Oracle® Cloud
Using the Oracle Engagement Cloud Adapter with Oracle Integration
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Preface

This guide describes how to configure the Oracle Engagement Cloud Adapter as a connection in an integration in Oracle Integration.

Note:
The information in this guide applies to all of your Oracle Integration instances. It doesn’t matter which edition you’re using, what features you have, or who manages your cloud environment. You’ll find what you need here, including notes about any differences between the various flavors of Oracle Integration when necessary.

Topics
• Audience
• Documentation Accessibility
• Related Resources
• Conventions

Audience

This guide is intended for developers who want to use the Oracle Engagement Cloud Adapter in integrations in Oracle Integration.

Documentation Accessibility

For information about Oracle’s commitment to accessibility, visit the Oracle Accessibility Program website at http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc.

Access to Oracle Support

Oracle customers that have purchased support have access to electronic support through My Oracle Support. For information, visit http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info or visit http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs if you are hearing impaired.

Related Resources

See these Oracle resources:
Oracle Cloud
http://cloud.oracle.com

- Using Integrations in Oracle Integration
- Using the Oracle Mapper with Oracle Integration

## Conventions

The following text conventions are used in this document:

<table>
<thead>
<tr>
<th>Convention</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>boldface</strong></td>
<td>Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.</td>
</tr>
<tr>
<td><em>italic</em></td>
<td>Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.</td>
</tr>
<tr>
<td><code>monospace</code></td>
<td>Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.</td>
</tr>
</tbody>
</table>
1

Understand the Oracle Engagement Cloud Adapter

Review the following conceptual topics to learn about the Oracle Engagement Cloud 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:

• Oracle Engagement Cloud Adapter Capabilities
• Oracle Engagement Cloud Adapter Restrictions
• What Application Version Is Supported?
• Workflow to Create and Add an Oracle Engagement Cloud Adapter Connection to an Integration

Oracle Engagement Cloud Adapter Capabilities

Oracle Engagement Cloud Adapter enables modern selling with tools that are easy to deploy and use, completely mobile, packed with powerful analytics, and built for collaborative selling and revenue generation. Oracle Engagement Cloud includes a set of features for creating and tracking sales campaigns, developing leads into business opportunities, and pursuing opportunities to generate revenue. Sales accounts, leads, and opportunities can be automatically assigned to territories and sales teams.

Note:

Ensure that you have reviewed the Oracle HCM Cloud Adapter Capabilities for supported SOAP services in Oracle HCM Cloud.

The Oracle Engagement Cloud Adapter enables you to create an integration with an Oracle Engagement Cloud application.

The Oracle Engagement Cloud Adapter enables customers to easily integrate their on-premises or SaaS applications with Oracle Engagement Cloud without having to know the specific details involved in the integration.

The Oracle Engagement Cloud Adapter provides the following capabilities:

• A WSDL that defines strongly-typed message structures (request and response types) for the selected objects and the name of operations. It provides a simplified user experience for creating data mappings and accessing Oracle Engagement Cloud-related business objects/resources-specific elements through other Oracle Integration activities at design time while constructing integrations with Oracle Fusion Application services.
• Provides declarative support for subscribing to business events raised by various modules in Oracle Engagement Cloud and Oracle Supply Chain Cloud. See Supported Business Events.

• Generates automatic mapping to the exposed business object, event, or Oracle Fusion Applications REST API resource 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: Represents an event document to which you subscribe. The event is raised by the Oracle Engagement Cloud application. See Supported Business Events.
  – Business (REST) API: Represents an Oracle Fusion Applications REST API resource.

You can select parent business resources and their corresponding child business resources. Support is provided in the invoke (outbound) direction.

Note:
The Oracle Engagement Cloud Adapter currently pulls in all resources exposed by the interface catalog and displays them for selection. See the Resource Types section of REST API for Oracle Engagement R13.

• Enables you to view annotations on Oracle Engagement Cloud Adapter elements in the mapper. See About Mappings in Using the Oracle Mapper with Oracle Integration.

