Oracle® Cloud

Using the Oracle Service Cloud (RightNow) Adapter with Oracle Integration Generation 2

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Oracle Cloud Using the Oracle Service Cloud (RightNow) Adapter with Oracle Integration Generation 2,

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Primary Author: Oracle Corporation

Contents

Preface

This guide describes how to configure this adapter as a connection in an integration in Oracle Integration.

> **Note:**
>
> The use of this adapter may differ depending on the features you have, or whether your instance was provisioned using Standard or Enterprise edition. These differences are noted throughout this guide.

Topics:

Audience

This guide is intended for developers who want to use this adapter in integrations in Oracle Integration.

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Oracle is fully committed to diversity and inclusion. Oracle respects and values having a diverse workforce that increases thought leadership and innovation. As part of our initiative to build a more inclusive culture that positively impacts our employees, customers, and

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Related Resources

See these Oracle resources:

- Oracle Cloud

  `http://cloud.oracle.com`

- *Using Integrations in Oracle Integration Generation 2*
- *Using the Oracle Mapper with Oracle Integration Generation 2*

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
`monospace`	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

1

Understand the Oracle Service Cloud (RightNow) Adapter

Review the following conceptual topics to learn about the Oracle Service Cloud (RightNow) Adapter and how to use it as a connection in integrations in Oracle Integration. A typical workflow of adapter and integration tasks is also provided.

Topics:

> **Note:**
>
> There are overall service limits for Oracle Integration. A service limit is the quota or allowance set on a resource. See Service Limits.

Oracle Service Cloud (RightNow) Adapter Capabilities

The Oracle Service Cloud (RightNow) Adapter enables you to create an integration with an Oracle Service Cloud (RightNow) application.

> **Note:**
>
> The Oracle Service Cloud (RightNow) Adapter was known as the Oracle RightNow Cloud Adapter in previous releases.

Oracle Service Cloud (RightNow) applications enable organizations to combine web, social network, and contact center customer experiences into a unified, cross-channel service solution in Oracle Cloud. Oracle Service Cloud (RightNow) provides the following benefits:

- Integrates easily with the Oracle Service Cloud (RightNow) application's WSDL file to produce a simplified, integration-centric WSDL.
- Generates automatic mapping to the exposed business object or event subscription that you select during adapter configuration:
  - Business object: Represents a self-contained business document that can be acted upon by the integration. An integration can send requests to create a new record for that business object. They can send a request either to update or delete an existing record for a business object. Integrations can also send requests to retrieve information about one or more records representing that business object.

  - Event subscription: Represents an event document to which you subscribe when the Oracle Service Cloud (RightNow) Adapter is configured in the trigger (source) direction. The event subscription is raised by the Oracle Service Cloud (RightNow) application.

- Supports the RightNow Object Query Language (ROQL) to query metadata information when the Oracle Service Cloud (RightNow) Adapter is configured in the invoke direction.
- Supports custom attributes (new Oracle Service Cloud (RightNow) concept custom attributes and custom fields with the default c package) in business objects to make use of the Oracle Service Cloud (RightNow) application's support for custom attributes. Note the following details:
  - Custom attributes and custom fields are visible in a hierarchal structure in the Oracle Mapper. For example, assume you create an integration in which you select the **Contact** business object on the Request page of the Adapter Endpoint Configuration Wizard. If you then go to the Oracle Mapper, and expand the **Contact** element, an element called **ContactCustomFields** is displayed. If you expand this element, you see that custom attributes are visible in a hierarchal structure in the tree. Custom attributes are also visible as part of custom packages in the Oracle Mapper.
  - If you have a prebuilt integration from an earlier release of Oracle Integration that contained business objects that now support custom attributes, those attributes are now visible in the Oracle Mapper after you regenerate the artifacts for the integration. However, they are not displayed in a hierarchal structure, but rather the flat structure of previous releases (not under any package). See Regenerating a WSDL File for Integrations.
  - Custom attributes are also visible in the generated artifacts that you can download by selecting **Actions** > **Export** on the page of an integration, such as in the generated WSDL file.
- Automatically handles security policy details required to connect to the Oracle Service Cloud (RightNow) application.
- Provides standard error handling capabilities.
- Enables you to perform CRUD (create, get, update, and destroy) operations against business objects in the Oracle Service Cloud (RightNow) application.
- Enables you to upload a file as an attachment to Oracle Service Cloud (RightNow).
- Enables you to download a file as an attachment from Oracle Service Cloud (RightNow) to Oracle Integration. After the file is downloaded, the Oracle Service Cloud (RightNow) Adapter exposes the file reference in the mapper for use by other adapters for further processing. The following functionality is supported:
  - You can download a single file at a time.
  - You can download any file from Oracle Service Cloud (RightNow).
  - The downloaded file is exposed to you as a virtual file system (VFS) file reference.

Video

Video

What Application Version Is Supported?

For information about which application version is supported by this adapter, see the Connectivity Certification Matrix.

See Connectivity Certification Matrix.

Workflow to Create and Add an Oracle Service Cloud (RightNow) Adapter Connection to an Integration

You follow a very simple workflow to create a connection with an adapter and include the connection in an integration in Oracle Integration.

This table lists the workflow steps for both adapter tasks and overall integration tasks, and provides links to instructions for each step.

Step	Description	More Information
1	Create the adapter connections for the applications you want to integrate. The connections can be reused in multiple integrations and are typically created by the administrator.	Create an Oracle Service Cloud (RightNow) Adapter Connection
2	Create the integration. When you do this, you add trigger and invoke connections to the integration.	Create Integrations and Add the Oracle Service Cloud (RightNow) Adapter Connection to an Integration
3	Map data between the trigger connection data structure and the invoke connection data structure.	Map Data in *Using Integrations in Oracle Integration Generation 2*
4	(Optional) Create lookups that map the different values used by those applications to identify the same type of object (such as gender codes or country codes).	Manage Lookups in *Using Integrations in Oracle Integration Generation 2*
5	Activate the integration.	Manage Integrations in *Using Integrations in Oracle Integration Generation 2*
6	Monitor the integration on the dashboard.	Monitor Integrations in *Using Integrations in Oracle Integration Generation 2*
7	Track payload fields in messages during runtime.	Assign Business Identifiers for Tracking Fields in Messages and Manage Business Identifiers for Tracking Fields in Messages in *Using Integrations in Oracle Integration Generation 2*
8	Manage errors at the integration level, connection level, or specific integration instance level.	Manage Errors in *Using Integrations in Oracle Integration Generation 2*

2

Create an Oracle Service Cloud (RightNow) Adapter Connection

A connection is based on an adapter. You define connections to the specific cloud applications that you want to integrate.

Topics:

Prerequisites for Creating a Connection

You must satisfy the following prerequisites to create a connection with the Oracle Service Cloud (RightNow) Adapter:

- Subscribe to Oracle Service Cloud (RightNow). This action enables you to create an Oracle Service Cloud (RightNow) user account with the correct privileges. You specify this user account when creating an Oracle Service Cloud (RightNow) Adapter connection on the Connections page. See Oracle Service Cloud. See Configure Connection Security.
- Obtain the necessary Oracle Service Cloud (RightNow) service catalog service WSDL URL. This WSDL can include support for both business objects and event subscriptions. See Obtain the Oracle Service Cloud (RightNow) WSDL. See Configure Connection Properties.
- To exchange events, you must perform a number of configuration steps. For an example of how to exchange events between Oracle Service Cloud (RightNow) and another application, see Enable Event Subscriptions in the Oracle Service Cloud (RightNow) Adapter.
- If you create an integration in which a trigger Oracle Service Cloud (RightNow) Adapter connection selects a business object, you must create a custom event handler PHP script or use a SOAP client to invoke the integration.

Obtain the Oracle Service Cloud (RightNow) WSDL

You must obtain the Oracle Service Cloud (RightNow) WSDL. Only the standard WSDL is supported. The partner WSDL is not supported.

