network Address - New Page

You use the Custom Network Address - New page to create new custom network addresses.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Select a Custom Network Address specification. You can represent your custom network addresses in UIM without creating specifications in Design Studio; however, using specifications allows you to capture custom information about a custom network address. If you do not use a specification to define the new custom network address, you must manually enter a value in the **ID** field.
ID	If the entity specification requires a manually entered ID, enter a unique ID for the entity. Most entity specifications are defined in Design Studio so that IDs are generated automatically. The **ID** field for these specifications contains the text AUTOGENERATE.
Name	Enter a name for the custom network address.
Description	Enter a description of the custom network address.
Inventory Status	Displays the stage in the life cycle of the custom network address. This field is read only. See *UIM Concepts* for more information about inventory statuses.
Assignment Status	Displays the stage in the life cycle of a specific assignment of the custom network address to another entity. This field is read only. See *UIM Concepts* for more information about assignment statuses.

Related Topics

Creating Entities

Searching for Entities

Custom Network Address Summary Page

Custom Network Address - Information Page

You use the Custom Network Address - Information page to edit the information that appears in the Summary page Information section. Some data elements, such as the ID, cannot be changed after the entity is created.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Displays the specification used to define the custom network address. This field is read only.
ID	Displays the ID generated or entered when the entity was created. This field is read only.
Name	Edit the name for the custom network address.
Description	Edit the description of the custom network address.

Field	Description
Inventory Status	Displays the stage in the life cycle of the custom network address. This field is read only. See *UIM Concepts* for more information about inventory statuses.
Arrangement	(Visible only in data cooperation scenarios.) The cooperation model for the entity as defined by the parties or systems exchanging entity data.
Entity Name	(Visible only in data cooperation scenarios.) The name of the entity in the context specified in the **Other System** field.
Entity ID	(Visible only in data cooperation scenarios.) The identifier of the entity. This identifier is unique in the context specified in the **Other System** field.
Other System	(Visible only in data cooperation scenarios.) The external system or domain that is participating in the data cooperation.
Assignment Status	Displays the stage in the life cycle of a specific assignment of the custom network address to another entity. This field is read only. See *UIM Concepts* for more information about assignment statuses.

Related Topics

Creating Entities

Searching for Entities

Custom Network Address Summary Page

Custom Network Address Summary Page

You use the Custom Network Address Summary page to define the content for a Custom Network Address entity. The page is arranged into tabs, each of which is used for a different purpose:

- General Information Tab
- Associated Resources Tab
- Consumers Tab
- Groups and Infrastructure Tab

See the following topics for more information about summary pages:

- Related Pages Menu
- Actions Menu

See "Entity Summary Page" for information about Summary page fields that are common among all entities.

Related Topics

Searching for Entities

General Information Tab

You use the **General Information** tab to view basic information about the custom network address and to view and maintain the custom network address hierarchy.

Section	Description
Custom Network Address Information	Displays basic information about the entity, most of which was defined when you created the entity. Click **Edit** to change this information. Some data elements, such as the ID, cannot be changed after the entity is created. See "Creating Entities " and "Custom Network Address - New Page" for more information. Click **Other System** to view fields related to systems with which UIM is cooperating. These fields are visible by default when populated and hidden by default when not populated.
Custom Network Address Hierarchy	Displays the entities included in the custom network address hierarchy. Right-click on the custom network address and select **Add Child** to associate a child custom network address.

Associated Resources Tab

You use the **Associated Resources** tab to view information about the parent custom network address, network nodes, and custom involvements of the custom network address.

Section	Description
Parent Custom Network Address	Displays any associations with a parent custom network address. See "Adding Parent Entities" for information about creating new associations.
Network Nodes	Displays any networks with which a custom network address is associated. The association occurs when you select a custom network address to be represented by a node or element in a network. The same entity can be represented by nodes in different networks. For each network association, you can see the network name, ID, network description, node name, and node description. Click the ID to view the Network Summary page.
Custom Involvements	Displays any custom associations defined for the custom network address with entities that are not otherwise associated. See "Working with Custom Involvements" for more information.

Consumers Tab

You use the **Consumers** tab to view information about assignments and business interactions of the custom network address.

Section	Description
Assignments	List the configurations and design versions to which the custom network address has been assigned. For each assignment, you can see the entity to which the assignment has been made, that entity's type, and the start and end dates.
Business Interactions	Displays any business interactions with which the custom network address is associated. See "Working with Business Interactions" for more information.

Groups and Infrastructure Tab

You use the **Groups and Infrastructure** tab to view information about the inventory groups, parties, and places associated with the custom network address.

Section	Description
Inventory Groups	Displays any inventory groups to which the custom network address is associated. You use inventory groups to organize entities for a particular purpose. The fields that appear in the Inventory Group section are common among multiple entities. See "Entity Summary Page" for more information. See "Adding an Entity to an Inventory Group from the Entity Summary Page " for information about associating entities with an inventory group.
Parties	Displays any parties that are associated with the custom network address. You can associate parties to custom network addresses to identify related individuals or organizations. If the parties have roles assigned to them, you can specify the role that is relevant to the association. The fields that appear in the Parties section are common among multiple entities. See "Entity Summary Page" for more information. See "Associating Parties to Entities" and "Deleting Party Associations from Entities" for information about managing party associations.
Places	Displays any places that are associated with the custom network address. The fields that appear in the Places section are common among multiple entities. See "Entity Summary Page" for more information. See "Associating Places to Entities" for information about creating new place associations.

Working with Custom Objects

Custom Object entities represent items that do not fit into one of the predefined entity types in UIM. For example, your inventory may include quality of service (QoS) standards or static routes.

You can include Custom Object entities in conditions, involvements, inventory groups, business interactions, and reservations. You can assign or reference them in configuration items. They can include hierarchies, and you can associate places with them. Custom Object entities can be associated to network nodes and edges. The Custom Object Summary page lists the networks with which the custom object is associated.

See the following topics for more information about working with custom objects:

- Custom Object - New Page
- Custom Object - Information Page
- Custom Object Summary Page

Custom Object - New Page

You use the Custom Object - New page to create new custom objects.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Select a Custom Object specification. You can represent your custom objects in UIM without creating specifications in Design Studio; however, using specifications allows you to capture custom information about the objects. If you do not use a specification to define the new custom object, you must manually enter a value in the **ID** field.
ID	If the entity specification requires a manually entered ID, enter a unique ID for the entity. Most entity specifications are defined in Design Studio so that IDs are generated automatically. The **ID** field for these specifications contains the text AUTOGENERATE.
Name	Enter a name for the custom object.
Description	Enter a description of the custom object.
Inventory Status	Displays the stage in the life cycle of the custom object. This field is read only. See *UIM Concepts* for more information about inventory statuses.
Assignment Status	Displays the stage in the life cycle of a specific assignment of the custom object to another entity. This field is read only. See *UIM Concepts* for more information about assignment statuses.

Related Topics

Creating Entities

Custom Object Summary Page

Working with Custom Objects

Custom Object - Information Page

You use the Custom Object - Information page to edit the information that appears in the Summary page Information section. Some data elements, such as the ID, cannot be changed after the entity is created.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Displays the specification used to define the custom object. This field is read only.
ID	Displays the ID generated or entered when the entity was created. This field is read only.
Name	Edit the name for the custom object.
Description	Edit the description of the custom object.
Inventory Status	Displays the stage in the life cycle of the custom object. This field is read only. See *UIM Concepts* for more information about inventory statuses.
Assignment Status	Displays the stage in the life cycle of a specific assignment of the custom object to another entity. This field is read only. See *UIM Concepts* for more information about assignment statuses.
Arrangement	(Visible only in data cooperation scenarios.) The cooperation model for the entity as defined by the parties or systems exchanging entity data.
Entity Name	(Visible only in data cooperation scenarios.) The name of the entity in the context specified in the **Other System** field.
Entity ID	(Visible only in data cooperation scenarios.) The identifier of the entity. This identifier is unique in the context specified in the **Other System** field.
Other System	(Visible only in data cooperation scenarios.) The external system or domain that is participating in the data cooperation.

Related Topics

Creating Entities

Custom Object Summary Page

Working with Custom Objects

Custom Object Summary Page

You use the Custom Object Summary page to define the content for a Custom Object entity. The page is arranged into tabs, each of which is used for a different purpose:

- General Information Tab
- Associated Resources Tab
- Consumers Tab
- Groups and Infrastructure Tab

See the following topics for more information about summary pages:

- Related Pages Menu
- Actions Menu

See "Entity Summary Page" for information about Summary page fields that are common among all entities.

Related Topics

Working with Custom Objects

General Information Tab

You use the **General Information** tab to view basic information about the custom object and to view and maintain the custom object hierarchy.

Section	Description
Custom Object Information	Displays basic information about the entity, most of which was defined when you created the entity. Click **Edit** to change this information. Some data elements, such as the ID, cannot be changed after the entity is created. See "Creating Entities " and "Custom Object - New Page" for more information. Click **Other System** to view fields related to systems with which UIM is cooperating. These fields are visible by default when populated and hidden by default when not populated.
Custom Object Hierarchy	Displays the entities included in the custom object hierarchy. Right-click on the custom object and select **Add Child** to associate a child custom object.

Associated Resources Tab

You use the **Associated Resources** tab to view information about the parent custom object, network nodes, network edges, and custom involvements of the custom object.

Subtab	Description
Parent Custom Object	Displays any associations with a parent custom object. See "Adding Parent Entities" for information about creating new associations.
Network Nodes	Displays any network nodes with which a custom object is associated. The association occurs when you select a custom object to be represented by a node or element in a network. The same entity can be represented by nodes in different networks. For each network association, you can see the network name, network description, node name, and node description. Click the ID to view the Network Summary page.
Network Edges	Displays any network edges with which a custom object is associated. The association occurs when you select a custom object to be represented by an edge in a network. The same entity can be represented by edges in different networks. For each network association, you can see the network name, network description, edge name, and edge description. Click the ID to view the Network Summary page.
Custom Involvements	Displays any custom associations defined for the custom object with entities that are not otherwise associated. See "Working with Custom Involvements" for more information.

Consumers Tab

You use the **Consumers** tab to view any business interactions with which the custom object is associated. See "Working with Business Interactions" for more information.

Groups and Infrastructure Tab

You use the **Groups and Infrastructure** tab to view information about the inventory groups, places, roles, and parties associated with the custom object.

Subtab	Description
Inventory Groups	Displays any inventory groups to which the custom object is associated. You use inventory groups to organize entities for a particular purpose. The fields that appear in the Inventory Groups section are common among multiple entities. See "Entity Summary Page" for more information. See "Adding an Entity to an Inventory Group from the Entity Summary Page " for information about associating entities with an inventory group.
Places	Displays any Place entities that are associated with the custom object. The fields that appear in the Places section are common among multiple entities. See "Entity Summary Page" for more information. See "Associating Places to Entities" for information about creating new place associations.
Roles	Displays any roles that are associated with the custom object. You can associate roles with entities to define the functions they perform in your inventory. An entity can have multiple roles simultaneously, and its roles can change over time. See "Working with Roles" for more information.
Parties	Displays any parties that are associated with the custom object. You can associate parties to custom objects to identify related individuals or organizations. If the parties have roles assigned to them, you can specify the role that is relevant to the association. The fields that appear in the Parties section are common among multiple entities. See "Entity Summary Page" for more information. See "Associating Parties to Entities" and "Deleting Party Associations from Entities" for information about managing party associations.

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Working with Media Streams

In Oracle Communications Unified Inventory Management (UIM), media streams represent content such as audio or video media delivered over cable, satellite, radio, or streaming IP.

You use Media Stream entities to represent media content and to manage its delivery in UIM. For example, you can use Media Stream entities to represent provisionable or subscription video services such as tiered services and a la carte packages.