• Dynamically invokes a REST endpoint/URL at runtime without requiring you to configure any extra invoke connection or REST outbound details. See Invoke an Endpoint Dynamically.

• Automatically handles security policy details required to connect to the Oracle Engagement Cloud application.

• Provides standard error handling capabilities.

• Enables you to map business objects that have polymorphic data structures.

Support for Calling Integrations with Concrete Values of Custom Objects from the Groovy Script Editor

The Oracle Engagement Cloud Adapter inbound endpoint WSDL interface supports the use of concrete values for custom business objects in the WSDL in place of xsd:anyType parameters. This feature enables you to use the groovy script editor to create scripts to invoke integrations. The groovy script editor is unable to recognize xsd:anyType parameters.

See Integrate Groovy Scripts.
Supported Business Events

You can subscribe to the following business events when configuring the Oracle Engagement Cloud Adapter as a trigger (inbound) connection in the Adapter Endpoint Configuration Wizard.

The business events in Oracle Engagement Cloud also handle all child events. For example, if an Opportunity is created first, it raises an Opportunity Created event and next a revenue line item is added to that Opportunity the next day. The event is then an Opportunity Updated event, but the final payload includes the revenue line item. That is, specific child events are not created for the child objects that have a relationship to the parent object.

<table>
<thead>
<tr>
<th>Business Event</th>
<th>Available with Release</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity Created Event</td>
<td>13</td>
</tr>
<tr>
<td>Activity Updated Event</td>
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</tr>
<tr>
<td>Activity Deleted Event</td>
<td>13</td>
</tr>
<tr>
<td>Recurrence Activity Created Event</td>
<td>13</td>
</tr>
<tr>
<td>Recurrence Activity Updated Event</td>
<td>13</td>
</tr>
<tr>
<td>Recurrence Activity Deleted Event</td>
<td>13</td>
</tr>
<tr>
<td>Activity Note Created Event</td>
<td>13</td>
</tr>
<tr>
<td>Activity Note Updated Event</td>
<td>13</td>
</tr>
<tr>
<td>Activity Note Deleted Event</td>
<td>13</td>
</tr>
<tr>
<td>Account Created Event</td>
<td>10 and later</td>
</tr>
<tr>
<td>Account Updated Event</td>
<td>10 and later</td>
</tr>
<tr>
<td>Account Deleted Event</td>
<td>10 and later</td>
</tr>
<tr>
<td>Contact Created Event</td>
<td>10 and later</td>
</tr>
<tr>
<td>Contact Updated Event</td>
<td>10 and later</td>
</tr>
<tr>
<td>Contact Deleted Event</td>
<td>10 and later</td>
</tr>
<tr>
<td>BusinessPlan Created Event</td>
<td>13</td>
</tr>
<tr>
<td>BusinessPlan Updated Event</td>
<td>13</td>
</tr>
<tr>
<td>BusinessPlan Deleted Event</td>
<td>13</td>
</tr>
<tr>
<td>Business Plan Note Created Event</td>
<td>13</td>
</tr>
<tr>
<td>Business Plan Note Updated Event</td>
<td>13</td>
</tr>
<tr>
<td>Business Plan Note Deleted Event</td>
<td>13</td>
</tr>
<tr>
<td>Opportunity Created Event</td>
<td>11 and later</td>
</tr>
<tr>
<td>Opportunity Updated Event</td>
<td>11 and later</td>
</tr>
<tr>
<td>Opportunity Deleted Event</td>
<td>11 and later</td>
</tr>
<tr>
<td>Deal Created Event</td>
<td>11 and later</td>
</tr>
<tr>
<td>Deal Updated Event</td>
<td>11 and later</td>
</tr>
<tr>
<td>Deal Note Created Event</td>
<td>13</td>
</tr>
<tr>
<td>Deal Note Updated Event</td>
<td>13</td>
</tr>
<tr>
<td>Deal Note Deleted Event</td>
<td>13</td>
</tr>
<tr>