The standard WSDL can include support for both business objects and event subscriptions. This enables you to receive either a business object or an event subscriptions as a request from the Oracle Service Cloud (RightNow) application. Event subscriptions are supported only if the Oracle Service Cloud (RightNow) application version is equal to or greater than

version 15.5 (May 2015 release). Otherwise, only business objects are visible for selection in the configuration wizard.

To obtain the standard WSDL:

> **Note:**
>
> Note the following details:
>
> - For event subscriptions in Oracle Service Cloud (RightNow) release 17.8, use only Oracle Service Cloud (RightNow) WSDL version 1.3.
> - Permissions for the Public SOAP API must be enabled for the user account to enable use of the Oracle Service Cloud (RightNow) Connect Web Services for SOAP API. Permissions for the Public SOAP API enable staff members with this profile to access the public SOAP API through account or session authentication.
> - The Oracle Service Cloud (RightNow) Adapter does not support a partner WSDL/generic WSDL. Therefore, the following URL is not supported.
>
>   ```
>   https://integration-test.rightnowdemo.com/cgi-bin/
>   integration_test.cfg/services
>   /soap?wsdl=generic
>   ```

1. Collect the following details from your Oracle Service Cloud (RightNow) Cx Account:
   - Host
   - Interface name
   - User name and password
2. Open your web browser and enter the following URL to obtain the standard WSDL, replacing the host name and interface details as appropriate.

For Oracle Service Cloud (RightNow) Sites On...	The Following Format Enables the Adapter To Access...

May 2017 versions or earlier	• The latest version of the Oracle Service Cloud (RightNow) WSDL:
	
	`https://host_name/cgi-bin/interface.cfg/services/soap?wsdl`
	
	For example:
	
	`https://integration-test.rightnowdemo.com/cgi-bin/integration_test.cfg/services/soap?wsdl`
	
	• The WSDL pertaining to a specific API version. This format is recommended to protect your integrations from being impacted by backwards incompatible changes that can be introduced by a new API version.
	
	`https://integration-test.rightnowdemo.com/cgi-bin/integration_test.cfg/services/soap?wsdl=typed`
	
	For example:
	
	`https://integration-test.rightnowdemo.com/cgi-bin/integration_test.cfg/services/soap?wsdl=typed_v1.3`

For Oracle Service Cloud (RightNow) Sites On...	The Following Format Enables the Adapter To Access...

August 2017 versions or later	• The latest version of the Oracle Service Cloud (RightNow) WSDL:
	
	`https://host_name/services/soap/connect/soap?wsdl`
	
	For example:
	
	`https://integration-test.rightnowdemo.com/services/soap/connect/soap?wsdl`
	
	• The WSDL pertaining to a specific API version. This format is recommended to protect your integrations from being impacted by backwards incompatible changes that can be introduced by a new API version.
	
	`https://host_name/services/soap/connect/soap?wsdl=typed`
	
	For example:
	
	`https://integration-test.rightnowdemo.com/services/soap/connect/soap?wsdl=typed_v1.3`
	
	`https://integration-test.rightnowdemo.com/services/soap/connect/soap?wsdl=typed_v1.4`

Note:

The URL format that existed prior to August 2017 continues to work provided that you explicitly specify the API version. For example, any Oracle Service Cloud (RightNow) connections created in Oracle Integration using the following URL format continue to work even after the Oracle Service Cloud (RightNow) site is upgraded to August 2017 or later:

```
https://integration-test.rightnowdemo.com/cgi-bin/
integration_test.cfg/services/soap?wsdl=typed_v1.3
```

Any Oracle Service Cloud (RightNow) connections created with the following format without the specific API version do *not* work when the Oracle Service Cloud (RightNow) site is upgraded to August 2017 or later:

```
https://host_name/cgi-bin/interface.cfg/services/soap?wsdl
```

The Oracle Service Cloud (RightNow) connection URL must be modified to either of the following formats:

```
https://host_name/services/soap/connect/soap?wsdl=typed

https://integration-test.rightnowdemo.com/cgi-bin/
integration_test.cfg/services/soap?wsdl=typed
```

For example:

```
https://integration-test.rightnowdemo.com/services/soap/connect/soap?
wsdl=typed_v1.3

https://integration-test.rightnowdemo.com/cgi-bin/
integration_test.cfg/services/soap?wsdl=typed_v1.3
```

Enable Event Subscriptions in the Oracle Service Cloud (RightNow) Adapter

Before you can subscribe to events with the Oracle Service Cloud (RightNow) Adapter, you must perform a series of configuration tasks.

- Verify the Ability to Publish Business Events
- Display All Configuration Parameters Associated with Data Synchronization
- Enable Data Synchronization Functionality
- Set the IP Range for Incoming Messages (This step is optional)
- Set the Credentials to Use for Incoming Requests
- Set the Credentials to Use for Outgoing Requests

Verify the Ability to Publish Business Events

This integration is designed to work with Oracle Service Cloud (RightNow) Release 15.8.

To verify the ability to publish business events:

1. Log in to the Oracle Service Cloud (RightNow) application as a user with administrator privileges.
2. In the navigation pane, click **Configuration** > **Site Configuration** > **Configuration Settings**.

   A search page is displayed.
3. In the **Configuration Base** section, select only the **Site** option.
4. In the **Key** field, enter a wildcard string such as `EVENT%`.
5. Click **Search**.

   This search returns all strings beginning with **EVENT**.

   If several configuration parameters beginning with **EVENT**_ are displayed (for example, **EVENT_NOTIFICATION_ENABLED**), the functionality to publish events is available in this version of the Oracle Service Cloud (RightNow) application.

Display All Configuration Parameters Associated with Data Synchronization

1. Ensure that the following configuration parameters are displayed:
   - **EVENT_NOTIFICATON_ENABLED**
   - **EVENT_NOTIFICATION_MAPI_SEC_IP_RANGE**
   - **EVENT_NOTIFICATION_MAPI_USERNAME**
   - **EVENT_NOTIFICATION_MAPI_PASSWD**
   - **EVENT_NOTIFICATION_SUBSCRIBER_USERNAME**
   - **EVENT_NOTIFICATION_SUBSCRIBER_PASSWD**

Enable Data Synchronization Functionality

To enable data synchronization functionality:

By default (that is, on a newly-provisioned Oracle Service Cloud (RightNow) instance), the data synchronization functionality is *not* enabled. It must be manually enabled (if necessary).

1. From the Results page, select **EVENT_NOTIFICATION_ENABLED**.

   EVENT_NOTIFICATION_ENABLED is a boolean parameter. It is the global switch that controls whether business events from Oracle Service Cloud (RightNow) are published to other (external) applications. The default value is **No**, meaning that events are *not* published to external applications.
2. In the **EVENT_NOTIFICATION_ENABLED** tab, select **Yes** from the **Required** list.
3. Click the **Save & Close** button.

Set the IP Range for Incoming Messages (This step is optional)

By default, the configuration parameter **EVENT_NOTIFICATION_MAPI_SEC_IP_RANGE** is empty. This parameter enables incoming messages to be accepted only if coming from a specific IP address. This is an optional parameter. If not set, no IP restrictions are enforced and requests from any IP address are accepted. If the parameter has even one value (that is, not null), only requests from the specified IP address are accepted. To limit the addresses from which requests are accepted, enter them as comma-separated values.

1. From the list of configuration parameters, click the item named **EVENT_NOTIFICATION_MAPI_SEC_IP_RANGE**.
2. On the page that is displayed, enter the list of IP addresses as comma-separated values.
3. Click the **Save & Close** button.

Set the Credentials to Use for Incoming Requests

The **EVENT_NOTIFICATION_MAPI_USERNAME** and **EVENT_NOTIFICATION_MAPI_PASSWD** parameters store the credentials used by external applications while invoking Oracle Service Cloud (RightNow) web services for subscription requests or transactional requests. Both parameters have no default values; you must specify values for each.

