Oracle® Communications Convergent Charging Controller

Open Services Development Help

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Using Open Services Development Screens

The Open Services Development (OSD) user interface (UI) enables you to configure how incoming SOAP messages will be handled for any OSD data that is specific to a service provider, that is, one ACS customer. This chapter explains how to configure OSD in the OSD UI.

This chapter contains the following topics.

Find Screens

You use the Find screens to locate records in the **Operation Sets**, **Operations** and **Client ASPs** tabs.

While each of these tabs has a different results table, they all use the same mechanism to populate their tables.

Using the Find screen

If the **Service Provider** drop down list is present, it can be ignored, unless you are wanting to change provider on all the tabs.

The search text box (**Operation Set Name** in the example) is used to do a search on items beginning with the text typed. For example typing "Weekly" would return all operation sets whose name started with "Weekly".

Note: This search function is case sensitive - "week" would not find anything.

To start the search, click **Search**. All found items replace any previous table contents.

Once the record has been found, click on that table entry and click **Close** to return to the parent tab, which will be populated with the found record details.

Service Providers

The **Service Providers** tab allows you to select a service provider that will have OSD configuration.

Note: Once selected, data for the service provider is propagated to the following tabs:

- Service Providers

- Operation Sets
- Operations

Service Providers fields

This table describes the **Service Providers** tab fields.

Field	Description
Service Provider	The service provider that an ASP uses for the operation set. **Note:** • This will be the same provider for the Service Provider, Operation Sets and Operation tabs. • Selection of a different provider changes the screen contents as if **Clear** had been clicked.
Use Router	Flag to indicate that ASPs using operations belonging to this service provider access OSD through a router such as squid. If this flag is selected then the router port and router address are placed in the WSDL file. If this flag is not selected then ASPs access OSD on the SLCs directly for these operations. In this case, all the ports and addresses from the SLC ports panel are placed in the WSDL file and the router port and router address are not used.
Router Port	This is a single port in the range 1024 through 65535.
Router Address	Address of the router to use for load sharing.
Protocol	The protocol the ASPs should use to send the SOAP request envelope.

Edit Service Providers

Follow these steps to edit a service provider OSD interaction.

1. Select the **Service Provider** from the drop down list.

   Note:

   - This is a list of already established service providers (see **SMS Main menu > Services > ACS Services > Customers** tab.
   - The selected service provider is auto selected in the other tabs.
2. If load sharing is required, select **Use Router** check box, then:
   - Enter the router port in the **Router Port** field
   - Enter the router address in the **Router Address** field
3. Select the Protocol to be used:
   - HTTP
   - HTTPS
4. Amend the list of SLC ports to receive ASP input from.
   - To add a new port, see Adding SLC ports

- To change a port, see Editing SLC ports
- To delete a port, select the port in the table and click **Remove**

5. Click **Save**.

Adding SLC ports

Follow these steps to add a SLC port.

1. Click **Add**.

   The New Port List Entry screen displays.

2. Enter the new port number in the **Port** field. You must enter a value in the range 1024 to 65535.
3. Enter the port address in the **Address** field. You must enter the host name of a SLC running OSD.
4. Enter the interface name in the **Interface Name** field. You must enter a name that matches the name of a running osdInterface on the SLC, as defined in the **SLEE.cfg** file.

   To help improve performance, configure ports for more than one interface.

5. Click **Save**.

Related topic

Service Providers

Editing SLC ports

Follow these steps to edit an existing SLC port list entry.

1. Select the port entry that you want to change from the table.
2. Click **Edit**.

   The Edit Port List Entry screen displays.

3. (Optional) Enter a different port address in the **Address** field. You must specify the host name of a SLC running OSD.
4. (Optional) Type a different interface name in the **Interface Name** field. You must enter the name of a running osdInterface on the SLC, as defined in the **SLEE.cfg** file.
5. Click **Save**.

Related topic

Service Providers

Operation Sets

Operation sets are a collection, for ease of maintainability, of related operations.

The **Operation Sets** tab is where the selected service provider has all their sets of operations configured.

Each set can have any number of operations (see Operations) and each service provider can have any number of operation sets.

When generated by a control plan compile, all operations for the operation set are inserted into a single WSDL file.

Operation Sets fields

This table describes the **Operation Sets** tab fields.