<td>Service Request Created Event</td>
<td>13</td>
</tr>
<tr>
<td>Business Event</td>
<td>Available with Release</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>Service Request Updated Event</td>
<td>13</td>
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<tr>
<td>Service Request Selected Attribute value</td>
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<tr>
<td>Changed Event</td>
<td></td>
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<tr>
<td>Service Request Deleted Event</td>
<td>13</td>
</tr>
<tr>
<td>Service Request Message Created Event</td>
<td>13</td>
</tr>
<tr>
<td>Partner Created Event</td>
<td>11 and later</td>
</tr>
<tr>
<td>Partner Updated Event</td>
<td>11 and later</td>
</tr>
<tr>
<td>Partner Note Created Event</td>
<td>13</td>
</tr>
<tr>
<td>Partner Note Updated Event</td>
<td>13</td>
</tr>
<tr>
<td>Partner Note Deleted Event</td>
<td>13</td>
</tr>
<tr>
<td>Work Order Created Event</td>
<td>13</td>
</tr>
<tr>
<td>Partner Contact Created Event</td>
<td>11 and later</td>
</tr>
<tr>
<td>Partner Contact Updated Event</td>
<td>11 and later</td>
</tr>
<tr>
<td>Work Order Updated Event</td>
<td>13</td>
</tr>
<tr>
<td>Asset Created Event</td>
<td>13</td>
</tr>
<tr>
<td>Asset Updated Event</td>
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</tr>
<tr>
<td>Asset Deleted Event</td>
<td>13</td>
</tr>
<tr>
<td>Resolution Request Updated</td>
<td>13</td>
</tr>
<tr>
<td>Loyalty Member Created Event</td>
<td>13</td>
</tr>
<tr>
<td>Loyalty Member Updated Event</td>
<td>13</td>
</tr>
<tr>
<td>Loyalty Member Voucher Created Event</td>
<td>13</td>
</tr>
<tr>
<td>Loyalty Member Voucher Updated Event</td>
<td>13</td>
</tr>
<tr>
<td>Contract Created Event</td>
<td>13</td>
</tr>
<tr>
<td>Contract Updated Event</td>
<td>13</td>
</tr>
<tr>
<td>Contract Deleted Event</td>
<td>13</td>
</tr>
<tr>
<td>Contract Status Changed Event</td>
<td>13</td>
</tr>
<tr>
<td>Loyalty Member Referral Event</td>
<td>13</td>
</tr>
<tr>
<td>Lead Created Event</td>
<td>11 and later</td>
</tr>
<tr>
<td>Lead Updated Event</td>
<td>11 and later</td>
</tr>
<tr>
<td>Lead Deleted Event</td>
<td>11 and later</td>
</tr>
<tr>
<td>Lead Note Created Event</td>
<td>13</td>
</tr>
<tr>
<td>Lead Note Updated Event</td>
<td>13</td>
</tr>
<tr>
<td>Lead Note Deleted Event</td>
<td>13</td>
</tr>
<tr>
<td>Opportunity Note Created Event</td>
<td>13</td>
</tr>
<tr>
<td>Opportunity Note Updated Event</td>
<td>13</td>
</tr>
<tr>
<td>Opportunity Note Deleted Event</td>
<td>13</td>
</tr>
<tr>
<td>Loyalty Member Referral Event</td>
<td>13</td>
</tr>
</tbody>
</table>
Oracle Engagement Cloud Adapter Restrictions

Note the following Oracle Engagement Cloud Adapter restrictions.

- Oracle Fusion Applications allows clients to access the public event catalog using the HTTP basic authentication scheme. When the client is not allowed to communicate with the catalog using this scheme, they receive the following error: Server redirected too many times (20). This occurs while testing the Oracle Cloud connection. You must file a service request with Oracle Fusion Applications to resolve this issue.

What Application Version Is Supported?

For information about which application version is supported by this adapter, see the Oracle Integration Adapters Certification Matrix under section Oracle Integration Adapters Certification at the top of the page:

Oracle Integration Adapters Certification Matrix

Workflow to Create and Add an Oracle Engagement Cloud 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.