> **Note:**
>
> You must specify a user name that does *not* correlate with an existing (actual) user. If you specify an actual user name, you receive an error message that includes details similar to the following:
>
> ```
> Fault String : Invalid Field While processing Contact-
> >ExternalReference(string). Fault Details :
> ```
>
> When Oracle Integration asks for the credentials to communicate with Oracle Service Cloud (RightNow), it uses those associated with **EVENT_NOTIFICATION_MAPI_USERNAME** and **EVENT_NOTIFICATION_MAPI_PASWD** to send messages to Oracle Service Cloud (RightNow).

- **EVENT_NOTIFICATION_MAPI_USERNAME** stores the user name specified in the header of incoming requests.
- **EVENT_NOTIFICATION_MAPI_PASWD** stores the password associated with the user name specified. The password is stored in encrypted format.

1. From the list of configuration parameters, click **EVENT_NOTIFICATION_MAPI_USERNAME**.
2. Specify the username and save the changes.
3. Specify the password for **EVENT_NOTIFICATION_MAPI_PASSWD** and save the changes.

Set the Credentials to Use for Outgoing Requests

The **EVENT_NOTIFICATION_SUBSCRIBER_USERNAME** and **EVENT_NOTIFICATION_SUBSCRIBER_PASSWD** parameters store the credentials used by Oracle Service Cloud (RightNow) while sending event notifications to the external subscriber. Neither parameter has a default value; you must specify values for each.

- The **EVENT_NOTIFICATION_SUBSCRIBER_USERNAME** stores the user name to use in the event notification message sent to the external application subscribed to the event.
- **EVENT_NOTIFICATION_SUBSCRIBER_PASSWD** stores the password associated with the user name specified. The password is stored in encrypted format.

1. From the list of configuration parameters, click **EVENT_NOTIFICATION_SUBSCRIBER_USERNAME**.
2. Specify the username and save the changes. Ensure that the user is defined in Oracle Integration.
3. Specify the password for **EVENT_NOTIFICATION_SUBSCRIBER_PASSWD**.
4. Save the changes.

Create a Connection

Before you can build an integration, you have to create the connections to the applications with which you want to share data.

To create a connection in Oracle Integration:

1. In the left navigation pane, click **Home** > **Integrations** > **Connections**.
2. Click **Create**.

> **Note:**
>
> You can also create a connection in the integration canvas of:
>
> - An orchestrated integration (See Define Inbound Triggers and Outbound Invokes.)
> - A basic routing integration (See Add a Trigger (Source) Connection.)

3. In the Create Connection — Select Adapter dialog, select the adapter to use for this connection. To find the adapter, scroll through the list, or enter a partial or full name in the **Search** field and click

Search.
4. In the Create Connection dialog, enter the information that describes this connection.
    a. Enter a meaningful name to help others find your connection when they begin to create their own integrations. The name you enter is automatically added in

capital letters to the **Identifier** field. If you modify the identifier name, don't include blank spaces (for example, `SALES OPPORTUNITY`).

b. Enter optional keywords (tags). You can search on the connection keywords on the Connections page.

c. Select the role (direction) in which to use this connection (trigger, invoke, or both). Only the roles supported by the adapter are displayed for selection. When you select a role, only the connection properties and security policies appropriate to that role are displayed on the Connections page. If you select an adapter that supports both invoke and trigger, but select only one of those roles, you'll get an error when you try to drag the adapter into the section you didn't select. For example, let's say you configure a connection for the Oracle Service Cloud (RightNow) Adapter as only an **invoke**. Dragging the adapter to a **trigger** section in the integration produces an error.

d. Enter an optional description of the connection.

5. Click **Create**.

   Your connection is created. You're now ready to configure the connection details, such as connection properties, security policies, connection login credentials, and (for certain connections) agent group.

Configure Connection Properties

Enter connection information so your application can process requests.

1. Go to the **Connection Properties** section.
2. In the **WSDL URL** field, specify the WSDL to use in this integration. For example:

   For May 2017 versions or earlier:

   ```
   https://integration-test.rightnowdemo.com/cgi-bin/integration_test.cfg/
   services/soap?wsdl
   ```

   ```
   https://integration-test.rightnowdemo.com/cgi-bin/integration_test.cfg/
   services/soap?wsdl=typed_v1.3
   ```

   For August 2017 versions or later

   ```
   https://integration-test.rightnowdemo.com/services/soap/connect/soap?wsdl
   ```

   ```
   https://integration-test.rightnowdemo.com/services/soap/connect/soap?
   wsdl=typed_v1.3
   ```

   ```
   https://integration-test.rightnowdemo.com/services/soap/connect/soap?
   wsdl=typed_v1.4
   ```

   See Obtain the Oracle Service Cloud (RightNow) WSDL.

Configure Connection Security

Configure security for your Oracle Service Cloud (RightNow) Adapter connection by selecting the security policy and security token.

1. Go to the **Security** section.
2. Enter your login credentials:
   a. In the **Security Policy** field, select the security policy. Only the Username Password Token policy is supported. It cannot be deselected.
   b. Enter a username and password to connect to the database.

Test the Connection

Test your connection to ensure that it's configured successfully.

1. In the page title bar, click **Test**. What happens next depends on whether your connection uses a Web Services Description Language (WSDL) file.

If Your Connection...	Then...
Doesn't use a WSDL	The test starts automatically and validates the inputs you provided for the connection.
Uses a WSDL	A dialog prompts you to select the type of connection testing to perform: • **Validate and Test**: Performs a full validation of the WSDL, including processing of the imported schemas and WSDLs. Complete validation can take several minutes depending on the number of imported schemas and WSDLs. No requests are sent to the operations exposed in the WSDL. • **Test**: Connects to the WSDL URL and performs a syntax check on the WSDL. No requests are sent to the operations exposed in the WSDL.

2. Wait for a message about the results of the connection test.
   - If the test was successful, then the connection is configured properly.
   - If the test failed, then edit the configuration details you entered. Check for typos, verify URLs and credentials, and download the diagnostic logs for additional details. Continue to test until the connection is successful.
3. When complete, click **Save**.

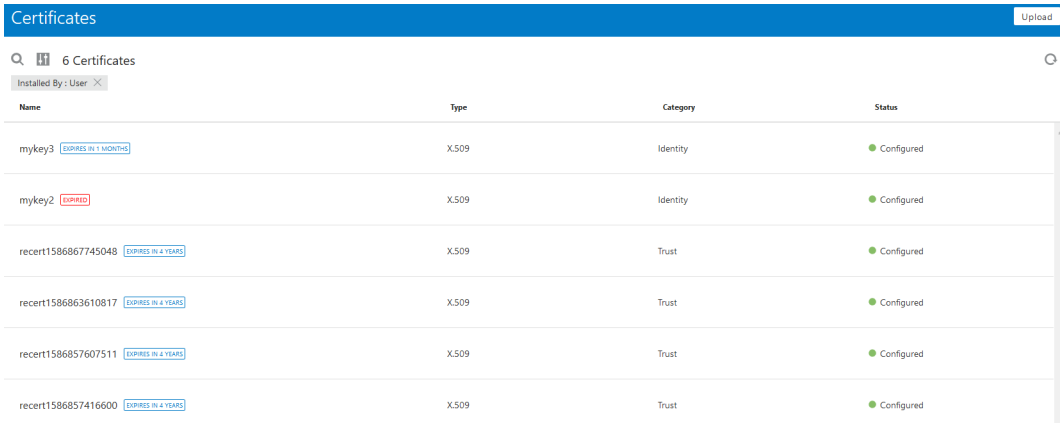
Upload an SSL Certificate

Certificates are used to validate outbound SSL connections. If you make an SSL connection in which the root certificate does not exist in Oracle Integration, an exception is thrown. In that case, you must upload the appropriate certificate. A certificate enables Oracle Integration to connect with external services. If the external endpoint requires a specific certificate, request the certificate and then upload it into Oracle Integration.

To upload an SSL certificate:

1. In the left navigation pane, click **Home** > **Settings** > **Certificates**.
   All certificates currently uploaded to the trust store are displayed in the Certificates dialog. The
   
   link enables you to filter by name, certificate expiration date, status, type, category,

and installation method (user-installed or system-installed). Certificates installed by the system cannot be deleted.