Logical devices control how users gain access to the media streams they subscribe to. To represent this relationship in UIM, you associate media streams to logical devices.

Media Stream entities include many of the same features as other entities. You can reserve media streams, assign conditions to them, and include them in business interactions. UIM manages media stream life cycles the same way it manages other resource entities.

See the following topics for more information about working with media streams:

- Associating Media Streams to Logical Devices
- Removing Logical Device Associations from Media Streams
- Media Stream - New Page
- Media Stream - Information Page
- Media Stream Summary Page

Associating Media Streams to Logical Devices

You can associate media streams to logical devices from Media Stream Summary pages. A media stream can be associated to any number of logical devices, and a logical device can be associated with any number of media streams. When you associate a media stream to a logical device, you specify a value for the media handle, which provides more information on their association.

You can also associate a media stream to a logical device from a Logical Device Summary page. See "Associating Logical Devices to Media Streams" for more information.

To associate a media stream to a logical device:

1. Open the Media Stream Summary page of a media stream that you want to associate to a logical device.
2. In the Granted by Logical Devices section, click **Add**.

   The Associate Logical Device dialog box appears, containing a search section.
3. Search for or create a Logical Device entity.
4. In the Search Results section, select a Logical Device entity.
5. Click **OK**.

   The Associate Logical Device dialog box closes. The link to the logical device appears in the Granted by Logical Devices section.
6. Click **Edit** in the Granted by Logical Devices section toolbar.

One or more **Media Handle** fields become available and the **Save** button is enabled.

7. In the **Media Handle** fields, enter values for the media handles.
8. Click **Save**.

Related Topics

Removing Logical Device Associations from Media Streams

Removing Logical Device Associations from Media Streams

You can remove a logical device association from a media stream. Because media streams can have any number of associations to logical devices, you do not have to unassociate a logical device before adding a new association.

The association can also be removed from the Summary page of the logical device.

To remove a logical device association from a media stream:

1. Open the Media Stream Summary page of a media stream from which you want to remove a logical device association.
2. In the Granted by Logical Devices section, select the logical device that you want to unassociate from the media stream.
3. Click **Delete**.

   The association is removed and the link to the logical device is removed from the Granted by Logical Devices section.

Related Topics

Removing Media Stream Associations from Logical Devices

Media Stream - New Page

You use the Media Stream - New page to create new media streams.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Select the Media Stream specification that you want to use for the entities you create. A media stream represents content such as audio or video media delivered over cable, satellite, radio, or streaming IP. See *UIM Concepts* for more information about media streams.

Field	Description
ID	If the entity specification requires a manually entered ID, enter a unique ID for the entity. Most entity specifications are defined in Design Studio so that IDs are generated automatically. The **ID** field for these specifications contains the text AUTOGENERATE.
Name	Enter a name for the media stream.
Description	Enter a description of the media stream.
Inventory Status	Displays the stage in the life cycle of the media stream. This field is read only. See *UIM Concepts* for more information about inventory statuses.
Assignment Status	Displays the stage in the life cycle of a specific assignment of the media stream to another entity. This field is read only. See *UIM Concepts* for more information about assignment statuses.

Related Topics

Media Stream Summary Page

Creating Entities

Searching for Entities

Media Stream - Information Page

You use the Media Stream - Information page to edit the information that appears in the Summary page Information section. Some data elements, such as the ID, cannot be changed after the entity is created.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Displays the specification used to define the media stream. This field is read only.
ID	Displays the ID generated or entered when the entity was created. This field is read only.
Name	Edit the name for the media stream.
Description	Edit the description of the media stream.
Inventory Status	Displays the stage in the life cycle of the media stream. This field is read only. See *UIM Concepts* for more information about inventory statuses.
Assignment Status	Displays the stage in the life cycle of a specific assignment of the media stream to another entity. This field is read only. See *UIM Concepts* for more information about assignment statuses.

Related Topics

Media Stream Summary Page

Creating Entities

Searching for Entities

Media Stream Summary Page

You use the Media Stream Summary page to define the content for a Media Stream entity.

See the following topics for more information about summary pages:

- Related Pages Menu
- Actions Menu

> **Note:**
>
> The sections listed in the following table are specific to the Media Stream Summary page. See "Entity Summary Page" for information about Summary page fields that are common among all entities.

Section	Description
Information	Displays basic information about the entity, most of which was defined when you created the entity. Click **Edit** to change this information. Some data elements, such as the ID, cannot be changed after the entity is created. See "Creating Entities " and "Media Stream - New Page" for more information.
Granted by Logical Devices	Displays any logical devices with which the media stream is associated.
Business Interactions	Displays any business interactions with which the media stream is associated. See "Working with Business Interactions" for more information.

Related Topics

Searching for Entities

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Working with the Inventory Topology

In UIM, the entities are interrelated and you can view this in a Topology diagram using Unified Topology for Inventory and Automation (UTIA).

In the topology diagram from UTIA, the connections between nodes or entities are shown as edges. You can search for a network and customize your search using the **Create New** search pane from UTIA. You can further search for the required entities or nodes within the network using the **Search** option. See *Unified Topology for Inventory and Automation User's Guide* for more information.

The following types of entities are supported in UTIA:

- Equipment
- Logical Device
- Physical Device
- Pipe
- Connectivity
- Place
- Network Location
- Service Location
- Network
- Service

You can access UTIA from UIM using either of the following options:

- In the **Inventory** - **Resources** group of the navigation section, click **Topology**.

  The UTIA home page opens.

- From the Summary page of an entity:

  1. Open the Summary page of the entity for which you want to view the topology.
  2. Click **Topology**.

     The topology diagram opens in UTIA.

     See *Unified Topology for Inventory and Automation User's Guide* for more information on using UTIA.

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UIM NFV Orchestration

You use the NFV Orchestration functionality of Oracle Communications Unified Inventory Management (UIM) to model network services, Virtual Network Functions (VNFs), and Physical Network Functions (PNFs). You also use this functionality to manage the life cycles of network services and VNFs.. See "Getting Started with Unified Inventory Management" for more information about how UIM manages your network resources and their life cycles.

> **Note:**
>
> As much as possible, use the NFV Orchestration pages to invoke life cycle actions. Updating the entities using UIM inventory pages requires you to correctly sequence the updates in the inventory data and any integrated southbound network systems such as the VIM and Element Management System (EMS).

See the following topics for more information about NFV Orchestration:

- Working with Orchestration Requests
- Working with Network Services
- Working with Virtual Network Functions
- Working with Virtual Deployment Units
- Working with Descriptors

Working with Orchestration Requests

Orchestration requests represent arrangements that require actions on entities in the inventory. Orchestration requests enable you to implement custom functionality by using extension points. All the actions taken in the context of an orchestration request are made effective in the inventory when the orchestration request is completed. When you create and send an orchestration request, NFV Orchestration performs the actions that are associated with the custom functionality that you implemented by using ruleset extension points.

When you create and instantiate a network service, NFV Orchestration generates orchestration requests for network services, VNF, and PNFs.

Orchestration requests share many of the same features as business interactions. See "Working with Business Interactions" for information about business interactions.

See the following topics for more information about working with orchestration requests:

- Creating Orchestration Requests
- Sending Orchestration Requests

Creating Orchestration Requests

You create orchestration requests to extend the NFV Orchestration functionality.

To create orchestration requests:

1. In the **NFV Orchestration** group of the navigation section, in the **Orchestration** subgroup, click the **Orchestration Requests** link.

   The search page for Orchestration Requests appears.

2. In the Search Results section, click **Create**.

   The Orchestration Request - New page appears.

   The New page includes required fields that are marked with asterisks.

3. In the **Specification** list, select the specification you want to use for the orchestration request.

4. If the **ID** field does not contain the text **AUTOGENERATE**, enter a unique ID for the request.

   By default, most request IDs are generated automatically. Whether the ID is generated automatically or entered manually, it cannot be changed after the request is created.

5. Enter information into all fields marked with asterisks.

6. (Optional) In the **Description** field, enter a description for the new request. Entering a description is optional, but useful in managing your inventory.

7. (Optional) Enter information into non-required fields.

8. (Optional) To create an additional request based on the same specification, click **Save and Add Another**.

9. Click **Save and Continue**.

   The Summary page for the orchestration request you created appears. If you created multiple requests, you see the Summary page for the last request you created. See "Working in Entity Summary Pages" for more information.

Related Topics

Orchestration Request - New Page

Sending Orchestration Requests

Sending Orchestration Requests

You send an orchestration request when all changes included in it have been made and are ready to be processed. The changes become effective when the orchestration request is completed. The service configurations included in the orchestration request are completed when the orchestration request is completed.

When you send an orchestration request, NFV Orchestration performs the actions associated with the custom functionality that you implemented by using ruleset extension points. See *UIM Concepts* and *UIM Developer's Guide* for more information about rulesets and extension points.

> **Note:**
>
> You cannot reopen an orchestration request after you have sent it.

To send orchestration requests:

1. Open the Summary page of the orchestration request that you want to send.

   Alternatively, search for the orchestration request and select it in the search results.

   The Information page for the orchestration request appears.

2. From the **Actions** menu, select **Send Request**.

   NFV Orchestration invokes the custom extension logic that you associated with this action and displays any resulting error messages in the upper part of the page. If no problems are found, no messages are displayed.

   Depending on the custom extension functionality that you associated with the send request action, the relevant entities in the orchestration request are created, deleted or modified in the inventory.

   You can also associate custom extension functionality with the other actions in the **Actions** menu.

Related Topics

Orchestration Request Details Page

Creating Orchestration Requests

Orchestration Request - New Page

You use the Orchestration Request - New page to create new orchestration requests.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the orchestration request. In Design Studio, you create the specification and add characteristics, which are displayed as fields in the pages.

Field	Description
Specification	Select a specification to use to define the new orchestration request.
ID	This field displays **AUTOGENERATE** and is read only. By default, most entity specifications are defined in Design Studio so that IDs are generated automatically.
Name	Enter the name of the new orchestration request.
Other System	(Used only in data cooperation scenarios.) Click to enter information about a cooperating system.
Entity Name	(Used only in data cooperation scenarios.) The name of the entity in the context specified in the **System Name** field.
Entity ID	(Used only in data cooperation scenarios.) The identifier of the entity. This identifier is unique in the context specified in the **System Name** field.
System Name	(Used only in data cooperation scenarios.) The name of the external system or domain that is participating in data cooperation.
Effective Date	Enter the date on which the orchestration request becomes active.
Description	(Optional) Enter a description of the orchestration request.

Field	Description
Status	Displays the current orchestration request status. Orchestration requests in UIM share the same life cycle as business interactions. See *UIM Concepts* for information about business interaction life cycles and statuses.

Related Topics

Creating Orchestration Requests

Creating Entities

Searching for Entities

Orchestration Request Details Page

You use the Orchestration Request Details page to view details about orchestration requests.

> **Note:**
>
> The sections listed in the following table are specific to the Orchestration Request Details page. See "Entity Summary Page" for information about Summary page fields that are common among all entities.

Section	Description
Orchestration Request Information	Displays basic information about the orchestration request, most of which was defined when you created the request. Click **Edit** to change this information. Some data elements, such as the ID, cannot be changed after the request is created. See "Creating Entities " and "Orchestration Request - New Page" for more information. Click **Other System** to view fields related to systems with which UIM is cooperating. These fields are visible by default when populated and are hidden by default when not populated.
Orchestration Request Hierarchy	Displays a tree view of the orchestration request and any child orchestration requests. Orchestration Requests can include hierarchies of other orchestration requests. Use the **View** menu to control how the orchestration requests appear in the Orchestration Request Hierarchy section. See "Working with Entity Hierarchies" for more information. Right-click the orchestration request and click **Add Child** to add a child orchestration request.
Orchestration Request Items	Do one of the following: • Click **Items** to add an item to the orchestration request. You can search for existing items or create and add new items. See "Modifying Entities from the Business Interaction Summary Page" for more information. • Select a row and click **Delete** to remove the item from the orchestration request. See "Deleting Items from Business Interactions" for more information. **Note**: You cannot add or delete items for the orchestration requests that are provided with NFV Orchestration. You can do these tasks only for those orchestration requests that you create.