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
<th>More Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>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.</td>
<td>Create an Oracle Engagement Cloud Adapter Connection</td>
</tr>
<tr>
<td>2</td>
<td>Create the integration. When you do this, you add trigger (source) and invoke (target) connections to the integration.</td>
<td>Create Integrations and Add the Oracle Engagement Cloud Adapter to an Integration</td>
</tr>
<tr>
<td>3</td>
<td>Map data between the trigger connection data structure and the invoke connection data structure.</td>
<td>Map Data of Using Integrations in Oracle Integration</td>
</tr>
<tr>
<td>4</td>
<td>(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).</td>
<td>Manage Lookups of Using Integrations in Oracle Integration</td>
</tr>
<tr>
<td>5</td>
<td>Activate the integration.</td>
<td>Manage Integrations of Using Integrations in Oracle Integration</td>
</tr>
<tr>
<td>Step</td>
<td>Description</td>
<td>More Information</td>
</tr>
<tr>
<td>------</td>
<td>-----------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>6</td>
<td>Monitor the integration on the dashboard.</td>
<td>Monitor Integrations of <em>Using Integrations in Oracle Integration</em></td>
</tr>
<tr>
<td>7</td>
<td>Track payload fields in messages during runtime.</td>
<td>Assign Business Identifiers for Tracking Fields in Messages and Manage Business Identifiers for Tracking Fields in Messages of <em>Using Integrations in Oracle Integration</em></td>
</tr>
<tr>
<td>8</td>
<td>Manage errors at the integration level, connection level, or specific integration instance level.</td>
<td>Manage Errors of <em>Using Integrations in Oracle Integration</em></td>
</tr>
</tbody>
</table>
Create an Oracle Engagement Cloud 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
- Create a Connection
- Upload an SSL Certificate

Prerequisites for Creating a Connection

You must satisfy the following prerequisites to create a connection with the Oracle Engagement Cloud Adapter.

<table>
<thead>
<tr>
<th>Prerequisite</th>
<th>Description</th>
<th>For More Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subscribe to Oracle Engagement Cloud.</td>
<td>This action enables you to create an Oracle Engagement Cloud user account with the correct privileges. You specify this user account when creating an Oracle Engagement Cloud Adapter connection on the Connections page.</td>
<td>See Oracle Engagement Cloud.</td>
</tr>
<tr>
<td>Upload a security certificate.</td>
<td>Certificates 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.</td>
<td>See Upload an SSL Certificate.</td>
</tr>
<tr>
<td>Obtain the necessary Oracle Engagement Cloud service catalog service WSDL URL, event catalog URL, or interface catalog URL.</td>
<td>You must specify a mandatory Oracle Engagement Cloud Adapter service catalog service WSDL (for accessing business objects) and optionally an event catalog URL (for accessing event subscriptions) or interface catalog URL (for accessing Oracle Fusion Applications REST API resources) on the Connections page.</td>
<td>See Obtain the Oracle Engagement Cloud Adapter Service Catalog Service WSDL, Event Catalog URL, or Interface Catalog URL.</td>
</tr>
</tbody>
</table>
Subscribe to events in Oracle Engagement Cloud.

For More Information

Use groovy scripts in integrations.

See Integrate Groovy Scripts.

Obtain the Oracle Engagement Cloud Adapter Service Catalog Service WSDL, Event Catalog URL, or Interface Catalog URL

You must obtain a required service catalog service WSDL (for accessing and configuring the inbound and outbound adapter to use either business objects or business services) and optionally an event catalog URL (for accessing and configuring the inbound adapter to use event subscriptions) or interface catalog URL (for accessing and configuring the outbound adapter to use Oracle Fusion Applications REST API resources). You specify the necessary WSDL and URLs in the Connection Properties dialog.

You specify the appropriate property values in the Oracle Engagement Cloud Adapter Connection Properties dialog on the Connections page.

The following sections describe how to obtain the service catalog service WSDL, event catalog URL, and interface catalog URL:

- **For Fusion Applications Releases 10 Through 12**
- **For Fusion Applications Releases 13 and Later**

For Fusion Applications Releases 10 Through 12

Obtain the Oracle Fusion Applications Releases 10 through 12 service catalog service WSDLs, event catalog URLs, and interface catalog URLs through the following methods.