2. Click **Upload** at the top of the page.
   The Upload Certificate dialog box is displayed.
3. Enter an alias name and optional description.
4. In the **Type** field, select the certificate type. Each certificate type enables Oracle Integration to connect with external services.
   - **X.509 (SSL transport)**
   - **SAML (Authentication & Authorization)**
   - **PGP (Encryption & Decryption)**

X.509 (SSL transport)

1. Select a certificate category.
   a. **Trust**: Use this option to upload a trust certificate.
      i. Click **Browse**, then select the trust file (for example, `.cer` or `.crt`) to upload.
   b. **Identity**: Use this option to upload a certificate for two-way SSL communication.
      i. Click **Browse**, then select the keystore file (`.jks`) to upload.
      ii. Enter the comma-separated list of passwords corresponding to key aliases.

      > **Note:**
      >
      > When an identity certificate file (JKS) contains more than one private key, all the private keys must have the same password. If the private keys are protected with different passwords, the private keys cannot be extracted from the keystore.

      iii. Enter the password of the keystore being imported.
   c. Click **Upload**.

SAML (Authentication & Authorization)

1. Note that **Message Protection** is automatically selected as the only available certificate category and cannot be deselected. Use this option to upload a keystore certificate with SAML token support. Create, read, update, and delete (CRUD) operations are supported with this type of certificate.
2. Click **Browse**, then select the certificate file (`.cer` or `.crt`) to upload.
3. Click **Upload**.

PGP (Encryption & Decryption)

1. Select a certificate category. Pretty Good Privacy (PGP) provides cryptographic privacy and authentication for communication. PGP is used for signing, encrypting, and decrypting files. You can select the private key to use for encryption or decryption when configuring the stage file action.
    a. **Private**: Uses a private key of the target location to decrypt the file.
        i. Click **Browse**, then select the PGP file to upload.
        ii. Enter the PGP private key password.
    b. **Public**: Uses a public key of the target location to encrypt the file.
        i. Click **Browse**, then select the PGP file to upload.
        ii. In the **ASCII-Armor Encryption Format** field, select **Yes** or **No**. **Yes** shows the format of the encrypted message in ASCII armor. ASCII armor is a binary-to-textual encoding converter. ASCII armor formats encrypted messaging in ASCII. This enables messages to be sent in a standard messaging format. This selection impacts the visibility of message content. **No** causes the message to be sent in binary format.
        iii. From the **Cipher Algorithm** list, select the algorithm to use. Symmetric-key algorithms for cryptography use the same cryptographic keys for both encryption of plain text and decryption of cipher text.
    c. Click **Upload**.

Refresh Integration Metadata

You can manually refresh the currently-cached metadata available to adapters that have implemented metadata caching. Metadata changes typically relate to customizations of integrations, such as adding custom objects and attributes to integrations. There may also be cases in which integrations have been patched, which results in additional custom objects and attributes being added. This option is similar to clearing the cache in your browser. Without a manual refresh, a staleness check is only performed when you drag a connection into an integration. This is typically sufficient, but in some cases you may know that a refresh is required. For these cases, the **Refresh Metadata** menu option is provided.

To refresh integration metadata:

> **Note:**
>
> The **Refresh Metadata** menu option is only available with adapters that have implemented metadata caching.

1. In the left navigation pane, click **Home** > **Integrations** > **Connections**.
2. Go to the row of the connection to refresh.
3. Select **Refresh Metadata** from the  menu.

   A message is displayed indicating that the refresh was successful.

   ```
   Metadata refresh for connection "connection_type" has been initiated
   successfully.
   ```

3

Add the Oracle Service Cloud (RightNow) Adapter Connection to an Integration

When you drag the Oracle Service Cloud (RightNow) Adapter into the trigger or invoke area of an integration, the Adapter Endpoint Configuration Wizard appears. This wizard guides you through the configuration of the Oracle Service Cloud (RightNow) Adapter endpoint properties.

These topics describe the wizard pages that guide you through configuration of the Oracle Service Cloud (RightNow) Adapter as a trigger or invoke in an integration.

Topics:

Basic Info Page

You can enter a name and description on the Basic Info page of each adapter in your integration.

Element	Description
What do you want to call your endpoint?	Provide a meaningful name so that others can understand the responsibilities of this connection. You can include English alphabetic characters, numbers, underscores, and hyphens in the name. You can't include the following characters: • No blank spaces (for example, `My Inbound Connection`) • No special characters (for example, `#;83&` or `righ(t)now4`) except underscores and hyphens • No multibyte characters
What does this endpoint do?	Enter an optional description of the connection's responsibilities. For example: `This connection receives an inbound request to synchronize account information with the cloud application.`

Trigger Request Page

Enter the Oracle Service Cloud (RightNow) Adapter trigger request values for your integration. The values you specify start the integration.

- Select to receive a business object as a request from the Oracle Service Cloud (RightNow) application. This selection invokes the integration.
- Select to receive an event subscription as a request from the Oracle Service Cloud (RightNow) application. This selection invokes the integration. Event subscriptions are supported only if the Oracle Service Cloud (RightNow) application version is equal to or greater than release 15.5 (May 2015). Otherwise, only business objects are supported.

> **Note:**
>
> The Oracle Service Cloud (RightNow) application has a limit of 20 subscriptions for every available event subscription. For example, you can build a maximum of 20 integrations, with all subscribing to the Customer Created Event integration and 20 integrations subscribing to the Contact Destroy Event integration. If you create a 21st integration for the same event subscription, this may lead to errors during integration activation.

Element	Description
Configure a Request	Select the endpoint configuration option by choosing a business object or event subscription. • **With Business Objects**: Select to display a list of business objects. • **Event Subscription**: Select to display a list of event subscriptions to which to subscribe.
Select a Business Object (is displayed if **With Business Objects** is selected)	Select the business object from the Oracle Service Cloud (RightNow) application to receive as a request that starts the integration.
Filter by object name (is displayed if **With Business Objects** is selected)	Enter the initial letters to filter the display of business objects. You can also select a filter type: • **All**: Displays all objects. • **Custom**: Displays objects you created. These business objects are identified by special icons. The naming convention is a combination of the package name and object name joined by a ".". For example, if there is a custom object package called `CO` and an object named `PurchaseProduct`, the wizard displays the custom object as `CO.PurchaseProduct`. • **Standard**: Displays business objects delivered as part of the standard Oracle Service Cloud (RightNow) application.

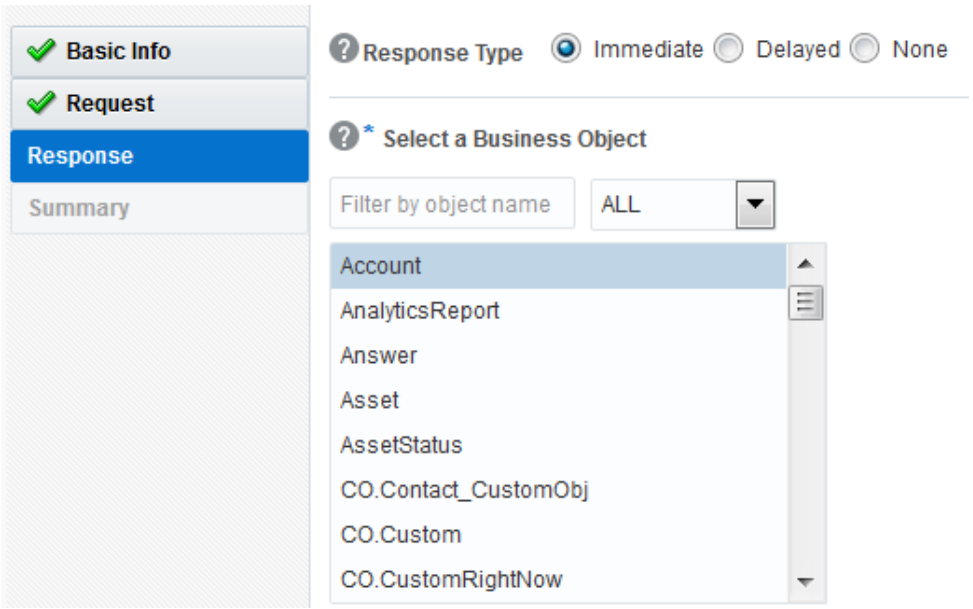
Element	Description
Select Event (is displayed if **Event Subscription** is selected)	Select the event subscription from the Oracle Service Cloud (RightNow) application. This event is received as a request that starts the integration. **Note**: Only the **Organization**, **Contact**, and **Incident** business objects are supported for event subscriptions in this release.
Event Name Filter (is displayed if **Event Subscription** is selected)	Enter the initial letters to filter the display of business events.