Section	Description
Transactions Log	Displays a list of inputs you provide for orchestration requests. Each row includes a hyperlinked sequence number, a hyperlinked transaction name, and a timestamp. Click the sequence number or the transaction name to view its full contents in the Transaction Summary page.
Events	Displays a list of the intermediate processes (including their statuses and timestamps) that are run to complete the NFV life-cycle actions.

Related Topics

Creating Orchestration Requests

Sending Orchestration Requests

Searching for Entities

Orchestration Request Information Page

You use the Orchestration Request Information page to edit the information that appears in the Information section of the Orchestration Request Details page. Some data elements, such as the ID, cannot be changed after the orchestration request is created.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the orchestration request. In Design Studio, you create the specification and add characteristics, which are displayed as fields in the pages.

Field	Description
Specification	Displays the name of the specification used to define the orchestration request.
Name	Edit the name of the orchestration request.
ID	Displays the ID generated for the request. This field is read only.
Other System	(Used only in data cooperation scenarios.) Click to enter information about a cooperating system.
Entity Name	(Used only in data cooperation scenarios.) The name of the entity in the context specified in the **System Name** field.
Entity ID	(Used only in data cooperation scenarios.) The identifier of the entity. This identifier is unique in the context specified in the **System Name** field.
System Name	(Used only in data cooperation scenarios.) The name of the external system or domain that is participating in data cooperation.
Effective Date	Edit the date on which the orchestration request becomes active.
Description	(Optional) Edit the description of the orchestration request.
Status	Displays the current status of the orchestration request. See *UIM Concepts* for information about business interaction life cycles and statuses.

Related Topics

Creating Orchestration Requests

Sending Orchestration Requests

Searching for Entities

Working with Network Services

You can create and instantiate network services for the network function that you want to implement. When you instantiate network services, the constituent VNFs are instantiated in your data center. Optionally, you can also add Physical Network Functions (PNFs) in a network service.

See *UIM NFV Orchestration Implementation Guide* for more information.

> **Note:**
>
> Network services in NFV Orchestration are not the same as the network services that exist in the context of UIM packet connectivity.

See the following topics for more information about working with network services:

- Creating Network Services
- Instantiating Network Services
- Terminating Network Services
- Adding VNFs to Network Services
- Removing VNFs from Network Services
- Adding Endpoints to Network Services
- Removing Endpoints from Network Services
- Adding PNFs to Network Services
- Removing PNFs from Network Services
- Canceling Network Services

Creating Network Services

When you create network services, you can either save the network services for later use or instantiate the network services instantly.

To create network services:

1. In the **NFV Orchestration** group of the navigation section, in the **Orchestration** subgroup, click the **Network Services** link.

   The search page for Network Services appears.

2. In the Search Results section, click **Create**.

   The Network Service - New page appears.

The New page includes required fields that are marked with asterisks.

3. In the **Descriptor** list, select the network service descriptor that you want to use for the network service.
4. In the **Service Flavor** list, select the service flavor that you want to use for the network service. The service flavors that this list displays are driven by the descriptor that you chose.
5. If the **ID** field does not contain the text **AUTOGENERATE**, enter a unique ID for the request.

   By default, most request IDs are generated automatically. Whether the ID is generated automatically or entered manually, it cannot be changed after the network service is created.
6. In the **Name** field, enter a name for the network service.
7. In the **VNF FG Descriptor** list, select the VNF forwarding graph descriptor that you want to use for the network service.
8. Enter information into all fields marked with asterisks.
9. (Optional) Enter information into non-required fields.
10. Click the **Endpoints** tab and do the following:

> **Note:**
>
> A network service requires at least one endpoint to be included.

   a. In the **Specification** list, select the endpoint specification that you want to use for the network service.
   b. If the **ID** field does not contain the text **AUTOGENERATE**, enter a unique ID for the endpoint.
   c. If the **Name** field does not contain the text **AUTOGENERATE**, enter a name for the endpoint.
   d. (Optional) In the **Service Location** field, enter the location to which the endpoint relates.
   e. From the **Reference** list, select the endpoint that you defined in the network service descriptor.
   f. (Optional) Enter information into non-required fields.
   g. (Optional) Click the plus button to add another endpoint to the network service and enter information into all the required fields.

> **Note:**
>
> You can add up to 10 endpoints to your network services in the user interface. To add more than 10 endpoints to your network service, use the REST API for adding endpoints to network services. See *UIM NFV Orchestration Implementation Guide* for information about REST APIs.

11. Click the **VNFs** tab and do the following:

> **Note:**
>
> A network service requires at least one VNF to be included.

a. In the **Descriptor** list, select the VNF descriptor that you want to use. The VNF descriptors that this list displays are driven by the network service descriptor and the service flavor that you chose for the network service in the Network Service section.

b. If the **ID** field does not contain the text **AUTOGENERATE**, enter a unique ID for the request.

c. In the **Version** list, select the version of VNF image that you want to use for the VNF. The versions that this list displays are driven by the VNF descriptor that you chose.

d. In the **Deployment Flavor** list, select the deployment flavor that you want to use for the VNF. The deployment flavors that this list displays are driven by the VNF descriptor that you chose.

e. Enter information into all fields marked with asterisks.

f. (Optional) Enter information into non-required fields.

g. (Optional) Click the plus button to add another VNF to the network service and enter information into all the required fields.

> **Note:**
>
> You can add up to 10 VNFs to your network services in the user interface. To add more than 10 VNFs to your network service, use the REST API for adding VNFs to network services. See *UIM NFV Orchestration Implementation Guide* for information about REST APIs.

12. (Optional) Click the **PNFs** tab and do the following:

    a. In the **Name** field, enter the name of the PNF that you want to add to the network service.

    The name value is used to search for a matching PNF. If no matching PNF is found, you must create the PNF by registering the PNF using a REST API. See the *UIM NFV Orchestration Implementation Guide* for information about registering PNFs.

    b. (Optional) Click the plus button to add another PNF to the network service.

> **Note:**
>
> You can add up to 10 PNFs to your network services in the user interface. To add more than 10 PNFs, use the REST API for adding PNFs to network services. See *UIM NFV Orchestration Implementation Guide* for information about REST APIs.

13. Do one of the following:

    - To create the network service and save it for later use, click **Save and Continue**.

The Network Service - Summary page for the network service you created appears. After you create the network service, you can instantiate it from the Network Service - Summary page.

- To instantiate the network service immediately, click **Save and Instantiate**.

  At the top of the Network Service Summary page, a message appears informing you that the network service has been submitted for instantiation. In the Network Service Summary page, the **Status** field displays a status of Pending and a progress bar appears, which indicates that the process is in progress.

  When the instantiation process is in progress, messages appear at the top of the Network Service Summary page informing you about the statuses and timestamps of the various intermediate processes that are run to instantiate the network service. After the process is completed successfully, the **Status** field displays a status of In Service.

  Based on the configurations that the VNFs and PNFs in the network service require, instantiating the network service may take some time to complete. In UIM NFV Orchestration and in your VIM, the resources may not be created immediately after you complete the instantiation request.

See *UIM NFV Orchestration Implementation Guide* for information about what happens during and after the instantiation of a network service.

Related Topics

Network Service - New Page

Instantiating Network Services

Terminating Network Services

Instantiating Network Services

You instantiate network services to deploy the constituent VNFs and configure the constituent PNFs in the network services. When you instantiate network services, all the resources that are allocated to the constituent VNFs and the PNFs are consumed by the network service. You can instantiate network services that you have already created and saved.

Before you instantiate network services, ensure that your Virtual Infrastructure Manager (VIM) is registered and that the data center resources that are managed by your VIM are discovered. If your network services include PNFs, register the PNFs with NFV Orchestration. See *UIM NFV Orchestration Implementation Guide* for information about registering your VIM, registering PNFs, and discovering your VIM resources.

To instantiate network services:

1. If you have already created and saved a network service that you want to instantiate, open the summary page of the network service. Otherwise, create the network service. See "Creating Network Services" for details about creating network services.

   Alternatively, search for the network service and select it in the search results.

   The summary page for the network service appears.

2. On the summary page of the network service, from the **Actions** menu, select **Instantiate**.

   At the top of the Network Service Summary page, a message appears informing you that the network service has been submitted for instantiation. In the Network Service Summary page, the **Status** field displays a status of Pending and a progress bar appears, which indicates that the process is in progress.

When the instantiation process is in progress, messages appear at the top of the Network Service Summary page informing you about the statuses and timestamps of the various intermediate processes that are run to instantiate the network service. After the process is completed successfully, the **Status** field displays a status of In Service.

Based on the configurations that the VNFs and PNFs in the network service require, instantiating the network service may take some time to complete. In UIM NFV Orchestration and in your VIM, the resources may not be created immediately after you complete the instantiation request.

See *UIM NFV Orchestration Implementation Guide* for information about what happens during and after the instantiation of a network service.

Related Topics

Network Service Summary Page

Terminating Network Services

Terminating Network Services

You terminate a network service to undeploy all the constituent VNFs in the network service. When you terminate a network service, all the resources that were allocated to the constituent VNFs and the PNFs are released and become available for consumption by other network services.

To terminate network services:

1. Open the summary page of the network service that you want to terminate.

   Alternatively, search for the network service and select it in the search results.

   The summary page for the network service appears.

2. From the **Actions** menu, select **Terminate**.

   At the top of the Network Service Summary page, a message appears informing you that the network service has been submitted for termination. In the Network Service Summary page, the **Status** field displays a status of In Service and a progress bar appears, which indicates that the process is in progress.

   When the termination process is in progress, messages appear at the top of the Network Service Summary page informing you about the statuses and timestamps of the various intermediate processes that are run to terminate the network service. After the process is completed successfully, the **Status** field displays a status of Disconnected.

   Terminating network services may take some time to complete. In UIM NFV Orchestration and in your VIM, the resources may not be released immediately after you complete the request for termination.

   See *UIM NFV Orchestration Implementation Guide* for information about what happens after the termination of a network service.

Related Topics

Network Service Summary Page

Instantiating Network Services

Adding VNFs to Network Services

You add VNFs to a network service when you create the network service. Every network service requires at least one VNF to be included in it. You can add multiple VNFs to a network service.

> **Note:**
>
> Before you instantiate a network service, you can add and remove constituent VNFs in a network service by using the Network Service Summary pages. After a network service is instantiated, you can add VNFs to the network service by using the scale options only. See "Scaling Virtual Network Functions" for information about scaling VNFs.

To add VNFs to a network service:

1. Open the summary page of the network service to which you want to add a VNF.

   Alternatively, search for the network service and select it in the search results.

   The summary page for the network service appears.
2. Click **Edit**.

   The Network Service Edit page appears.
3. Click the **VNFs** tab.
4. Click the plus button.
5. In the **Descriptor** list, select the descriptor that you want to use for the VNF.
6. If the **ID** field does not contain the text **AUTOGENERATE**, enter a unique ID for the request.
7. In the **Name** field, enter a name for the VNF.
8. In the **Version** list, select the version of VNF image that you want to use for the VNF.
9. In the **Deployment Flavor** list, select the deployment flavor that you want to use for the VNF.
10. Enter information into all the required fields.
11. (Optional) Enter information into non-required fields.
12. Do one of the following:
    - To save the network service for later use, click **Save and Continue**.

      The Network Service Summary page for the network service you created appears.
    - To instantiate the network service immediately, click **Save and Instantiate**.

      At the top of the Network Service Summary page, a message appears informing you that the network service has been submitted for instantiation. In the Network Service Summary page, the **Status** field displays a status of Pending and a progress bar appears, which indicates that the process is in progress.