Field	Description
Service Provider	The service provider for this operation set. **Note:** • This will be the same provider for the Service Provider, Operation Sets and Operation tabs. • Selection of a different provider changes the screen contents as if **Clear** had been clicked.
Operation Set Name	The name of this collection of operations. **Note:** There is a special PeriodicCharge set name for use with period charging pro-rating.
WSDL Location	Location of the control plan generated WSDL file for this operation set. **Note:** First part of this is set at installation time in the **sms.jnlp** file.
WSDL URL	Web URL for the WSDL file. **Note:** This is set at installation time in the **sms.jnlp** file and in **eserv.config** - `wsdlUriBaseName` parameter.
Service to Invoke	The service that will be used to invoke the control plan from the WSDL file. This must match a configured service on the SLC to trigger the control plan successfully. **Note:** This list is created at SMS package installation time in a database table. See Service Handlers. For meanings and uses of the different service handlers, see *ACS Technical Guide*, *CCS Technical Guide*, and *Notification Gateway Technical Guide*.
Max outstanding Transactions	This is the maximum number of SOAP requests for operations in this operation set that are allowed to be active at any one time. Any SOAP requests in excess of this will be rejected with HTTP error 503 (unavailable).

Warning: If either the WSDL location or WSDl URL are modified, then it is up to the user to configure the SMS file system and Apache so that the two are consistent.

Editing Operation Sets

Follow these steps to edit a service provider operation set.

1. Select the **Service Provider** from the drop down list.

   Note:

- This is a list of already established service providers (see **SMS Main menu > Services > ACS Services > Customers** tab.
- The selected service provider is auto selected in the other tabs.

2. To set the tab for a new operation set, click **Clear**.

   To locate an existing operation set for amending, click **Find** (see Find Screens).

   To remove an operation set, click **Delete**, and then confirm on the Delete Operation Set confirmation dialog.
3. Type the operation set name in the **Operation Set Name** field.

   Result: The name is inserted into the WSDL file location and URL.
4. Select the **Service to Invoke** from the drop down list.

   Tip: This should reflect the service the WSDL is going to invoke.
5. Type the maximum allowed outstanding transactions in the **Max Outstanding Transactions** field.
6. Click **Save**.

Operations

This table describes the **Operations** tab fields.

Field	Description
Service Provider	The service provider for for this operation. **Note:** • This will be the same provider for the **Service Provider**, **Operation Sets** and **Operation** tabs. • Selection of a different provider changes the screen contents as if **Clear** had been clicked.
Operation Name	The name of this operation. This is the name that the control plan uses when generating the WSDL file sub set.
Operation Set	The operation set that this operation will belong to. **Tip:** For periodic charges this must be `PeriodicCharge`.
Control Plan	The control plan that this WSDL sub set will invoke. This is automatically populated when saving a control plan with this operation name.
Enabled	If an operation is not enabled, the ASP will receive a SOAP fault with error 7 = operation not available.

Editing Operations

Follow these steps to edit a service provider operation.

1. Select the **Service Provider** from the drop down list.
2. To set the tab for a new operation, click **Clear**.

   To locate an existing operation for amending, click **Find** (see Find Screens).

   To remove an operation, click **Delete**, then confirm on the Delete confirmation dialog.

3. Type the operation name in the **Operation Name** field.

   Result: The name is inserted into the WSDL file location and URL.
4. Select the **Operation Set** for this operation from the drop down list.
5. Select the **Enabled** check box.
6. Click **Save**.
7. Repeat steps **4** to **6** for each operation set that you want to add this operation to.

Client ASPs

This table describes the function of each field.

Field	Description
Client ASP Name	The name of the ASP.
IP Address	The IP address for the ASP.
User Name	The user name for this ASP. The combination of user name and IP address is used to identify the ASP.
Max Tx/Sec	The maximum number of SOAP requests per second this ASP is allowed to send. Any SOAP requests in excess of this will be rejected with HTTP error 503 (unavailable).
Max Tx Outstanding	The maximum number of SOAP requests from this ASP that are allowed to be active at any one time. Any SOAP requests in excess of this will be rejected with HTTP error 503 (unavailable).
Change Password	The password used to authenticate this ASP.
Confirm Password	This must match Change Password value.

Edit Client ASPs

Follow these steps to edit a client ASP.

1. To amend or delete an ASP, use the **Find** functionality to locate the required ASP (see Find Screens).
2. To add a new ASP, click **Clear**.
3. Enter the new ASP name in the **Client ASP Name** field.
4. Enter or change the **IP Address**.
5. Enter or change the **User Name**.
6. Enter or change the maximum transaction rate in the **Max Tx/Sec** field.
7. Enter or change the maximum transaction backlog in the **Max Tx Outstanding** field.
8. Set the password for the SOAP HTML header in the **Change Password** and **Confirm Password** fields.

   Note: Any password will do, but a secure password containing characters and numbers is recommended.
9. Click **Save**.

Result: The **Add..** becomes available to do the next step.

10. Maintain the allowed operations for this ASP (see Add Allowed Operations).

Add Allowed Operations

Follow these steps to add an allowed operation.