Trigger Response Page

Enter the Oracle Service Cloud (RightNow) Adapter trigger response values for your integration.

- Immediate (synchronous) response: A response business object is immediately returned as output. You select **Immediate** as the response type on the Response page and select the business object as part of the response to the client. (See Table 3-1 for instructions.)
- Delayed (asynchronous) response: A callback service to which to route the callback is exposed. You select **Delayed** as the response type on the Response page and select the operation and business object that comprise a successful callback response, a failed callback response, or both. (See Table 3-2 for instructions.)
- No response is required: You select **None** on the Response page because a response is not required. (See Table 3-3 for instructions.)

  The Response page looks as follows:



The following table describes the fields available if an immediate (synchronous) response is required.

Table 3-1 Response Type — Immediate (Synchronous) Response is Required

Element	Description
Response Type	Select **Immediate** for the Oracle Service Cloud (RightNow) application to wait until a response is received from the integration. This is also known as the request and response message exchange pattern. This is the default selection.
Filter by object name	Enter the initial letters to filter the display of business objects. You can also select a filter type: • **All**: Displays all objects. • **Custom**: Displays objects you created. These business objects are identified by special icons. The naming convention is a combination of the package name and object name joined by a ".". For example, if there is a custom object package called `CO` and an object named `PurchaseProduct`, the wizard displays the custom object as `CO.PurchaseProduct`. • **Standard**: Displays business objects delivered as part of the standard Oracle Service Cloud (RightNow) application.
Select a Business Object	Select the business object for the integration to send as a response document to the Oracle Service Cloud (RightNow) application.

The following table describes the fields available if a delayed (asynchronous) callback response is required. You can configure a successful callback response, a failed callback response, or both.

Table 3-2 Response Type — Delayed (Asynchronous) Response is Required

Element	Description
Response Type	Select **Delayed** to configure a successful callback response, a failed callback response, or both. This enables you to configure the operation and business objects that you want the Oracle Service Cloud (RightNow) application to process as part of a successful callback response, failed callback response, or both.

Table 3-2 (Cont.) Response Type — Delayed (Asynchronous) Response is Required

Element	Description
Successful Response/Failed Response	Select the type of callback to configure. After configuring one type of callback (for example, successful), you can configure the other type (for example, failed). • **Successful Response**: Select to configure the operation and business objects that you want the Oracle Service Cloud (RightNow) application to process as part of a successful callback response sent by the integration. • **Failed Response**: Select to configure the operation and business objects that you want the Oracle Service Cloud (RightNow) application to process as part of a failed callback response sent by the integration.
Select an Operation Type	Select the type of create, read, update, and delete (CRUD) operation to perform on the business object. Only CRUD is currently available for selection. CRUD represents functions implemented in relational database applications. Each letter maps to a standard SQL statement, HTTP method, or DDS operation. The following CRUD operations are supported: • **Create** • **Destroy** • **Update**
Filter By object name	Enter the initial letters to filter the display of business objects. You can also select a filter type: • **All**: Displays all objects. • **Custom**: Displays objects you created. These business objects are identified by special icons. The naming convention is a combination of the package name and object name joined by a '.'. For example, if there is a custom object package called `CO` and an object named `PurchaseProduct`, the wizard displays the custom object as `CO.PurchaseProduct`. • **Standard**: Displays business objects delivered as part of the Oracle Service Cloud (RightNow) application.
Select Business Objects (Service *Version* API)	Select the business objects for the integration to send as a response document to the Oracle Service Cloud (RightNow) application.
Your Selected Business Objects	Displays the selected business objects.

The following table describes the fields available if no response is required.

Table 3-3 Response Type — No Response is Required

Element	Description
Response Type	Select **None**.
Select Business Object	If you select **None**, this section is hidden.

Invoke Operation Page

Enter the Oracle Service Cloud (RightNow) invoke operation values for your integration.

Element	Description
Select an Operation Mode	Select the operation mode in which to define business objects: • **Single Operation**: Select to configure a single operation. • **Batch Operation**: Select to configure multiple operations in a batch. This enables you to run multiple operations in a defined sequence. Selecting this option refreshes the page to display an option for the following: – **Click to add an operation to the List**: Click to create a list of batch operations and their business objects. The operations are performed in the order in which they appear in the list (from top to bottom). When complete, click **OK**. When you complete invoke Oracle Service Cloud (RightNow) Adapter configuration and click **Next** to access the Summary page, you can perform the following batch operation tasks: – **Edit** icon: Click to edit an operations row in the table or change the order of batch operations. – **Delete** icon: Click to delete a selected operation row in the table.

Element	Description
Select an Operation Type	Select the type of operation to perform on the business objects in an Oracle Service Cloud (RightNow) application: **Note**: You can select CRUD business operations or query objects such as **QueryCSV** (tabular query) or **QueryObjects**. However, if you want to access other operations exposed by Oracle Service Cloud (RightNow) such as `GetFileData`, use the SOAP Adapter or REST Adapter. • **CRUD**: Represents the create, read, update, delete, or destroy operations to perform on Oracle Service Cloud (RightNow) business objects. Each letter maps to a standard SQL statement, HTTP method, or DDS operation. Select the CRUD operation to perform on the business object: **Create**, **Destroy**, **Get**, or **Update**. If you select **Create** or **Update**, you can select a business object that supports file attachments. This enables you to upload files to Oracle Service Cloud (RightNow). • **File Attachment**: Select to download a file as an attachment from Oracle Service Cloud (RightNow) to Oracle Integration. After selecting **File Attachment**, you are prompted to select the business object from which to download the file attachment in the **Select a Business Object you would like to download the attachment from** table. After the file is downloaded, the Oracle Service Cloud (RightNow) Adapter exposes the file reference in the mapper for use by other adapters for further processing. • **ROQL**: (RightNow Object Query Language) enables you to define an ROQL-based query to send as a request to perform in the Oracle Service Cloud (RightNow) application. If you select this option, the page is refreshed to display a field for entering a query. – **ROQL query statement**: Enter a valid ROQL query in the field. For example: `SELECT contacts FROM organization WHERE name = 'RightNow'` Use the **Find** field to search for an entry in the ROQL query and the **Go to Line** field to go to a specific line in the ROQL query. The query can include custom fields and parameters. – **Parameter Bindings**: Displays any parameter bindings included in the specified query. For

Element	Description
	example, `orgId` is a parameter in the following query: `SELECT Organization FROM Organization WHERE id = &orgId` Enter a query with a parameter and click the **Refresh** icon to the right of **Parameter Bindings**. This displays a text box in which to enter a test value for the parameter. – **Page Size**: Optionally enter a value to limit the number of objects returned in a query response. An ROQL query with an unbounded where condition can result in increased application memory load and may lead to overall system slowness. This field is only displayed if you selected the **QueryObjects** operation. – **Test My Query**: Click to fully validate the query against the Oracle Service Cloud (RightNow) application. Query results are displayed. If errors occur, you receive results about how to correct the query. If you do not fully validate your query by pressing this button, it is still validated when you press **Next**, but with potential limitations based on how the query is written. See Write Fully-Validated ROQL Query Statements. See Specify QueryCSV Statements When Configuring the Oracle Service Cloud (RightNow) Adapter as an Invoke.
Filter by object name	Enter the initial letters of an object name to display a range of objects. You can also select a filter type: • **All**: Displays all objects. • **Custom**: Displays objects you created. These business objects are identified by special icons. The naming convention is a combination of the package name and object name joined by a '.'. For example, if there is a custom object package called `CO` and an object named `PurchaseProduct`, the wizard displays the custom object as `CO.PurchaseProduct`. • **Standard**: Displays business objects delivered as part of the Oracle Service Cloud (RightNow) application.