      When the instantiation process is in progress, messages appear at the top of the Network Service Summary page informing you about the statuses and timestamps of

the various intermediate processes that are run to instantiate the network service. After the process is completed successfully, the **Status** field displays a status of In Service.

Related Topics

Network Service - New Page

Network Service Summary Page

Removing VNFs from Network Services

Removing VNFs from Network Services

Before you instantiate a network service, you can remove any VNF that you have already added to your network service and saved the network service.

> **Note:**
>
> You cannot remove VNFs from a network service that is already instantiated. To disassociate VNFs from a network service that is already instantiated, use the scale options. See "Scaling Virtual Network Functions" for information about scaling VNFs.

To remove VNFs from a network service:

1. Open the summary page of the network service.

   Alternatively, search for the network service and select it in the search results.

   The summary page for the network service appears.
2. Click the **VNFs** tab.
3. Click the delete button for the VNF that you want to remove.

   NFV Orchestration removes the VNF from the network service and displays the Network Service Summary page for the network service.
4. Do one of the following:
   - To save the network service for later use, click **Save and Continue**.

     The Network Service Summary page for the network service you created appears.
   - To instantiate the network service immediately, click **Save and Instantiate**.

     At the top of the Network Service Summary page, a message appears informing you that the network service has been submitted for instantiation. In the Network Service Summary page, the **Status** field displays a status of Pending and a progress bar appears, which indicates that the process is in progress.

     When the instantiation process is in progress, messages appear at the top of the Network Service Summary page informing you about the statuses and timestamps of the various intermediate processes that are run to instantiate the network service. After the process is completed successfully, the **Status** field displays a status of In Service.

Related Topics

Network Service Summary Page

Virtual Network Function Summary Page

Adding VNFs to Network Services

Adding Endpoints to Network Services

Endpoints describe the service access points for your network services. You add endpoints to a network service as part of creating and instantiating network services. Every network service requires at least one endpoint to be included in it. You can add multiple endpoints to your network services.

> **Note:**
>
> Before you instantiate a network service, you can add and remove endpoints in a network service by using the Network Service Summary page. After a network service is instantiated, you cannot add or remove endpoints in a network service.

To add endpoints to a network service:

1. Open the summary page of the network service to which you want to add endpoints.

   Alternatively, search for the network service and select it in the search results.

   The summary page for the network service appears.
2. Click **Edit**.

   The Network Service Edit page appears.
3. Click the **Endpoints** tab.
4. Click the plus button.
5. In the **Specification** list, select the specification that you want to use for the endpoint.

   The fields that appear on the Endpoints page are determined by the specification used to create the endpoint.
6. If the **ID** field does not contain the text **AUTOGENERATE**, enter a unique ID for the request.
7. In the Name field, enter a name for the endpoint.
8. Enter information into all the required fields.
9. (Optional) Enter information into non-required fields.
10. Do one of the following:
    - To save the network service for later use, click **Save and Continue**.

      The Network Service - Summary page for the network service you created appears.
    - To instantiate the network service immediately, click **Save and Instantiate**.

      At the top of the Network Service Summary page, a message appears informing you that the network service has been submitted for instantiation. In the Network Service Summary page, the **Status** field displays a status of Pending and a progress bar appears, which indicates that the process is in progress.

      When the instantiation process is in progress, messages appear at the top of the Network Service Summary page informing you about the statuses and timestamps of the various intermediate processes that are run to instantiate the network service. After the process is completed successfully, the **Status** field displays a status of In Service.

You can instantiate the network service if you have already added the VNFs that you want to instantiate.

Related Topics

Network Service - New Page

Removing Endpoints from Network Services

Removing Endpoints from Network Services

Before you instantiate a network service, you can remove any endpoint that you have already added to your network service and saved the network service.

> **Note:**
>
> You cannot remove endpoints from a network service that is instantiated.

To remove endpoints from a network service:

1. Open the summary page of the network service from which you want to remove the endpoint.

   Alternatively, search for the network service and select it in the search results.

   The summary page for the network service appears.
2. Click the **Endpoints** tab.
3. Click the delete button for the endpoint that you want to remove.

   NFV Orchestration removes the endpoint from the network service and displays the Network Service Summary page for the network service.
4. Do one of the following:
   - To save the network service for later use, click **Save and Continue**.

     The Network Service - Summary page for the network service you created appears.
   - To instantiate the network service immediately, click **Save and Instantiate**.

     At the top of the Network Service Summary page, a message appears informing you that the network service has been submitted for instantiation. In the Network Service Summary page, the **Status** field displays a status of Pending and a progress bar appears, which indicates that the process is in progress.

     When the instantiation process is in progress, messages appear at the top of the Network Service Summary page informing you about the statuses and timestamps of the various intermediate processes that are run to instantiate the network service. After the process is completed successfully, the **Status** field displays a status of In Service.

     You can instantiate the network service if you have already added the VNFs that you want to instantiate.

Related Topics

Network Service Summary Page

Adding Endpoints to Network Services

Adding PNFs to Network Services

You can add Physical Network Functions (PNFs) to your network services. Before you can add PNFs to a network service, you must register the PNFs in the inventory. See *UIM NFV Orchestration Implementation Guide* for information about registering PNFs in the inventory.

> **Note:**
>
> You cannot add PNFs to a network service that is instantiated.

To add PNFs to a network service:

1. Open the summary page of the network service to which you want to add a PNF.

   Alternatively, search for the network service and select it in the search results.

   The summary page for the network service appears.
2. Click **Edit**.

   The Network Service Edit page appears.
3. Click the **PNFs** tab.
4. Click the plus button.
5. In the **Name** field, enter the name of the PNF that you want to associate with the network service.

   The name value that you enter in the **Name** field is used to search for a matching PNF that is registered in the inventory. If no matching PNF is found, you must register the PNF by using a RESTful API. See the *UIM NFV Orchestration Implementation Guide* for information about registering PNFs.
6. Do one of the following:
   - To save the network service for later use, click **Save and Continue**.

     The Network Service Summary page for the network service you created appears.
   - To instantiate the network service immediately, click **Save and Instantiate**.

     At the top of the Network Service Summary page, a message appears informing you that the network service has been submitted for instantiation. In the Network Service Summary page, the **Status** field displays a status of Pending and a progress bar appears, which indicates that the process is in progress.

     When the instantiation process is in progress, messages appear at the top of the Network Service Summary page informing you about the statuses and timestamps of the various intermediate processes that are run to instantiate the network service. After the process is completed successfully, the **Status** field displays a status of In Service.

     You can instantiate the network service if you have already added the VNFs that you want to instantiate.

Related Topics

Network Service - New Page

Removing PNFs from Network Services

Removing PNFs from Network Services

Before you instantiate a network service, you can remove any PNF that you have added to a network service and saved the network service. When you remove a PNF from the network service, you disassociate the PNF from the network service. The PNF still exists in the inventory.

> **Note:**
>
> You cannot remove PNFs from a network service that is instantiated.

To remove PNFs from a network service:

1. Open the summary page of the network service.

   Alternatively, search for the network service and select it in the search results.

   The summary page for the network service appears.
2. Click the **PNFs** tab.
3. Click the delete button for the PNF that you want to remove.

   NFV Orchestration removes the PNF from the network service and displays the Network Service Summary page for the network service.
4. Do one of the following:
   - To save the network service for later use, click **Save and Continue**.

     The Network Service Summary page for the network service you created appears.
   - To instantiate the network service immediately, click **Save and Instantiate**.

     At the top of the Network Service Summary page, a message appears informing you that the network service has been submitted for instantiation. In the Network Service Summary page, the **Status** field displays a status of Pending and a progress bar appears, which indicates that the process is in progress.

     When the instantiation process is in progress, messages appear at the top of the Network Service Summary page informing you about the statuses and timestamps of the various intermediate processes that are run to instantiate the network service. After the process is completed successfully, the **Status** field displays a status of In Service.

     You can instantiate the network service if you have already added the VNFs that you want to instantiate.

Related Topics

Network Service Summary Page

Adding PNFs to Network Services

Canceling Network Services

You cancel network services when NFV Orchestration fails to instantiate the network services and the partially allocated resources are not rolled back completely after you tried instantiating the network service. When you cancel a network service, all the resources that were allocated to the constituent VNFs and the PNFs are released and become available for consumption by

other network services. You also cancel network services when you do not want to use the network services that you created and saved for later use.

> **Note:**
>
> When you cancel a network service that failed to instantiate, NFV Orchestration does not roll back the resources in your VIM. You must remove the allocated resources in your VIM manually.

To cancel network services:

1. Open the summary page of the network service that you want to cancel.

   Alternatively, search for the network service and select it in the search results.

   The summary page for the network service appears.

2. From the **Actions** menu, select **Cancel**.

   At the top of the Network Service Summary page, a message appears informing you that the network service has been submitted for cancellation. In the Network Service Summary page, the **Status** field displays a status of Pending.

   After the cancellation process is completed successfully, the **Status** field displays a status of Cancelled.

   Canceling network services may take some time to complete. In UIM NFV Orchestration and in your VIM, the resources may not be released immediately after you cancel a network service.

Related Topics

Network Service Summary Page

Creating Network Services

Network Service - New Page

You use the Network Service - New page to create new network services.

> **Note:**
>
> The fields that appear on this page are determined by the descriptor used to create the network service. In Design Studio, you create a specification for the descriptor and add characteristics, which are displayed as fields in the pages.

Field	Description
Descriptor	Select the descriptor that you want to use for the network service.
ID	This field displays **AUTOGENERATE** and is read only. By default, most entity specifications are defined in Design Studio so that IDs are generated automatically.
Name	Enter a name for the new network service.

Field	Description
Service Flavor	Select the service flavor that you want to use for the network service.
VNF FG Descriptor	Select the VNF forwarding graph descriptor that you want to use for the network service.

The Network Service - New page includes three tabs:

- Use the Endpoints Tab to add endpoints to a network service.
- Use the Virtual Network Functions Tab to add VNFs to a network service.
- Use the Physical Network Functions Tab to add PNFs to a network service.

Related Topics

Creating Network Services

Instantiating Network Services

Endpoints Tab

You use the **Endpoints** tab to specify details about the endpoints that you want to use for the network service. To add an endpoint to the network service, click the plus button.

> **Note:**
>
> Even if your network service does not require a VNF forwarding graph, you must specify at least one endpoint to access the network service.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the endpoint. In Design Studio, you create a specification and add characteristics, which are displayed as fields in the pages.

Field	Description
Specification	Select the specification that you want to use for the endpoint.
ID	This field displays **AUTOGENERATE** and is read-only. By default, most entity specifications are defined in Design Studio so that IDs are generated automatically.
Name	This field displays **AUTOGENERATE** and is read-only. By default, most entity specifications are defined in Design Studio so that IDs are generated automatically.
IP Address	Enter the IP address for the endpoint.
Reference	Select the endpoint that is defined in the network service descriptor file.
Service Location	(Optional) Enter the location to which the endpoint relates.

Field	Description
External Network	This field is required only if the service endpoint is of type Floating IP. Enter the external network to which the Floating IP belongs.

Related Topics

Creating Network Services

Adding Endpoints to Network Services

Removing Endpoints from Network Services

Virtual Network Functions Tab

You use the **Virtual Network Functions** tab to specify details about the VNFs that you want to include in the network service. To add VNFs, click the plus button.

> **Note:**
>
> The fields that appear on this page are determined by the descriptor used to create the VNF. In Design Studio, you create a specification for the descriptor and add characteristics, which are displayed as fields in the pages.

Field	Description
Descriptor	Select the descriptor that you want to use for the VNF.
ID	This field displays **AUTOGENERATE** and is read only. By default, most entity specifications are defined in Design Studio so that IDs are generated automatically.
Name	Enter a name for the VNF.
Version	Select the version of the VNF image that you want to use.
Deployment Flavor	Select the deployment flavor that you want to use.