1. Click **Add**.

   Result: The Allow Operation for ASP screen appears, with the fields defaulted as follows:

   - Service provider is the currently selected provider in other tabs
   - Operation set is the first in the list for the provider
   - Operation is the first in the list for the operation set

2. If required, select a new **Service Provider** from the drop down list.

   Note: The selected provider is also changed in the other OSD tabs and a prompt is made if there are unsaved changes.

3. If required, select the **Operation Set** from the drop down list.
4. If required, select the **Operation** from the drop down list.
5. Click **Save**.

   Result: The operation is added to the **Allowed Operations** table.

Related topic

Client ASPs

Remove Allowed Operations

Follow these steps to remove an allowed operation from this ASP.

1. Select the allowed operation to remove from this ASP from the **Allowed Operations** table.
2. Click **Remove...**.

   Result: The confirmation screen appears.

3. Click **Remove** to confirm the removal.

   Result: The allowed operation is removed from the list.

Related topic

Client ASPs

Notification Gateway User

The notification gateway user enables the Notification Gateway to access OSD remotely. You set the user credentials (username and password) for the notification gateway user on a service provider basis, on the **Notification Gateway** tab in the OSD UI. The username and password are stored in a secure credentials vault on the SMS.

The **Notification Gateway** tab is available in the UI only if the `jnlp.ECEExtensions` Java application property is present and set to `true` in the **/IN/html/sms.jnlp** configuration file. See sms.jnlp Configuration for more information.

Note: You can override user credentials by setting the [SERVICE/USER] and [SERVICE/PASS] parameters in the Notification Gateway **config.xml** file. You should set these parameters only if you do not want to store user credentials in the Convergent Charging Controller secure credentials vault. See *Notification Gateway Technical Guide* for more information.

Setting the Notification Gateway Username and Password

Follow these steps to set the user credentials for the notification gateway user for a selected service provider.

1. Select the **Notification Gateway** tab in the Open Services Development window.
2. Select the **Service Provider** from the drop down list.
3. Enter the name of the authorized user of the Notification Gateway in the **User Name** field.
4. Enter a new password for the user in the **Change Password** field.
5. Re-enter the password in the **Confirm Password** field.
6. Click **Save**.

   Result: The user credentials (username and password) are stored in the Convergent Charging Controller secure credentials vault on the SMS.

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OSD Feature Nodes

This chapter describes the Oracle Communications Convergent Charging Controller Open Services Development (OSD) feature node. If any additional custom feature nodes have been created and installed to fit your specific customer requirements, they will not appear in this list.

This chapter contains the following topics.

Available Feature Nodes

This table lists the feature node available from the OSD palette group and the feature node fast key. You can use the fast key to search for the feature node in the feature palette or the canvas.

Node name	Node description
Iterator	The Iterator node allows iterating through prefix tree, ordered prefix trees, or array elements, extracting the content of each entry or element and copying it to temporary storage variables. Fast key: ITRT

Disconnect Nodes Release Causes

This table lists the release causes you should use in Disconnect feature nodes that you include in your OSD control plans.

Cause	OSD Meaning
1	No such subscriber
3	Missing parameter
4	Mis-typed parameter
5	System error

Each cause is translated into a SOAP cause that is returned to the WSDL origin. This means that anyone trying to identify a fault with the control plan will be using accurate information.

Iterator

The Iterator node allows iterating through prefix tree, ordered prefix trees, or array elements, extracting the content of each entry or element and copying it to temporary storage variables.

Prefix trees and ordered prefix trees are defined in profile blocks. For more information on how to define these types of structures, see *ACS User's Guide*.

A telco or a third party (for example, an ASP) may require access to the Convergent Charging Controller platform from a WEB application (for example to transfer money from user A's account to user B's account, send a short message to user B and then tell user A what the balance and expiry date of all his balances are).

A control plan using the iterator node can perform part of this logic that deals with which parameters come in / go out through XML.

When the control plan is saved, a WSDL file is produced which can then be given to the third party or client ASP.

A SOAP request conforming to this WSDL and sent to the appropriate address and port will result in the control plan being run and a SOAP response containing the balances and expiry dates being sent back to the application.

Node exits

This node has one entry and four exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Next	A sub tag has been successfully processed, but there is at least another sub tag to process.
2	No more	A sub tag has been successfully processed and there are no more sub tags.
3	Data not found	Data could not be found at the profile filed (prefix tree) location.
4	Error	The node detected that two or more feature nodes are used simultaneously, which could result in each node attempting to copy into the same fields in Temporary Storage.

Configuring the node

Follow these steps to configure the Iterator node.

1. In the Source Profile Field section of the Configure Iterator node screen, select the **Data Type**, **Location**, and **Field** from the drop down lists for the node to iterate over.

   Result: The Elements section is populated with the sub tags and their storage location after the Iterator node has finished processing the selected profile field.

2. Click **Save**.