- **Obtain the Service Catalog Service WSDL for Releases 10 Through 11**
• Obtain the Service Catalog Service WSDL for Release 12
• Obtain the Event Catalog URL
• Obtain the Interface Catalog URL

Obtain the Service Catalog Service WSDL For Releases 10 Through 11

<table>
<thead>
<tr>
<th>WSDL Requirements</th>
<th>Where Do You Get the WSDL?</th>
</tr>
</thead>
<tbody>
<tr>
<td>The URL must be that of a service catalog service WSDL. The service catalog service is a Fusion Application service that returns a list of external services available for integration. It allows clients to retrieve information about all public Fusion Application service endpoints available for that instance. The service catalog service enables clients to retrieve information about all public Oracle Fusion Application service endpoints available for that instance. The information it returns is specific to the particular cloud instance and also reflects the new services that may have been introduced in patches applied to the instance. This service is used to programmatically discover the SOAP services available on the cloud instance and retrieve the necessary metadata to invoke the SOAP services to manage business objects.</td>
<td>The developer creating an Oracle Engagement Cloud connection must work with the Oracle Engagement Cloud service administrator to get the concrete WSDL URL for the service catalog service provisioned for the specific SaaS application.</td>
</tr>
</tbody>
</table>

This section describes how to derive the external virtual host and port for a tokenized service catalog service WSDL. The topology information in the Topology Registration setup task contains the external virtual host and port for the domains and applications. The following instructions describe the steps for deriving the values using the service catalog service WSDL URL as an example: https://atf_server:port/fndAppCore-Services/ServiceCatalogService.

To access the Review Topology page, the ASM_REVIEW_TOPOLOGY_HIERARCHY_PRIV entitlement must be granted to the user's job role. The entitlement is granted to the ASM_APPLICATION_DEPLOYER_DUTY duty role, which is inherited by the duty roles ASM_APPLICATION_DEVELOPER_DUTY and ASM_APPLICATION_ADMIN_DUTY.

If the menu items and tasks described in the following procedure are not available in your cloud instance, your user account is missing the required role. Contact your cloud instance security administrator for assistance.

1. Log in to the cloud instance.
2. Click the Navigator icon in the global area in the top part of the window, then chose Setup and Maintenance under the Tools heading.
3. Select Review Topology under the Topology Registration section in the Tasks regional area on the left side of the window.
4. Click the Detailed tab in the middle of the window.

The tab shows the list of domains configured in the cloud instance.
5. Map the token name for the service path value to the domain name in the Topology Manager:

<table>
<thead>
<tr>
<th>Token Name in Service Path</th>
<th>Domain Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>atf_server</td>
<td>CommonDomain</td>
</tr>
<tr>
<td>crm_server</td>
<td>CRMDomain</td>
</tr>
<tr>
<td>fin_server</td>
<td>FinancialDomain</td>
</tr>
<tr>
<td>hcm_server</td>
<td>HCMDomain</td>
</tr>
<tr>
<td>ic_server</td>
<td>ICDomain</td>
</tr>
<tr>
<td>prc_server</td>
<td>ProcurementDomain</td>
</tr>
<tr>
<td>pj_server</td>
<td>ProjectsDomain</td>
</tr>
<tr>
<td>scm_server</td>
<td>SCMDomain</td>
</tr>
</tbody>
</table>

6. Expand the domain name and select any external virtual host and port for the J2EE applications that are deployed on the domain. In the sample window, the values for this particular instance are `fs-your-cloud-hostname` and `443`, respectively.
7. Replace the *domainName_server:PortNumber* with the external virtual host and port identified in the previous step. For example:

https://fs-your-cloud-hostname:port/fndAppCoreServices/ServiceCatalog-Service?wsdl

Obtain the Service Catalog Service WSDL For Release 12

To obtain the physical endpoint of your instance, perform the following steps:

1. Log in to the Fusion Applications home page. For example:

https://acme.fs.us2.oraclecloud.com/homePage/faces/FuseWelcome

   Where *acme* is the system name and *fs* is a Fusion Applications domain.