Related Topics

Creating Network Services

Adding VNFs to Network Services

Removing VNFs from Network Services

Physical Network Functions Tab

You use the **Physical Network Functions** tab to specify details about the PNFs that you want to include in the network service. To add PNFs, click the plus button.

> **Note:**
>
> The fields that appear on this page are determined by the descriptor used to create the PNF. In Design Studio, you create a specification for the descriptor and add characteristics, which are displayed as fields in the pages.

Field	Description
Name	Enter the name of the PNF that you want to add to the network service. The name value that you enter in this field is used to search for a matching PNF. If no matching PNF is found, you must register the PNF in the inventory by using a RESTful API. See *UIM NFV Orchestration Implementation Guide* for information about registering PNFs.
ID	This field displays **AUTOGENERATE** and is read only. By default, most entity specifications are defined in Design Studio so that IDs are generated automatically.
Descriptor	Displays the name of the descriptor based on which the PNF was created.

Related Topics

Creating Network Services

Adding PNFs to Network Services

Removing PNFs from Network Services

Network Service Summary Page

You use the Network Service Summary page to view the summary of a network service.

The Network Service Summary page includes the Network Service Information section and the following tabs:

- Use the Network Service Information Section to view basic information about the network service.
- Use the Configuration Tab to view the configuration information about the network service.
- Use the Forwarding Graphs Tab to view a visualization (schematic view) of the network forwarding paths in a network service.
- Use the Endpoints Tab to view the details about the endpoints that are associated with the network service.
- Use the Virtual Network Functions Tab to view the details about the VNFs that are associated with the network service.
- Use the Physical Network Functions Tab to view the details about the PNFs that are associated with the network service.
- Use the Monitoring Tab to view the performance metrics about the VNFs that are associated with the network service.

Network Service Information Section

The Network Service Information section in the Network Service Summary page displays basic information about the network service, most of which was defined when you created the network service.

> **Note:**
>
> The fields that appear on this page are determined by the descriptor used to create the network service. The descriptor is created in Design Studio.

Field	Description
Descriptor	Displays the descriptor used to create this network service.
ID	Displays the ID generated for the network service. This field is read-only.
Name	Displays the name of the network service.
VIM ID	Displays the ID of the VIM.
Service Flavor	Displays the service flavor used to create the network service.
Status	Displays the current status of the network service.
Status Date	Displays the date on which the status of the network service was last changed.
Server Group	Displays the name of the server group in which the network service is instantiated.
Data Center	Displays the name of the data center in which the network service is instantiated.

Configuration Tab

You use the **Configuration** tab to view the configuration information about the network service. The Configuration tab contains two sections.

Section	Description
Network Service Configuration Information	Displays the configuration information about the network service. The **Version** list enables you to select the configuration version whose information is displayed in the Configuration Items section.
Configuration Items	Displays the configuration hierarchy of the selected configuration version. See "Working with Entity Configurations" for information about how to work with the hierarchy.

Forwarding Graphs Tab

You use the **Forwarding Graphs** tab to view a visualization (schematic view) of the network forwarding paths (NFPs) in a network service. This tab contains the Forwarding Graph Hierarchy section that displays a list of all the VNF forwarding graphs (VNFFGs) in a network service. Click the triangle icon beside a VNFFG to view a list of NFPs included in that VNFFG. The NFPs are shown as links. Clicking the link of an NFP opens the new Network Forwarding Path page that displays a read-only visualization (schematic view) of that NFP.

In the Network Forwarding Path page, click the plus sign (+) to expand the VNF and its connection points. After the VNF and its connection points are expanded, click the minus sign (-) to collapse them.

Endpoints Tab

You use the **Endpoints** tab to view details about the endpoints that are associated with a network service.

> **Note:**
>
> The fields that appear on this tab are determined by the specification used to create the endpoint.

Field	Description
ID	Displays the ID of the endpoint.
Name	Displays the name of the endpoint.
Specification	Displays the name of the specification used to create the endpoint.
Status	Displays the status of the endpoint.
IP Address	Displays the IP address of the endpoint.
Reference	Displays the endpoint that is defined in the network service descriptor file.
Service Location	Displays the location to which the endpoint relates.
External Network	Displays the external network to which the endpoint Floating IP belongs.

Virtual Network Functions Tab

You use the **Virtual Network Functions** tab to view details about the VNFs that are associated with a network service.

> **Note:**
>
> The fields that appear on this tab are determined by the descriptor used to create the VNF. In Design Studio, you create a specification for the descriptor and add characteristics, which are displayed as fields in the pages.

Field	Description
ID	Displays the ID of the VNF.
Name	Displays the name of the VNF.
Status	Displays the current status of the VNF.
Descriptor	Displays the name of the descriptor used to create the VNF.
Image	Displays the name of the VNF image.
Version	Displays the version of the VNF image used to create the VNF.

Field	Description
Data Center	Displays the name of the data center in which the VNF is deployed.
Deployment Flavor	Displays the deployment flavor used to create the VNF.

Physical Network Functions Tab

You use the **Physical Network Functions** tab to view details about the PNFs that are associated with a network service.

> **Note:**
>
> The fields that appear on this tab are determined by the descriptor used to create the PNF.

Field	Description
ID	Displays the ID of the PNF.
Name	Displays the name of the PNF.
Descriptor	Displays the name of the descriptor used to create the PNF.

Monitoring Tab

When you create specifications for your network services in Design Studio, you can define the characteristics to capture URLs of web pages of your monitoring systems as characteristics. You can define the specifications to capture any number of URLs of web pages. See Design Studio documentation about working with characteristics and specifications in Design Studio.

In UIM NFV Orchestration, when you add and specify details about the network service, you can specify the URLs of web pages of your monitoring systems. After the network service is instantiated, each URL that you specified for your monitoring system displays an embedded page in a tab in the Network Service Summary page.

You can use the monitoring tabs to view the following metrics about the network services:

- CPU
- Memory
- Disk

See *UIM NFV Orchestration Implementation Guide* for more information.

Network Service Edit Page

You use the Network Service Edit page to modify the information about a network service. On the Network Service Summary page, click the **Edit** button to modify the information. Some data elements, such as the ID, cannot be changed.

You can modify the network service information and the information about endpoints, VNFs, and PNFs in their respective tabs:

- Use the Network Service Information Section to edit information about the network service.

- Use the Endpoints Tab to edit details about the endpoints in the network service.
- Use the Virtual Network Functions Tab to edit details about the VNFs in the network service.
- Use the Physical Network Functions Tab to edit details about the PNFs in the network service.

Related Topics

Creating Network Services

Network Service Summary Page

Network Service Information Section

You use the **Network Service Information Section** to modify details about the network service.

> **Note:**
>
> The fields that appear on this page are determined by the descriptors used to create the network service. The descriptor is created in Design Studio.

Field	Description
Descriptor	Displays the descriptor used to create this network service.
ID	Displays the ID generated for the network service. This field is read-only.
Name	Edit the name of the network service.
VIM ID	Displays the ID of the VIM.
Service Flavor	Select the service flavor used to create the network service.
VNF FG Descriptor	Select the VNF forwarding graph descriptor that you want to use for the network service.

Related Topics

Creating Network Services

Network Service Edit Page

Endpoints Tab

You use the **Endpoints** tab to modify details about the endpoints included in the network service. You can also add new endpoints to the network service. To add an endpoint, click the plus button.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the endpoint. In Design Studio, you create a specification and add characteristics, which are displayed as fields in the pages.

Field	Description
Specification	Displays the specification used for the endpoint.
ID	This field displays **AUTOGENERATE** and is read only. By default, most entity specifications are defined in Design Studio so that IDs are generated automatically.
Name	This field displays **AUTOGENERATE** and is read-only. By default, most entity specifications are defined in Design Studio so that IDs are generated automatically.
IP Address	Enter the IP address for the endpoint.
Reference	Select the endpoint that is defined in the network service descriptor file.
Service Location	(Optional) Enter the location to which the endpoint relates.
External Network	This field is required only if the service endpoint is of type Floating IP. Enter the external network to which the Floating IP belongs.

Related Topics

Creating Network Services

Adding Endpoints to Network Services

Network Service Edit Page

Virtual Network Functions Tab

You use the **Virtual Network Functions** tab to modify details about the VNFs included in the network service. You can also add new VNFs to the network service and delete existing VNFs. To add a VNF, click the plus button.

> **Note:**
>
> The fields that appear on this page are determined by the descriptor used to create the VNF. In Design Studio, you create a specification for the descriptor and add characteristics, which are displayed as fields in the pages.

Field	Description
Descriptor	Displays the descriptor used to create the VNF.
ID	This field displays **AUTOGENERATE** and is read only. By default, most entity specifications are defined in Design Studio so that IDs are generated automatically.
Name	Modify the name of the VNF.

Field	Description
Version	Displays the version of the VNF image used.
Deployment Flavor	Displays the deployment flavor used.

Related Topics

Creating Network Services

Adding VNFs to Network Services

Network Service Edit Page

Physical Network Functions Tab

You use the **Physical Network Functions** tab to modify details about the PNFs that are included in the network service. You can also add new PNFs to the network service and delete existing PNFs. To add a PNF, click the plus button.

> **Note:**
>
> The fields that appear on this page are determined by the descriptor used to create the PNF. In Design Studio, you create a specification for the descriptor and add characteristics, which are displayed as fields in the pages.

Field	Description
Name	Enter the name of the PNF that you want to add to the network service. The name value that you enter in this field is used to search for a matching PNF. If no matching PNF is found, you must register the PNF in the inventory by using a RESTful API. See *UIM NFV Orchestration Implementation Guide* for information about registering PNFs.
ID	This field displays **AUTOGENERATE** and is read only. By default, most entity specifications are defined in Design Studio so that IDs are generated automatically.
Descriptor	Displays the name of the descriptor based on which the PNF was created.

Related Topics

Creating Network Services

Adding PNFs to Network Services

Network Service Edit Page

Working with Virtual Network Functions

Virtual Network Functions (VNFs) represent network functions that can be deployed on a virtualized infrastructure.

See the following topics for more information about working with VNFs:

- Creating Virtual Network Functions
- Rebooting Virtual Network Functions
- Replacing Virtual Network Functions
- Scaling Virtual Network Functions
- Monitoring Virtual Network Functions
- Switching Between Virtual Network Function Configurations

> **Note:**
>
> Based on the configurations that your VNFs require, some tasks that you perform on the VNFs may take some time to complete. In UIM NFV Orchestration and in your VIM, the resources may not be created, removed, or updated immediately after you complete the task.

Creating Virtual Network Functions

You create and add VNFs to a network service as part of creating network services. You cannot create VNFs independently as you can do with most entities in NFV Orchestration. See "Adding VNFs to Network Services" for instructions about creating VNFs.

Related Topics

Virtual Network Function Summary Page

Creating Network Services

Rebooting Virtual Network Functions

You reboot VNFs in a network service to restart the virtual machines on which the VNFs are deployed. As part of the VNF reboot action, NFV Orchestration reboots all the constituent VDUs of the VNF.

To reboot VNFs:

1. In the **NFV Orchestration** group of the navigation section, in the **Orchestration** subgroup, click the **VNFs** link.

   The search page for VNFs appears.

2. In the Search page, search for and open the summary page of the VNF that you want to reboot.

3. On the summary page of the VNF, from the **Actions** menu, select **Reboot**.

   At the top of the VNF Summary page, a message appears informing you that the VNF has been submitted for reboot. After the process is completed successfully, a message appears informing you that the VNF has been rebooted.

Related Topics

Virtual Network Function Summary Page

Replacing Virtual Network Functions

Replacing Virtual Network Functions

You replace VNFs in a network service to undeploy existing VNFs and deploy new VNFs. As part of the VNF replace action, NFV Orchestration replaces all the constituent VDUs of the VNF.