Element	Description
Select Business Objects (Service Now *Version* API)	Select a single business object or multiple business objects from the Oracle Service Cloud (RightNow) application. The selected operation acts upon these business objects. The Oracle Service Cloud (RightNow) API version that is displayed is based on the Oracle Service Cloud (RightNow) application version to which you are connected. When you complete invoke operation configuration, the selected operation and business objects are defined in the integration-centric WSDL file.
Your Selected Business Objects	Displays the selected business objects.
Processing Options	Select to enable aspects of server-side processing. By default, no options are selected. When complete, click **OK**. • **Suppress External Events**: Select to prevent the Oracle Service Cloud (RightNow) application from processing any external events raised after the completion of create, update, or delete operations. • **Suppress Rules**: Select to prevent business rules from running after the completion of create, update, or delete operations. Business rules are tools for simplifying and automating common business tasks. See the Oracle Service Cloud (RightNow) documentation for more information. • **Suppress Response**: Select to prevent the CRUD **Create** operation from returning a response ID. If this check box is disabled, the **Create** operation returns an ID of the created object. • **Commit After**: Select to group multiple operations in a single transaction. At runtime, when a set of operations in a batch is defined as part of a single operation, the **Commit After** action is sent after the last operation in that transaction boundary. When an operation from the subset of the batch operation fails, it is handled by throwing a fault to the client. This option is only available with batch operations.

Summary Page

You can review the specified adapter configuration values on the Summary page.

Element	Description
Summary	Displays a summary of the configuration values you defined on previous pages of the wizard. The information that is displayed can vary by adapter. For some adapters, the selected business objects and operation name are displayed. For adapters for which a generated XSD file is provided, click the XSD link to view a read-only version of the file. To return to a previous page to update any values, click the appropriate tab in the left panel or click **Back**. To cancel your configuration details, click **Cancel**.

4

Implement Common Patterns Using the Oracle Service Cloud (RightNow) Adapter

You can use the Oracle Service Cloud (RightNow) Adapter to implement the following common patterns.

Topics:

> **Note:**
>
> Oracle Integration offers a number of pre-assembled solutions, known as recipes, that provide you with a head start in building your integrations. You can start with a recipe, and then customize it to fit your needs and requirements. Depending upon the solution provided, a variety of adapters are configured in the pre-assembled solutions.
> See the Recipes page on the Oracle Help Center.

Specify QueryCSV Statements When Configuring the Oracle Service Cloud (RightNow) Adapter as an Invoke

You can use the Oracle Service Cloud (RightNow) Adapter to execute tabular QueryCSV statements in Oracle Service Cloud (RightNow). You can use QueryCSV only when configuring the Oracle Service Cloud (RightNow) Adapter as an invoke.

Specifying a QueryCSV Statement

1. Add an Oracle Service Cloud (RightNow) Adapter as an invoke in an integration.

   This starts the Adapter Endpoint Configuration Wizard.
2. On the Basic Info page, specify a name and optional description, then click **Next**.
3. From the **Select an Operation Type** list on the Operations page, select **ROQL**.
4. Select **QueryCSV** from the dropdown list.
5. Specify a query in the editor using the following syntax:

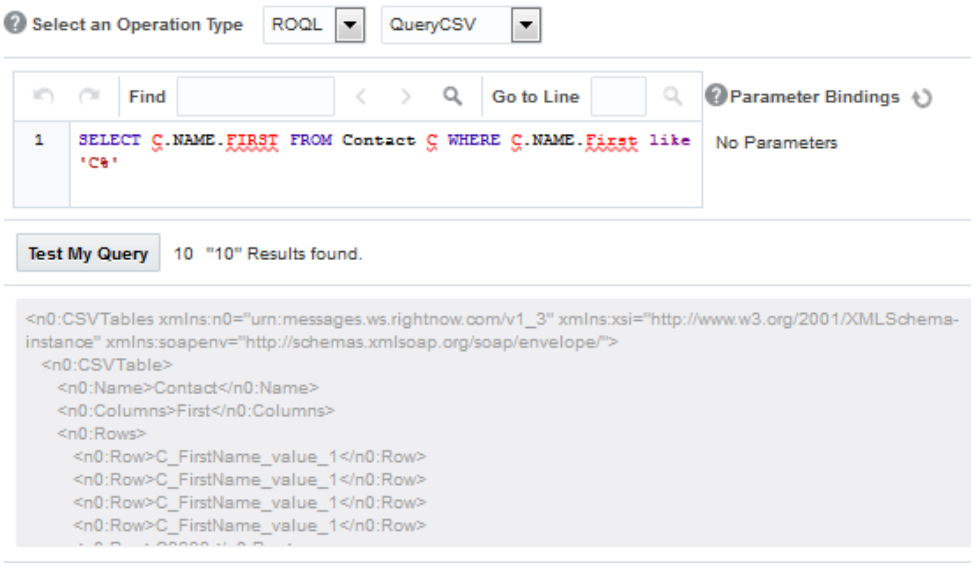
   ```
   SELECT field list from primary object [WHERE condition expression]"
   ```

where:

Syntax	Description
field list	Specifies a list of one or more fields, separated by commas. The field specified must be a simple field (one with a scalar type). If the `SELECT` statement ends at a primary object, subobject, or relationship object, a fault is generated.
primary object	Specifies the type of object you want to query.
condition expression	The `WHERE` clause determines the rows and values against which to filter in the specified `field list`. If unspecified, the query retrieves all the rows in the object.

6. Click **Test My Query**.

   The first ten results of the query are displayed:



   You can also specify query parameters. Query parameters are defined by `&` followed by the variable name. For example:

```
SELECT Status.ID,EndPoint FROM EventSubscription DESC limit 10
offset &offsetData
```

Because of memory limitations in Oracle Integration, only the first 100 rows in the result are returned at runtime. To get the next row, you can use `limit` and `offset` as query parameters to return the next set of results.

- Assume you have the following type of query:

  ```
  SELECT Status.ID,EndPoint FROM EventSubscription DESC limit &limit offset
  &offsetData
  ```

  For the first query, if you set the value of `&offsetData` to `0` and the value of `&limit` to `20`, you get the first `20` rows. For the second query, if you set the value of `&offsetData` to `21` and the value of `&limit` to `10`, you get the next 10 rows, and so on.

  You must send the updated offset value every time for the next query.

- You can use the `Use` keyword in a query. For example, you can define `USE` to query a different database:

  ```
  USE OPERATIONAL; SELECT id, name.first, name.last FROM Contact WHERE ID =3
  ```

- You can use a regular expression in a query. For example:

  ```
  SELECT id FROM CO.MyObject WHERE LookupName REGEXP '^TEST.*$
  ```

- Field expressions and logical operators that are supported in Oracle Service Cloud (RightNow) are also supported in QueryCSV. For example:

  ```
  SELECT ID FROM Contact WHERE Contact.Name.First like 'Chris' AND
  Contact.Address.City='Bozeman'
  ```

- You can use an alias to make the query more readable:

  ```
  SELECT O.Name FROM Organization O
  ```

Unsupported Features

- The `DESCRIBE` query is not supported. For example:

  ```
  DESCRIBE Contact.Emails.EmailList
  ```

- Queries with `*` are not supported. For example:

  ```
  SELECT RoqlInformation.Concurrency.*, RoqlInformation.Maxjoinsize.* FROM
  SystemInformation;
  ```

- Merging of more then one query is not supported. For example:

  ```
  SELECT id, name.first, name.last FROM Contact WHERE ID=3; SELECT id,
  createdTime,updatedTime FROM Incident WHERE ID= 1;
  ```

- Chaining is not supported. For example:

  ```
  SELECT ID as '@MyID' FROM Contact WHERE Organization = @MyOrg LIMIT 1
  ```

- Functions are not supported. For example:

```
select sysdate(), select date_add(date, units, interval, round);
select curAdminUser()
```

Fault Scenarios

Poorly written queries may not execute. When poorly written queries fail to execute, a SOAP fault is returned that contains one of the following messages based on the query supplied:

- `Poor performing query - aborting`
- `Poor performing query - blocked`
- `Poor performing query - too many rows examined`
- `Poor performing query - too much time taken`
- `Current site configuration settings prevent execution of ROQL queries with the REGEXP operator`
- `Too many ROQL queries with the REGEXP operator are running concurrently. Try again later`

See Invoke Operation Page.