2. Copy https://acme.fs.us2.oraclecloud.com/ and append fndAppCoreServices/ServiceCatalogService?WSDL. For example:

https://acme.fs.us2.oraclecloud.com/fndAppCoreServices/ServiceCatalog-Service?WSDL

Obtain the Event Catalog URL

You must know the customer relationship management (CRM) URL format to access the CRM application user interface. Follow the URL format to determine the event catalog URL. For example, if the CRM URL format is:

https://fusxxxxx-crm-ext.us.oracle.com/customer/faces/CrmFusionHome
Then the event catalog URL is:

https://fusxxxx-crm-ext.us.oracle.com/soa-infra

The event catalog URL https://host:port/soa-infra is a partial URL and must only be provided on the Connections page. Do not open this URL with a browser. If you do, you receive a Page not found error. The adapter does not access this URL directly. Instead, it automatically appends the required resource path to make the URL fully valid (when it needs to access the event catalog).

To check the public events defined in the catalog, enter the following complete URL in a browser:

https://host:port/soa-infra/PublicEvent/catalog

Obtain the Interface Catalog URL

The interface catalog URL is formatted as follows. Obtain the host name in the same way as you obtained the host for the service catalog service WSDL.

https://host:port_for_the_common_domain/helpPortalApi/otherResources/latest/interfaceCatalogs

For Fusion Applications Releases 13 and Later

Obtain the Oracle Fusion Applications Release 13 service catalog service WSDL, event catalog URL, or interface catalog URL through the following methods.

- Obtain the Service Catalog Service WSDL
- Obtain the Event Catalog URL
- Obtain the Interface Catalog URL

Obtain the Service Catalog Service WSDL

To obtain the physical endpoint of your instance, perform the following steps:

1. Log in to the Fusion Applications home page. For example:

   https://acme.fa.us6.oraclecloud.com/fscmUI/faces/FuseWelcome

   Where acme is the system name and us6 is the data center.

2. Copy https://acme.fa.us6.oraclecloud.com/ and append it with fscmService/ServiceCatalogService?WSDL. For example:


   WSDL
Obtain the Event Catalog URL

Starting in Release 13, you access all Fusion Applications URLs using a consolidated endpoint. You must switch to the new consolidated endpoint that conforms to the following naming pattern:

https://systemName.fa.dcsn.oraclecloud.com/...

You must switch to the consolidated endpoint immediately after upgrading to Release 13. Newly provisioned instances using Release 13 only have the consolidated endpoint available. In Release 13, multiple domains are consolidated. You must specify the domain in the URL. For example, if specifying the fa domain, the URL looks as follows:

1. Copy the following URL:

   https://acme.fa.us6.oraclecloud.com/

2. Append soa-infra to the end of the URL:

   https://acme.fa.us6.oraclecloud.com/soa-infra

Obtain the Interface Catalog URL

The interface catalog URL is formatted as follows. Obtain the host name in the same way as you obtained the host for the service catalog service WSDL.

https://host:port_for_the_common_domain/root_context/otherResources/latest/interfaceCatalogs

Where root_context is one of the following root context values:

- ERP/SCM pillar:
  - fscmRestApi: for ERP/SCM REST services (includes PPM/Procurement).
  - fscmService: for ERP/SCM non-REST services, such as SOAP services.
- HCM pillar:
  - hcmRestApi: for HCM REST services.
  - hcmService: for HCM non-REST services, such as SOAP services.
- CRM pillar:
  - crmRestApi: for CRM REST services.
  - crmServices: for CRM non-REST services, such as SOAP services.

Configure Oracle Engagement Cloud for Event Subscriptions

You must create a CSF key to subscribe to both standard and custom events in Oracle Engagement Cloud. This key is required by the event handler framework when it in-
vokes the integration. The credentials of the integration are managed by the CSF key. Create the CSF key in Oracle SOA Composer.

**Note:**

- There is only one SOA instance in Release 13.
- The Oracle Integration password may expire periodically. Your application administrator must contact the Oracle Integration administrator to get the refreshed user credentials. The application administrator must update the CSF key when this password is refreshed.