To replace VNFs:

1. In the **NFV Orchestration** group of the navigation section, in the **Orchestration** subgroup, click the **VNFs** link.

   The search page for VNFs appears.
2. In the Search page, search for and open the summary page of the VNF that you want to replace.
3. On the summary page of the VNF, from the **Actions** menu, select **Replace**.

   At the top of the VNF Summary page, a message appears informing you that the VNF has been submitted for replacement. After the process is completed successfully, a message appears informing you that the VNF has been replaced.

Related Topics

Virtual Network Function Summary Page

Rebooting Virtual Network Functions

Scaling Virtual Network Functions

You scale VNFs in a network service when there is high or low utilization of CPU and memory on the machine on which the network service is instantiated. When you scale VNFs, you can either clone existing VNF instances in a network service or remove VNFs from a network service.

To scale VNFs in a network service:

1. In the **NFV Orchestration** group of the navigation section, in the **Orchestration** subgroup, click the **VNFs** link.

   The search page for VNFs appears.
2. In the Search page, search for and open the summary page of the VNF that you want to scale.
3. On the summary page of the VNF, from the **Actions** menu, select any of the following:
   - **Scale Out** to add additional instances for each constituent VDU of the VNF in the network service based on the scaling quantity defined for the constituent VDUs in the VNF descriptor. As part of VNF scale out, you can add VDU instances only up to the maximum instance limit defined for the constituent VDUs in the VNF descriptor. Even if one of the VDUs in a VNF has reached its maximum instance limit, and the other VDUs in that VNF have not reached their maximum instance limit, NFV Orchestration does not allow you to further scale out the VNF.
   - **Scale In** to remove existing VDU instances of each constituent VDU of the VNF in the network service based on the scaling quantity defined for the constituent VDUs in the VNF descriptor. As part of VNF scale in, you can remove VDU instances only up to the minimum instance limit defined for the constituent VDUs in the VNF descriptor. Even if one of the VDUs in a VNF has reached its minimum instance limit, and the other VDUs

in that VNF have not reached their minimum instance limit, NFV Orchestration does not allow you to further scale in the VNF.

At the top of the VNF Summary page, a message appears informing you that the VNF has been submitted for scaling. After the process is completed successfully, a message appears informing you that the VNF has been scaled.

See *UIM NFV Orchestration Implementation Guide* for more information about scaling VNFs.

Related Topics

Network Service Summary Page

Rebooting Virtual Network Functions

Replacing Virtual Network Functions

Monitoring Virtual Network Functions

When you create specifications for your VNFs in Design Studio, you can define the specifications to capture URLs of web pages of your VNF monitoring systems as characteristics. You can define the specifications to capture any number of URLs of web pages. See Design Studio documentation about working with characteristics and specifications in Design Studio.

In UIM NFV Orchestration, when you add VNFs to network services, you specify the URLs of web pages of your VNF monitoring systems. After the network service is instantiated, each URL that you specified for your VNF monitoring system displays an embedded page in a tab in the Network Service Summary page.

You can use the monitoring tabs to view the following metrics about the VNFs:

- CPU
- Memory
- Disk

See *UIM NFV Orchestration Implementation Guide* for more information.

To monitor VNFs:

1. In the **NFV Orchestration** group of the navigation section, in the **Orchestration** subgroup, click the **VNFs** link.

   The Search page for VNFs appears.

2. In the Search page, search for and open the summary page of the VNF that you want to monitor.

3. On the summary page of the VNF, click the tab for the VNF monitoring page.

   The VNF monitoring page appears as an embedded page in the tab.

> **Note:**
>
> The VNF monitoring tabs are displayed only if you have specified URLs of the monitoring pages for your VNFs. You specify VNF monitoring pages when you create and instantiate the network service.

Related Topics

Monitoring Tab

Network Service Summary Page

Switching Between Virtual Network Function Configurations

You can switch between different VNF configurations and view the configuration details for each VNF.

To switch between VNF configurations:

1. In the **NFV Orchestration** group of the navigation section, in the **Orchestration** subgroup, click the **VNFs** link.

   The search page for VNFs appears.
2. In the Search page, search for and open the summary page of the VNF.
3. On the summary page of the VNF, in the Configuration tab, from the **Version** menu, select the VNF version about which you want to view the configuration details.

Related Topics

Network Service Summary Page

Virtual Network Function Summary Page

Virtual Network Function Summary Page

The VNF Summary page displays information about the VNF. The VNF Summary page includes the VNF Information section and the following tabs:

- Use the VNF Information Section to view basic details about VNFs.
- Use the Configuration Tab to view the VNF configurations.
- Use the Virtual Deployment Units Tab to view basic details about the Virtual Deployments Units (VDUs) of a VNF.
- Use the Device View Section to view a list of constituent VDUs and the hierarchy of the connection points in the VNF configuration.

> **Note:**
>
> The VNF Summary page also displays monitoring tabs that display embedded web pages if you have defined your VNF specifications to capture URLs of web pages and provided the URLs when you created the VNFs and network services. See "Monitoring Tab" for more information about monitoring tabs.

VNF Information Section

The VNF Information section displays basic information about the VNF, most of which was defined when you created it. Click **Edit** to change this information. Only some information can be changed.

> **Note:**
>
> The fields that appear on this page are determined by the descriptor used to create the VNF. The descriptor is created in Design Studio.

Field	Description
Descriptor	Displays the descriptor used to define this VNF.
ID	Displays the automatically-generated ID of the VNF.
Name	Displays the name of the VNF.
Version	Displays the version of the VNF.
Flavor	Displays the deployment flavor used.
Assignment Status	Displays the assignment status, such as Pending Assign or Assigned, of the VNF. Assignment statuses indicate the availability of the resource for consumption.
External ID	Displays the external ID of the VNF.
VIM ID	Displays the ID of the VIM.
Network Service	Displays the name of the network service on which the VNF is instantiated. The network service name is displayed as a link that you can click to navigate to the Network Service Summary page, which displays detailed information about the network service.

Configuration Tab

You use the **Configuration** tab to view and manage the VNF's configurations.

Section	Description
VNF Service Configuration Information	Displays the details about the VNF. The **Version** list enables you to select the configuration version whose information is displayed in the Device View and Configuration View sections.
Configuration Items	Displays the configuration hierarchy of the current configuration version for the VNF. See "Working with Entity Configurations" for more information.

Virtual Deployment Units Tab

You use the **Virtual Deployment Units** tab to view basic details about the virtual deployment units of a VNF.

Field	Description
ID	Displays the automatically-generated ID of the VDU. Each ID appears as a link that you can click to navigate to the VDU Summary page, which displays detailed information about the VDU.
Name	Displays the name of the VDU.
Specification	Displays the specification used to create the VDU.
VDU Flavor	Displays the flavor of the VDU.

Field	Description
Status	Displays the current status of the VDU.

Device View Section

You use the Device View section to view a list of the constituent VDUs and the hierarchy of the connection points in the VNF configuration.

Field	Description
VNF	Displays the name of the VNF and its constituent VDUs, including the connection points in the VNF configuration.
Specification	Displays the specification used to create the VNF, VDUs, and the connection points.
Inventory Status	Displays the inventory status of the VNF, VDUs, and connection points.
Assignment Status	Displays the assignment status of the VNF, VDUs, and connection points. Assignment statuses indicate the availability of the resource for consumption.
IP Address	Displays the IP address of the connection point.

Working with Virtual Deployment Units

Rebooting Virtual Deployment Units

You reboot VDUs in a network service to restart the virtual machines on which the VNFCs are deployed.

To reboot VDUs:

1. In the **NFV Orchestration** group of the navigation section, in the **Orchestration** subgroup, click the **VNFs** link.

   The search page for VNFs appears.
2. In the Search page, search for and open the summary page of the VNF.
3. Click the **Virtual Deployment Units** tab and click the hyperlinked ID of the VDU that you want to reboot.

   The summary page of the VDU appears.
4. From the **Actions** menu, select **Reboot**.

   At the top of the VDU Summary page, a message appears informing you that the VDU has been submitted for reboot. After the process is completed successfully, a message appears informing you that the VDU has been rebooted.

Related Topics

Virtual Network Function Summary Page

Virtual Deployment Units Tab

VDU Summary Page

VDU Summary Page

The VDU Summary page displays information about the VDU. The VDU Summary page includes the VDU Information section and the Connection Points section:

- Use the VDU Information Section to view basic details about the VDU.
- Use the Connection Points Section to view basic details about the connection points of the VNF components in the VDU.

VDU Information Section

The VDU Information section displays basic information about the VDU, most of which was defined when you created it.

Field	Description
ID	Displays the automatically-generated ID of the VDU.
Name	Displays the name of the VDU.
Specification	Displays the specification used to create the VDU.
Status	Displays the assignment status, such as Pending Assign or Assigned, of the VDU. Assignment statuses indicate the availability of the resource for consumption.
Image	The name of the VDU image for instantiate.
Availability Zone	The name of the availability zone where the VDU gets instantiated.
External ID	Displays the external ID of the VDU.
Host	The host ID where the VDU is instantiated.
Security Groups	The security groups for the VDU.
Flavor	Displays the deployment flavor used to create the VDU.
VNF ID	Displays the ID of the VNF to which the VDU is assigned. Clicking the VNF ID opens the summary page for the VNF.

Connection Points Section

The Connection Points section displays basic information about the connection points of the VNF components in the VDU.

Field	Description
ID	Displays the automatically-generated ID of the connection point.
Name	Displays the name of the connection point.
IP Address	Displays the IP address of the connection point.
Network	Displays the network to which the connection point is connected to. For example, Management network, DATA_IN network, or DATA_OUT network.
External ID	Displays the external ID of the connection point.

Working with Descriptors

Descriptors describe network services and VNFs in terms of their deployment and operational behavior. They describe the attributes of the VNF and network service specifications.

See the following topic for more information about working with descriptors:

- Viewing Descriptor Files

Viewing Descriptor Files

You can view the content of the descriptor files in UIM NFV Orchestration.

To view network service or VNF descriptor files:

1. In the navigation section, in the **NFV Orchestration** group, in the **Catalog** subgroup, click the **Network Service Descriptors** link to search for a network service descriptor or click the **VNF Descriptors** link to search for a VNF descriptor.

   The Search page appears.

2. Enter search criteria in the desired fields. Some fields require that you enter text; others allow you to select from lists.
3. In the Search Results section, in the Name column, click the link for the descriptor that you want to view.

   The Descriptor Information page appears.

See *UIM NFV Orchestration Implementation Guide* for more information about the descriptor files.

Related Topics

Network Service Descriptor - Details Page

Network Service Descriptor - Details Page

You use the Network Service Descriptor - Details page to view information about network service descriptors. The information in this page is read only.

Section	Description
Descriptor Information	Displays basic details about the network service descriptor.
Descriptor File	Displays the text of the network service descriptor in XML format. You can search for specific words and values or navigate to any specific line in the content.
Composition	Displays the hierarchy of the network service composition. See "Viewing Specification Relationship Information" for more information.
Characteristics	Displays detailed information about the descriptor's characteristics. Each characteristic appears as a link that you can click to navigate to the Characteristic Specification page. Additionally, this section indicates whether a value for the characteristic is required for this network service or network service descriptor. The **Required** option defined for a descriptor can differ from the default setting.

Section	Description
Extension Point Rulesets	Displays the ruleset and extension point combinations that are associated with the descriptor.

VNF Descriptor - Details Page

You use the VNF Descriptor - Details page to view information about VNF descriptors. The information in this page is read only.