Upload File Attachments to Oracle Service Cloud (RightNow)

You can upload file attachments to Oracle Service Cloud (RightNow) with the Oracle Service Cloud (RightNow) Adapter.

This section provides a high-level overview of how to upload a file attachment. Note the following restrictions:

- You cannot send the same file to multiple objects in the same invoke connection. Instead, use multiple invoke connections in the orchestrated integration.
- You cannot send the same file in multiple operations in the same invoke connection. Instead, use multiple invoke connections in the orchestrated integration.
- Oracle Service Cloud (RightNow) has a known issue with uploading file attachments in custom business objects. This issue also impacts the ability of the Oracle Service Cloud (RightNow) Adapter to upload file attachments in a custom object.

1. Create and design an integration.
2. Add an Oracle Service Cloud (RightNow) Adapter as an invoke connection in the integration.

   This invokes the Adapter Endpoint Configuration Wizard.
3. On the Operations page, select the **CRUD** operation type.
4. Select **Create** or **Update**.
5. Select a business object that supports file attachments.

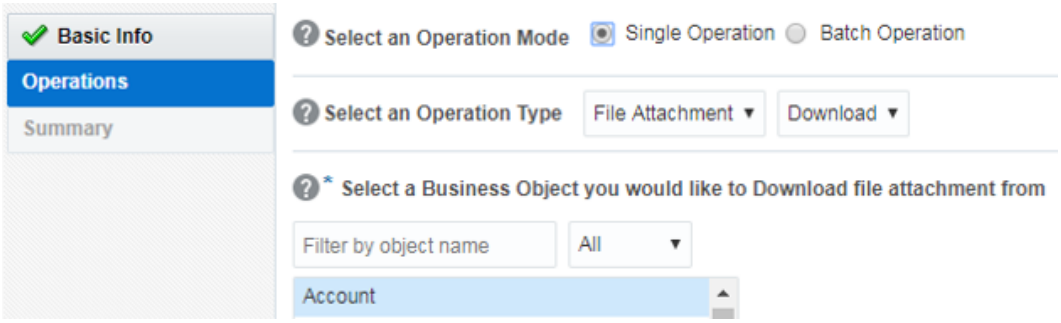
6. Complete the Adapter Endpoint Configuration Wizard.
7. In the mapper, configure source to target element mapping to upload the file to Oracle Service Cloud (RightNow). For this example:
   - The **attachmentReference** source element is mapped to the **FileAttachmentList** > **Data** target element
   - The **attachmentProperties** > **partName** source element is mapped to the **FileAttachmentList** > **FileName** target element.
   - The **attachmentProperties** > **partName** source element is mapped to the **FileAttachmentList** > **FileName** target element.
8. Complete integration design.
9. Activate and invoke the integration. The file attachment is sent to Oracle Service Cloud (RightNow).

Map Downloaded File Attachments

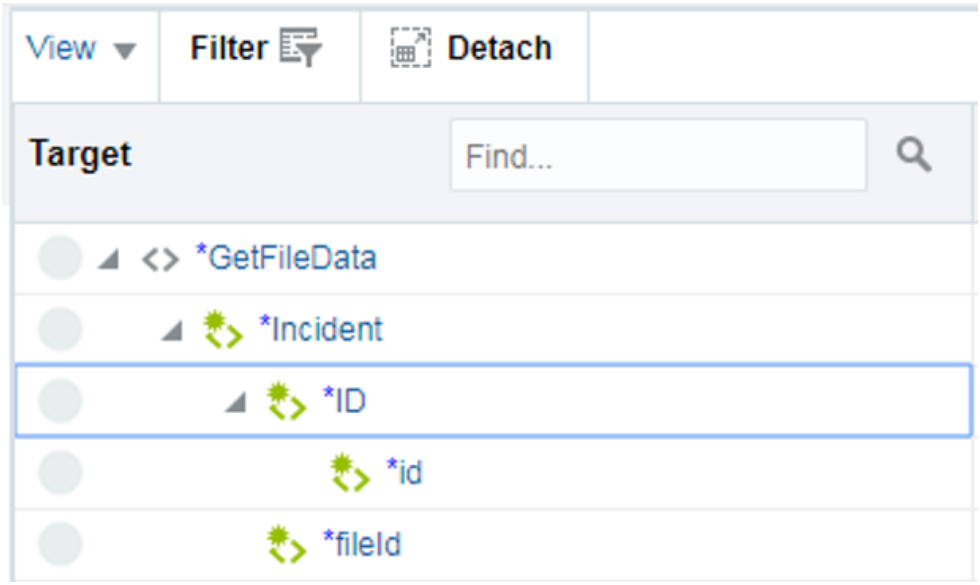
You can download a file as an attachment from Oracle Service Cloud (RightNow) to Oracle Integration. Oracle Service Cloud (RightNow) Adapter exposes the file reference in the mapper for use by other adapters for further processing.

This section provides an overview of the steps to perform in the Adapter Endpoint Configuration Wizard and the mapper.

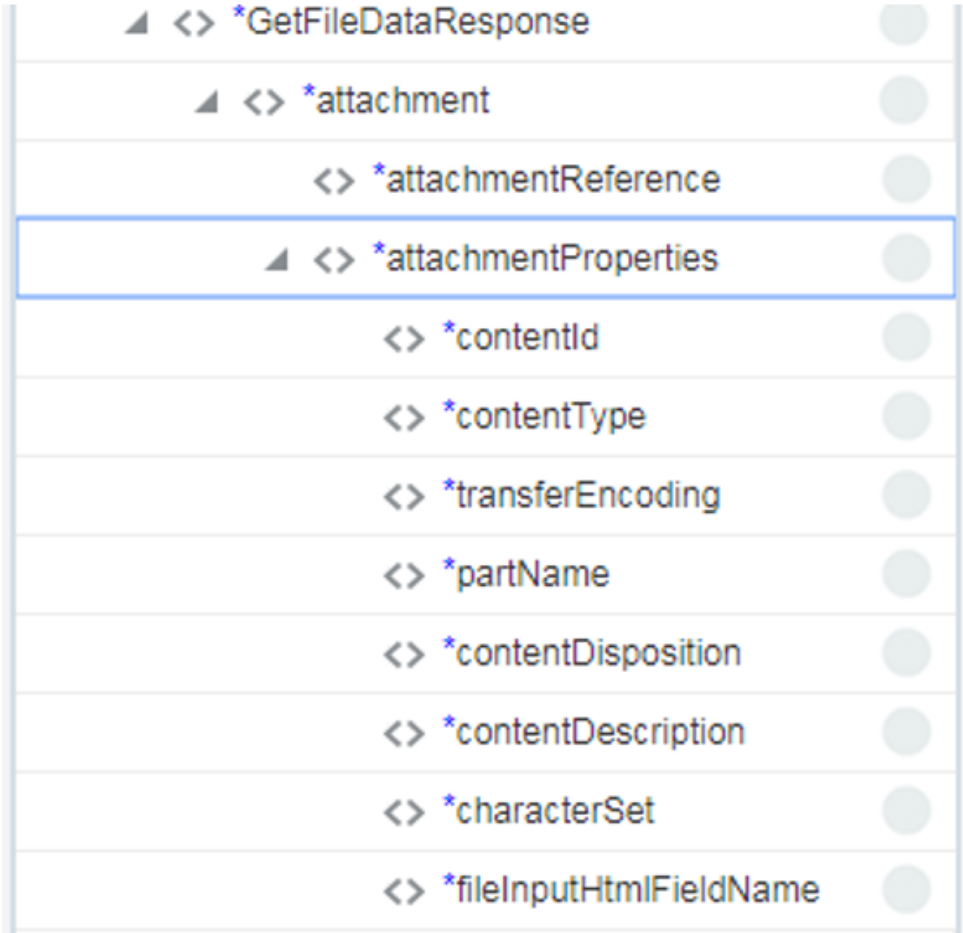
1. Add an Oracle Service Cloud (RightNow) Adapter invoke connection to an integration.
2. On the Operations page of the Adapter Endpoint Configuration Wizard, select **File Attachment** to download a file as an attachment from Oracle Service Cloud (RightNow) to Oracle Integration.
3. Select the business object from which to download the file attachment.