Ensure that you specify the following information correctly when creating the CSF key:

- Create the CSF key with a name that is a combination of the Oracle Identity Cloud Service service ID and the name of the integration instance.

  1. In the upper right corner of Oracle Integration, click ![Avatar](avatar.png), then select About.
  2. Copy the Identity Domain value (for example, `idcs-638a2ce020e60c2881`) and the Service Instance value (for example, `oic1575`).
  3. Assemble the CSF key value with the identity domain first and the service instance second (no space in between): `idcs-638a2ce020e60c2881oic1575`.
- Create the CSF key with the Oracle Integration user account with which you log in to Oracle Integration and not the user name created when you subscribed to Oracle Engagement Cloud.
- Ensure that the CSF key password has not expired.

  1. Log in to Oracle SOA Composer with a user that has the SOA administrator role. Obtain the hostname and port from your administrator.

    For example, in Release 12:

    ```
    http://Sales_domain_URL:port/soa/composer
    ```

    For example, in Release 13:

    ```
    https://acme.fa.us6.oraclecloud.com/soa/composer
    ```

  2. Click Manage Security.
  3. Add the CSF key name. The name must be a combination of the Oracle Identity Cloud Service service ID and the name of the integration instance.
  4. Provide the username and password that you enter to log in to Oracle Integration. Do not enter the username and password created when you subscribed to Oracle Engagement Cloud.

    The Oracle Integration user must exist in Oracle Integration and have been assigned the ServiceUser role.

    The CSF key entry in the Oracle Engagement Cloud infrastructure stores the Oracle Integration credentials used by Oracle Engagement Cloud. When Oracle Fu-
sion Applications send outbound requests to Oracle Integration (at runtime), it sends the credentials (username and password) of this account for authentication.

5. Click Register.

Enable Event Subscriptions in Oracle Engagement Cloud

Before you can subscribe to events with the Oracle Engagement Cloud Adapter, you must perform a series of configuration tasks. For this example, Oracle Service Cloud (RightNow) Adapter is the other connection with Oracle Engagement Cloud in this integration.

- Verify the Source System Record in Oracle Engagement Cloud
- Create the Source System Record in Oracle Engagement Cloud
- Verify Source System Entities
- Enable the Trading Community Events Profile Option

Verify the Source System Record in Oracle Engagement Cloud

The integration is designed to work with Oracle Engagement Cloud Release 10.

To verify the source system record in Oracle Engagement Cloud:

1. Log in to an Oracle Engagement Cloud instance with a user with system administrator privileges.
2. Navigate to the Setup and Maintenance page.
3. Select the All Tasks tab.
4. Enter Manage Trading community Source System in the Name field, and click Search.
5. In the Search Results section, click the icon under Go to Task.

The Manage Trading Community Source Systems page is displayed.

6. Select Starts with from the Code drop-down menu.
7. To the right of Starts with, enter a value in the field, then click Search. For this example, RNOW is entered.
8. In the Search Results section, verify the value you entered (for this example, RNOW) is displayed in the Code column and ensure the Enable for Trading Community Members checkbox is selected. If the Enable for Trading Community Members check box is not selected, then perform the following steps:
   a. Select the RNOW row.
   b. Click the Edit icon.
   c. Select the Enable for Trading Community Members checkbox.

Create the Source System Record in Oracle Engagement Cloud

To create the Source System Record in Oracle Engagement Cloud:

If the Source System definition RNOW record is not found in the Oracle Engagement Cloud instance, then follow the steps below to create one:
1. Log in to the Oracle Engagement Cloud instance with a user with system administrator privileges.

2. Navigate to the Setup and Maintenance page.

3. Select the **All Tasks** tab.

4. Enter **Manage Trading community Source System** in the **Name** field, and click **Search**.

5. In the **Search Results** section, click the icon under **Go to Task**.

6. Select **Starts with** from the **Code** drop-down menu.

7. Enter **RNOW** in the field, then click **Search**. For this example, Oracle Service Cloud (RightNow) Adapter is the other connection with which Oracle Engagement Cloud is communicating.