Section	Description
Descriptor Information	Displays basic details about the VNF descriptor, including the descriptor name and the entity type to which it applies.
Descriptor File	Displays the text of the descriptor in XML format. You can search for specific words and values or navigate to any specific line in the content.
TOSCA Deployment Template	Displays the text of the VNF descriptor in a Topology and Orchestration Specification for Cloud Applications (TOSCA) deployment template form. You can search for specific words and values or navigate to any specific line in the content.
Composition	Displays the hierarchy of the VNF composition. See "Viewing Specification Relationship Information" for more information.
Characteristics	Displays detailed information about the descriptor's characteristics. Each characteristic appears as a link that you can click to navigate to the Characteristic Specification page. Additionally, this section indicates whether a value for the characteristic is required for this VNF or VNF descriptor. The **Required** option defined for a descriptor can differ from the default setting.
Extension Point Rulesets	Displays the ruleset and extension point combinations that are associated with the descriptor.

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Working with Products

Products represent a customer- or market-oriented view of a service provider's offerings. Products represent bundles of services and other products that are sold to customers.

> **Note:**
>
> Product entities are included in UIM for backward compatibility with previous versions. The UIM navigation section does not include a **Product** link unless the user is authorized to access the Product Search page. Access is turned off by default. See *UIM System Administrator's Guide* for information about authorizing user access.

In UIM, you can use Product entities to represent products. You can define the composition of Product entities to include services, products, or a combination of the two. Product specifications can require that particular product or service entities be included. You can validate a product to ensure that all required products and services have been included. See "Validating Product Compositions" for more information.

You can associate Party entities to products and qualify those associations with roles. Products can also be included in inventory groups. See "Working with Inventory Groups" for more information.

See the following topics for more information about working with products:

- Defining Product Compositions
- Products - New Page
- Products - Information Page
- Product Summary Page

Defining Product Compositions

A product can include both services and other products, arranged hierarchically. Products (including the original product) can be both parents and children in the hierarchy; services can be only children.

The products and services you can include in the composition are determined by the Product specification. If the Product specification defines relationships with Product and Service specifications, then only entities based on those specifications can be included. If the specification does not contain these relationships, then any Product or Service entities can be included.

See the following topics for more information about defining a product's composition:

- Adding Products or Services to Product Compositions
- Updating Product Compositions
- Removing Products and Services

- Validating Product Compositions

Adding Products or Services to Product Compositions

A product composition includes Product and Service entities that you create specifically for that product. You cannot add existing Product and Service entities to a product composition.

If the product's specification defines required products or services, you must add entities of the required Product or Service specifications to complete the composition. You can validate the product to determine if its composition is complete. See "Validating Product Compositions" for more information.

After you create a product or service as part of a product composition, you can modify it using the normal procedures for those entity types. For example, you can add a configuration to a service.

To add a new product or service to a product composition:

1. Open the Summary page for a Product entity.
2. In the Composition section, expand the hierarchy and right-click the position where you want to add the product or service.

   A product in the hierarchy can be a parent or a child, but a service can only be a child. If the product composition currently contains no products or services, a single item is displayed to represent the product.
3. Select **Add Product** or **Add Service**.

   The entity Information page appears.
4. Enter the required information and any relevant optional information.

   Specification and **Name** are required for both products and services.
5. Click **Save and Close**.

   The product or service appears in the Composition section.

Related Topics

Updating Product Compositions

Removing Products and Services

Validating Product Compositions

Updating Product Compositions

After a product's composition has been defined, you can update product and service names and descriptions.

To update a product or service:

1. Open the Summary page for a Product entity.
2. In the Composition section, expand the hierarchy to display the product or service you want to update.
3. Right-click the product or service and select **Maintain**.

   An Information dialog box for the product or service page appears. You can update only the **Name** and **Description** fields.

4. Update the product or service information and click **Save and Close**.

   The dialog box closes and the product or service information is updated.

Related Topics

Adding Products or Services to Product Compositions

Removing Products and Services

Validating Product Compositions

Removing Products and Services

To remove a product or service from a composition:

1. Open the Summary page for a Product entity.
2. In the Composition section, expand the hierarchy to reveal the product or service you want to remove.
3. Right-click the product or service and select **Remove**.

   The product or service is removed from the composition.

Related Topics

Adding Products or Services to Product Compositions

Updating Product Compositions

Validating Product Compositions

Validating Product Compositions

You can validate that a product composition has all the products and services required by its specification.

To validate a product composition:

1. Open the Summary page for a Product entity.
2. From the **Actions** menu, select **Validate**.

   The validation results are displayed at the top of the page. If the validation succeeds, a message reports the success. If validation fails, an error message details what is missing from the product composition.

Related Topics

Adding Products or Services to Product Compositions

Updating Product Compositions

Removing Products and Services

Products - New Page

You use the Products - New page to create new products.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Select a specification to use to define the new product.
ID	This field displays **AUTOGENERATE** and is read only. By default, most entity specifications are defined in Design Studio so that IDs are generated automatically.
Name	Enter the name of the new product.
Description	(Optional) Enter a description of the new product.

Related Topics

Creating Entities

Searching for Entities

Products - Information Page

You use the Products - Information page to edit the information that appears in the Summary page Information section. Some data elements, such as the ID, cannot be changed after the entity is created.

> **Note:**
>
> The fields that appear on this page are determined by the specification used to create the entity. The specification is created in Design Studio. The fields in the following table are common to most specifications of this type.

Field	Description
Specification	Displays the specification used to define the product. This field is read only.
ID	Displays the ID generated or entered when the entity was created. This field is read only.
Name	Edit the name of the product.
Description	Edit the description of the product.

Related Topics

Creating Entities

Searching for Entities

Product Summary Page

You use the Product Summary page to define the content for a product.

> **Note:**
>
> The sections listed in the following table are specific to the Product Summary page. See "Entity Summary Page" for information about Summary page fields that are common among all entities.

Section	Description
Information	Displays basic information about the entity, much of which was defined when you created the entity. Click **Edit** to change this information. See "Products - New Page" and "Creating Entities " for more information.
Inventory Group	Displays any inventory groups to which the product is associated. You use inventory groups to organize entities for a particular purpose. The fields that appear in the Inventory Group section are common among multiple entities. See "Entity Summary Page" for more information. See "Adding an Entity to an Inventory Group from the Entity Summary Page " for information about associating products with an inventory group.
Composition	Displays the services and other products, arranged hierarchically, associated with the products. The products and services you can include in the composition are determined by the Product specification. If the Product specification defines relationships with Product and Service specifications, then only entities based on those specifications can be included. If the specification does not contain these relationships, then any Product or Service entities can be included. The fields that appear in the Composition section are common among multiple entities. See "Entity Summary Page" for more information. See "Defining Product Compositions" for information about adding new products or services to the composition.
Parties	Displays any parties that are associated with the product. You can associate parties to products to identify related individuals or organizations. If the parties have roles assigned to them, you can specify the role that is relevant to the association. The fields that appear in the Parties section are common among multiple entities. See "Entity Summary Page" for more information. See "Associating Parties to Entities" and "Deleting Party Associations from Entities" for information about managing party associations.

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Administrative Tasks

Within the Oracle Communications Unified Inventory Management (UIM) navigation section, the **Administration** group contains links for administrative tasks such as maintaining data and topology rebuilding. It also contains links that enable you to search for projects, rulesets, sequence specifications, characteristics, and entity specifications. It also contains links that enable you to search for projects, rulesets, sequence specifications, characteristics, entity specifications, and tags.

UIM uses specifications, rulesets, and other artifacts that you define in Oracle Communications Service Catalog and Design - Design Studio. In general, you cannot make changes to the content of this information in UIM, but you can view it and perform some actions. For example, if you want to see how a particular Pipe specification is designed, you can view the specification in UIM.

See the following topics for more information about working with administrative tasks:

- Maintaining Data
- Rebuilding Topology
- Working with Rulesets
- Working with Entity Specifications
- Working with Characteristics
- Working with Sequence Specifications
- Working with Tags

Maintaining Data

You use the Execute Rule page to run rulesets that maintain data in UIM. You select a ruleset to run and, if necessary, a configuration or input file. You then run the ruleset. You can run rulesets supplied by Oracle or install your own by using cartridges. For example, you could write a ruleset to clean out test data from the database.

Several rulesets are supplied as part of the **ora_uim_base_rulesets** base cartridge. These include System Import and System Export rulesets that you can use to export and import data in such a way that you can move data from one UIM database to another. The System Export ruleset requires that you specify a configuration file and System Import requires an input file in **.zip** format. See *UIM Developer's Guide* for more information about base rulesets, including a description of each base ruleset, and the specific syntax of any input files required to run a particular base ruleset.

See the following topics for more information about maintaining data:

- Running Rulesets
- Execute Rule Page

Running Rulesets

To run rulesets:

1. In the **Administration** group of the navigation section, click **Execute Rule**.

   The Execute Rule page appears. See "Execute Rule Page" for more information about the fields in this page.
2. In the **Ruleset** list, select the ruleset you want to use.
3. In the **File** field, enter the path and file name of the configuration or input file for this ruleset.
4. Click **Process**.

   UIM performs the operations defined in the selected ruleset and its configuration or input file.

Running Rule in Business Interaction Context

You can run rules in Business Interaction context.

To run a rule in Business Interaction context:

1. From the left navigation pane, under Administration, click **Execute Rule**.

   The Execute Rule page appears.
2. Select a Business Interaction from the context list.

> **Note:**
>
> You can find the context list on the top-left corner of the Execute Rule page.

3. Select a rule from the **Ruleset** list.
4. (Optional) Click **Choose File** to select a ruleset file.
5. Click **Process**.

   The rule is run in the selected Business Interaction context.

Execute Rule Page

You use the Execute Rule page to run rulesets that maintain data in UIM.

> **Note:**
>
> To view the UIM base rulesets, you must first install the **ora_uim_base_rulesets_cartproj.jar** base cartridge. See UIM *Developer's Guide* for detailed information about each of the UIM base rulesets.

Field	Description
Ruleset	Select the ruleset you want to run.
File	Select the configuration or input file for the ruleset. Click **Browse** to navigate to and select a file.
Process	Click to perform the operations defined in the selected ruleset and its configuration or input file.

Rebuilding Topology

If topology updates are turned off in UIM, you must rebuild the topology before you use features that rely on it. See *UIM System Administrator's Guide* for information about turning off topology updates.

> **Caution:**
>
> Only system administrators should be authorized to rebuild topology. When you rebuild the topology, the old version is deleted and a new one is created. Back up your old topology before rebuilding to ensure that you can return to it, if necessary.

If UIM is installed in a cluster environment, only one instance can be rebuilt at a time. When a rebuild is in progress on one instance, the rebuild operation is disabled for other instances.

You should schedule topology rebuilds as maintenance tasks during times when no changes to the inventory will take place.

To rebuild the UIM topology:

1. In the **Administration** group of the navigation section, click **Rebuild Topology**.

   The Rebuild Topology page appears.

2. Click the **Rebuild Topology** button.

   The topology begins to be rebuilt. You can refresh the page to see status updates. When the process is complete, the page reverts to its original appearance and the **Rebuild Topology** button becomes available.

   You can check on the success of the rebuild by consulting the log at:

   WLServer_Home`/user_projects/domains/Domain_Home/uim/logs/****Server_uim_rebuild.log`

Rebuild Topology Page

You use the Rebuild Topology page to rebuild the UIM topology when automatic rebuilds are turned off.

> **Caution:**
>
> When you rebuild the topology, the old version is deleted and a new one is created. Back up your old topology before rebuilding to ensure that you can return to it, if necessary.

Field	Description
Rebuild Topology	Click to rebuild the UIM topology.

Related Topics

Rebuilding Topology

Working with Rulesets

Rulesets are custom code that extends core UIM logic at specific points called extension points. Several rulesets are supplied as part of the **ora_uim_base_rulesets** base cartridge, and others are included in cartridge packs that you install. You can also define rulesets and extension points in Design Studio and deploy them from cartridges into UIM.