4. Complete the configuration in the Adapter Endpoint Configuration Wizard.
5. In the request mapper, map the object ID from which you want to download the attachment and the file ID of the file.



6. In the response mapper, perform the mapping. The file download looks as follows. The **attachmentReference** in the response contains the VFS file reference of the file downloaded from Oracle Service Cloud (RightNow) to Oracle Integration.



5

Troubleshoot the Oracle Service Cloud (RightNow) Adapter

Review the following topics to learn about troubleshooting issues with the Oracle Service Cloud (RightNow) Adapter.

Topics:

Additional integration troubleshooting information is provided. See Troubleshoot Oracle Integration in *Using Integrations in Oracle Integration Generation 2* and the Oracle Integration Troubleshooting page in the Oracle Help Center.

Regenerate the Updated Artifacts in an Integration

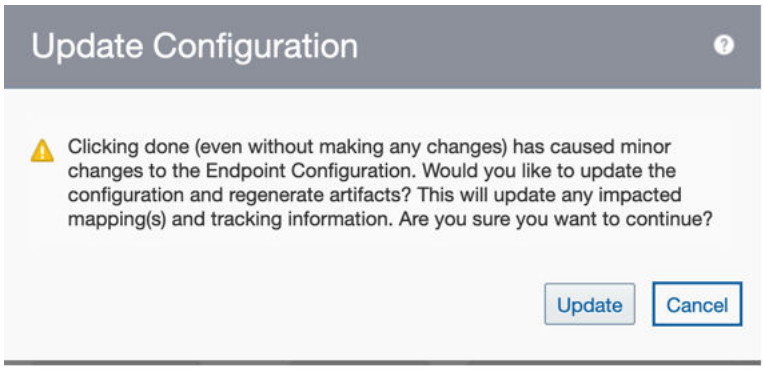
You must regenerate an integration after increasing the number of mappings. For example, assume you create a custom object with a new field in Oracle Service Cloud (RightNow). If you then add the new field in the existing mapper, which tries to update the fields, the following runtime failure occurs.

```
suppDetail " Fault:\n<soap-env:Fault
xmlns:soap-env=\"http://schemas.xmlsoap.org/soap/envelope/"><faultcode
xmlns:soap=\"http://schemas.xmlsoap.org/soap/envelope/">soap:Server</
faultcode><faultstring>
Data element in the Message is
NULL</faultstring><detail><ICSfaultVar>
<fault>RightNowSyncService|urn:wsdl.ws.rightnow.com/v1_4 failed Found
out-of-order or unrecognized node work_document_status|CO while parsing node
of type GenericObject|urn:generic.ws.rightnow.com/v1_4 NULL value is set to
a
non-nillable element RNObjects of object UpdateMsg Failed in setting value
for element RNObjects array position 0 of object UpdateMsg NULL value is set
to a non-nillable element Update of object Update NULL returned from the
Update deserializer due to missing or invalid XML</fault>
</ICSfaultVar><reason>CASDK-0033: Received a SOAP fault while invoking
endpoint target:
https://myinstance--tst1.custhelp.com/services/soap/connect/soap. This
indicates a processing exception on the service endpoint side. Please check
service
```

```
side logs to further diagnose the problem <![CDATA[ Fault Code :
soapenv:Sender Fault String : Data element in the Message is NULL
Fault
Details : <fault>RightNowSyncService|urn:wsdl.ws.rightnow.com/v1_4
failed
Found out-of-order or unrecognized node work_document_status|CO while
parsing
node of type GenericObject|urn:generic.ws.rightnow.com/v1_4 NULL value
is set
to a non-nillable element RNObjects of object UpdateMsg Failed in
setting
value for element RNObjects array position 0 of object UpdateMsg NULL
value
is set to a non-nillable element Update of object Update NULL returned
from
the Update deserializer due to missing or invalid XML</fault> ]]>
:Application
Error</reason><operation>Update</operation><request_payload/></
detail></soap-e
nv:Fault>"
```

Solution 1 (Most Viable) - Regenerate the Integration

1. Open the integration in edit mode.
2. Open the failing Oracle Service Cloud (RightNow) Adapter in edit mode.
3. Click **Next** on each page of the Adapter Endpoint Configuration Wizard without making any changes, then click **Done** on the last page.
   You are prompted to update the configuration and regenerate the artifacts.



4. Click **Update**.
5. Save the integration.
6. Activate and test the integration.

Solution 2 - Create a New Endpoint

Don't do anything with the existing mapping. Instead, create a new endpoint with the update operation and perform the required mapping.

Oracle Service Cloud Adapter Fails to Update an Email

In v1.3 of the Oracle Service Cloud WSDL, the update action on an email address was treated as an upsert operation. In v1.4 of the WSDL, a formal upsert action has been added to replicate this behavior, while the update action only works if the entry exists in the system.

Write Fully-Validated ROQL Query Statements

When you create an ROQL query statement on the Operations page of the Adapter Endpoint Configuration Wizard, you can fully validate your statement by pressing **Test My Query**. There is no limitation on this validation and this ensures that the query works correctly during runtime.

If you do *not* press **Test My Query** and instead click **Next** to go to the Summary page in the wizard, your statement is validated internally and errors are reported that prevent you from proceeding further. However, this internal validation has a limitation in that the query is only validated up to the `WHERE` clause. For example, if you create the following query:

```
SELECT id, contact.name.first FROM contact WHERE id=&val
```

validation is only performed on the portion of the query *before* the `WHERE` clause:

```
SELECT id, contact.name.first FROM contact
```

However, if you arrange the query as follows:

```
SELECT id, contact.name.first FROM contact WHERE id=1
```

the entire query is fully validated.

Events Are Not Exchanged Between Oracle Service Cloud (RightNow) and Oracle Engagement Cloud

If you have configured and activated an integration between Oracle Service Cloud (RightNow) and Oracle Engagement Cloud, but Oracle Service Cloud (RightNow) does not invoke the integration after a record is created, ensure that you set **EVENT_NOTIFICATION_ENABLED** to **YES** in the Oracle Service Cloud (RightNow) application.

For more information, see Enable Event Subscriptions in the Oracle Service Cloud (RightNow) Adapter.

Custom Field Mapping Fails During Runtime in Oracle Service Cloud (RightNow) to Oracle Engagement Cloud Integrations

The Oracle Service Cloud (RightNow) application documentation indicates that given a `Contact`, the `CustomFields` contains a subobject `C_Contacto` that has a `SalesCloudID` field.

To fetch the `SalesCloudID` using a `Query` or `Get` operation, note that the `CustomFields` subobject is listed in the object model as `specify to get`. This means that you must provide a hint to the system that you want that information. Provide the hint by including an empty `CustomFields` subobject in the `Contact` object you passed in as a template. This action informs the server that the object to be returned should also include all the `ContactCustomFields`. You can do this with any subobject that is listed as `specify-to-get`.

In Oracle Integration, the behavior is slightly different. In the `GetContact` request mapper, set a value to `ContactCustomFields.C_Contacto.SalesCloudID` (for example, `SalesCloudID=1`). This step ensures a complete `CustomFields` return as part of the response.

If you follow this step and retry, it works.