In UIM, you can view rulesets, but you cannot change them. You can, however, delete rulesets that are not in use. See *UIM Developer's Guide* for more information about rulesets, including detailed information about each base ruleset.

See the following topics for more information about working with rulesets:

- Viewing Rulesets
- Running Rulesets
- Deleting Rulesets
- Rulesets Page

Viewing Rulesets

In UIM, you can view rulesets, but you cannot change them.

To view a ruleset:

1. In the **Administration** group of the navigation section, click **Rulesets**.

   The Rulesets Search page appears.
2. Search for a ruleset.

   See "Searching for Entities" for more information.
3. In the Search Results section, click a ruleset link.

   The Ruleset page appears, displaying the source code for the ruleset.

Related Topics

Deleting Rulesets

Working with Rulesets

Deleting Rulesets

You can delete rulesets that are not in use.

> **Note:**
>
> The ruleset might be restored if you reinstall a cartridge that contains it. See *UIM Concepts* for best practices information about upgrading cartridges and cartridge packs.

To delete rulesets:

1. In the **Administration** group of the navigation section, click **Rulesets**.

   The Rulesets Search page appears.

2. Click **Search**.
3. In the Search Results section, select one or more rulesets and click **Delete**.

   The selected rulesets are deleted. If you try to delete a ruleset that is in use, UIM displays an error message.

Related Topics

Viewing Rulesets

Working with Rulesets

Rulesets Page

You use the Rulesets page to review the sections of custom code that run at extension points in UIM. You define rulesets and extension points in Design Studio and deploy them from cartridges into UIM.

This page is read only. You cannot change rulesets in UIM. See *UIM Concepts* and *UIM Developer's Guide* for more information about rulesets.

Related Topics

Viewing Rulesets

Deleting Rulesets

Working with Entity Specifications

Specifications are the blueprints used to define entities in UIM. Entity specifications are deployed into UIM when you install base cartridges, cartridge packs, and other cartridges defined in Design Studio.

Although you can view the specifications in UIM to see how they are structured, you cannot change specifications in UIM. They can be changed only in Design Studio. See *UIM Developer's Guide* and *UIM Concepts* for more information. You can, however, delete specifications under certain circumstances.

Even though you cannot make changes to specifications, you can view them to discern information about entities based on them, such as minimum and maximum quantities of related entities.

See the following topics for more information about working with entity specifications:

- Viewing Specification Relationship Information
- Viewing Page Layouts
- Viewing Tags on Configuration Items for a Specification
- Deleting Entity Specifications
- Specification Summary Page

Viewing Specification Relationship Information

You can view information about relationships between specifications. For example, you can see the minimum and maximum required quantities of a child specification.

To view relationship information:

1. Open a Specification Summary page.
2. In the Composition section, expand the specification.

   The child specifications appear.
3. Right-click a child specification and select **Relationship Properties**.

   The Specification Relationship dialog box appears, displaying information about the relationship.

Related Topics

Viewing Page Layouts

Viewing Tags on Configuration Items for a Specification

Deleting Entity Specifications

Specification Summary Page

Viewing Page Layouts

Specifications define layouts that determine how characteristics and default data elements are laid out in pages for entities based on them. There are two different layouts:

- The Summary Form Layout controls how entity Summary pages are displayed.
- The Form Layout controls how entity Maintenance pages are displayed.

To view layouts:

1. Open the Specification Summary page for the specification.
2. In the Layouts section, click the **form layout** or **summary form layout** link.

   UIM displays the layout of data elements and characteristics for the page type that you clicked.

Related Topics

Viewing Specification Relationship Information

Viewing Tags on Configuration Items for a Specification

Deleting Entity Specifications

Specification Summary Page

Viewing Tags on Configuration Items for a Specification

You can view tags on configuration items for a specification.

To view tags on configuration items for a specification.

1. In the **Administration** group of the navigation section, click **Specifications**.

   The Specifications Search page appears.
2. Search for a specification that is configurable.

   See "Searching for Entities" for more information.
3. In the Search Results section, click a specification link.

   The Specification Summary page appears.
4. In the Configuration section, expand the configuration.
5. In the Configuration Items section, expand the hierarchy until you reach the item that has the tags you want to view.

Related Topics

Working with Tags

Viewing Tags on Configuration Items

Viewing Tags

Deleting Tags

Deleting Entity Specifications

You can delete specifications, but you cannot delete specifications that have been used to create entities that remain in the database.

> **Note:**
>
> A specification that you delete might be restored if you reinstall a cartridge that contains it. See *UIM Concepts* for best practices information about upgrading cartridges and cartridge packs.

To delete specifications:

1. Search for the specification you want to delete.

   See "Searching for Entities" for more information.
2. In the Search Results section, select the specification you want to delete.
3. Click **Delete**.

   The specification is removed from the list. If you try to delete a specification that is in use, UIM displays an error message.

Related Topics

Viewing Specification Relationship Information

Viewing Page Layouts

Viewing Tags on Configuration Items for a Specification

Specification Summary Page

Specification Summary Page

You use the Specification Summary page to view information about specifications. The information in this page is read only.

> **Note:**
>
> The following sections are common to multiple types of specifications. Some specifications, however, include additional sections. For example, Pipe specifications have sections for the associated Capacity Required specification, Capacity Provided specification, and Signal Structure. specification Summary pages for Entity ID specifications include the prefix, suffix, and Sequence specification used to generate IDs. See the Design Studio Help for more information about Entity ID specifications.

Section	Description
Information	Displays basic details about the specification.
Layouts	Displays how data elements and characteristics for entities based on the specification will be displayed in pages. See "Viewing Page Layouts " for more information.
Characteristics	Displays detailed information about the properties of the specification's characteristics. Each characteristic appears as a link that you can click to navigate to the Characteristic Specification page. Additionally, this section indicates whether a value for the characteristic is required for this entity or entity configuration specification. The **Required** option defined for a specification can differ from the default setting.
Extension Point Rulesets	Displays the ruleset and extension point combinations that are associated with the specification.
Transition Groups	Displays the transition groups to which the specification belongs.
Composition	Displays child specifications related to the specification. For example, a Logical Device specification could be related to one or more Device Interface specifications. See "Viewing Specification Relationship Information" for more information.

Related Topics

Working with Entity Specifications

Working with Characteristics

Characteristics are user-defined data elements that supplement the default data elements in specifications. For example, Place specifications may have characteristics for city, province or state, and postal code.

Characteristics are defined and added to entity specifications in Design Studio.

While you can view characteristics to see how they are structured, you cannot modify characteristics in UIM. They can be changed only in Design Studio. See *UIM Developer's Guide* and *UIM Concepts* for more information. You can, however, delete characteristics under some circumstances.

See the following topics for more information about working with characteristics:

- Testing Queries
- Deleting Characteristic Specifications
- Characteristic Specifications Page

Testing Queries

You can test the query used to populate a list. Testing the query allows you to see the values that will be included in the list.

To test a query:

1. Open the Characteristic page for a list that is populated by using a query.
2. In the Query section, click **Test**.

   The Add Value Query dialog box appears.
3. Click the **Test** button.

   The matching entities are displayed in the Query Results section.
4. Click **Cancel** to close the dialog box.

Related Topics

Deleting Characteristic Specifications

Characteristic Specifications Page

Deleting Characteristic Specifications

You can delete characteristic specifications but you cannot delete characteristic specifications that are used by entities that remain in the inventory.

> **Note:**
>
> The characteristic specification might be restored if you reinstall a cartridge that contains it. See *UIM Concepts* for best practices information about upgrading cartridges and cartridge packs.

To delete characteristic specifications:

1. Search for the characteristic specification you want to delete.

   See "Searching for Entities" for more information.
2. In the Search Results section, select the characteristic specification you want to delete.
3. Click **Delete**.

The characteristic specification is removed from the list. If you try to delete a characteristic specification that is in use, UIM displays an error message.

Related Topics

Testing Queries

Characteristic Specifications Page

Characteristic Specifications Page

You use the Characteristic Specifications page to view information about characteristic specifications. The information in this page is read only.

Section	Description
Characteristic Specification Information	Displays basic identifying information about the characteristic.
Values	(For lists only) Displays values and value ranges that have been defined for the list. The values that appear are either defined for the characteristic specification or are override values defined specifically for the entity or entity configuration specification.
Query	(For lists only) Displays the query string used to populate the list. You can test the query to see the results that will be displayed in the list. See "Testing Queries" for more information.
Entity Link Information	(For lists only) Displays the entity link that is defined to populate a list with the names of entities created from a specification.
Specifications	Displays a list of the specifications that include this characteristic. You can click links to go to the corresponding Specification Summary pages.

Working with Sequence Specifications

UIM uses Sequence specifications to define ranges of numbers and how numbers are incremented for entities. For example, a sequence specification can determine the range of numbers used for VPN ID indexes and how the numbers increment when new VPNs are created. Sequence specifications are also used to define how entity IDs are generated.

You create Sequence specifications in Design Studio. You cannot create or modify them in UIM, but you can view them. You can delete Sequence specifications that are not in use.

You can search for Sequence specifications by name, description, validity dates, minimum value, maximum value, and increment value.

See the following topics for more information about working with Sequence specifications:

- Searching for Entities
- Sequence Specification Summary Page

Sequence Specification Summary Page

You use the Sequence Specification Summary page to view information about Sequence specifications, which you use to define ranges of numbers and to determine how numbers are incremented for entities in UIM.

The Sequence Specification Summary page contains a Summary section that displays basic information about the entity, such as the name, description, and effective dates. Additionally, this page displays the minimum, maximum, and increment values defined for the specification (in Design Studio). See the Design Studio Help for more information about creating Sequence specifications.

Related Topics

Working with Sequence Specifications

Working in Entity Summary Pages

Working with Tags

User-defined tags store information about a configuration item. For example, user-defined tags may further describe a configuration item, describe a set of technical actions, or describe any type of custom information needed for service fulfillment. User-defined tags are returned in the response from the UIM Service Fulfillment Web Service GetConfigurationDifferences operation.

User-defined tags are created in Oracle Communications Service Catalog and Design - Design Studio and added to configuration items within Service, Logical Device, Logical Device Account, Network, and Place configuration specifications. In UIIM, tags are view-only, but you can delete orphaned tags.

See the following topics for more information about working with tags:

- Viewing Tags
- Deleting Tags

Viewing Tags

To view tags:

1. In the **Administration** group of the navigation section, click **Tags**.

   The Tags Search page appears.
2. Search for a tag.

   See "Searching for Entities" for more information.
3. In the Search Results section, click a tag link.

   The Tag page appears.
4. View the information for the tag.

Related Topics

Viewing Tags on Configuration Items

Viewing Tags on Configuration Items for a Specification

Deleting Tags

Deleting Tags

Tags are not editable in UIM. However, you can delete orphaned tags. Orphaned tags are tags that are no longer associated with a configuration item.

To delete orphaned tags:

1. In the **Administration** group of the navigation section, click **Tags**.

   The Tags Search page appears.

2. Search for a tag.

   See "Searching for Entities" for more information.

3. In the Search Results section, select a tag row (do not click a tag link).

4. Click **Delete**.

   If the tag you are attempting to delete is associated with a configuration item, a validation error prevents you from deleting the tag.

Related Topics

Viewing Tags

Viewing Tags on Configuration Items

Viewing Tags on Configuration Items for a Specification

Tag Page

You use the Tag page to view the tag definition.

The sections listed in the following table are specific to the Tag page.

Section	Description
Information	Displays basic information about the tag, such as **Name**, **Description**, and **Additional Information**. This information was defined when you created the tag.
Specifications	Displays any specifications with which the tag is associated. The fields that appear in the Specifications section are **Name**, **Description**, and **Entity Type**.

Related Topics

Working with Tags

Viewing Tags

Viewing Tags on Configuration Items

Viewing Tags on Configuration Items for a Specification

Deleting Tags