8. Under **Search Results**, click the **New** icon.

9. On the Create Source System page, fill in the values as follows. For this example, Oracle Service Cloud (RightNow) Adapter is the other connection with which Oracle Engagement Cloud is communicating.

   - **Code** field: Enter **RNOW**.
   - **Name** field: Enter **Service Cloud**.
   - **Description** field: Enter a description. For example:
     
     Maintains cross references between the Oracle Fusion Applications database and records imported using comma-separated files.

10. Click **Save**, then click **Close**.

   **Verify Source System Entities**

To verify source system entities:

1. Navigate to the Setup and Maintenance page.

2. Select the **All Tasks** tab.

3. Enter **Manage Source System Entities** in the **Name** field, and click **Search**.

4. In the **Search Results** section, click the icon under **Go to Task**.

   The Manage Source System Entities page is displayed.

5. From the **Source Systems for Trading Community Members** list, select **Service Cloud (RightNow)**. For this example, Oracle Service Cloud (RightNow) Adapter is the other connection with which Oracle Engagement Cloud is communicating.

6. In the **Service Cloud (RightNow): Entities** section, ensure that the **Address**, **Contact Points**, and **Parties** checkboxes are selected.

**Enable the Trading Community Events Profile Option**

This profile option only applicable to Trading Community Architecture (TCA) objects such as Accounts and Contacts. If the profile option is set to **No** out of the box, the
events for the Accounts and Contacts objects are disabled. The rest of the objects do not require any profile option and are enabled to raise business events out of the box.

To enable the trading community events profile option:

1. Navigate to the Setup and Maintenance page.
2. Select the *All Tasks* tab.
3. Enter Manage Trading Community Common Profile Options in the *Name* field, and click *Search*.
4. In the *Search Results* section, click the icon under *Go to Task*. The Manage Trading Community Common Profile Options page is displayed.
5. Select *HZ_ENABLE_EVENT_TRACKING*. The Manage Trading Community Common Profile Options page for the HZ_ENABLE_EVENT_TRACKING page is displayed.
6. In the *HZ_ENABLE_EVENT_TRACKING: Profile Values* section, set the *Site level Profile Value* to *Yes*.
7. Click *Save*, then click *Close*.
8. On the Manage Trading Community Common Profile Options page, select *HZ_INVOKE_OBJ_WF_ON_TRACKING*. The Manage Trading Community Common Profile Options page for the HZ_INVOKE_OBJ_WF_ON_TRACKING page is displayed.
9. In the *HZ_INVOKE_OBJ_WF_ON_TRACKING: Profile Values* section, set the *Site level Profile Value* to *Yes*.
10. Click *Save*, then click *Close*.

Create an Integration User Account

To invoke an Oracle Engagement Cloud service catalog or event catalog web service from Oracle Integration, you create a separate user.

To create the integration user account:

1. Log in to Oracle Engagement Cloud with a user with system administrator privileges.
2. Navigate to *Navigator > My Team > Manage Users*. The Manage Users page is displayed.
3. Click *Manage Users*.
4. Click the *Create New User* icon beside *Show Photo*.
5. Enter the following information, and click *Save*.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Last Name</td>
<td>Enter CUSTOMER_OIC_INTEG_USER</td>
</tr>
<tr>
<td>Email</td>
<td>Enter a valid email address.</td>
</tr>
<tr>
<td>Hire Date</td>
<td>Enter the date.</td>
</tr>
<tr>
<td>User Name</td>
<td>Enter CUSTOMER_OIC_INTEG_USER.</td>
</tr>
</tbody>
</table>
Assign Integration Roles

You associate a user with roles and privileges in Oracle Authorization Policy Manager on the Oracle Entitlements Server for Releases 10 and 11. If using Releases 12 and later, you use the Security Console to manage users and roles.

You can configure an Oracle Integration instance to use the Username Password Token security policy to access the resources in an Oracle Engagement Cloud Adapter instance.

An Oracle Engagement Cloud Adapter instance exposes service catalogs and event catalogs to Oracle Integration. These resources are secured in the Oracle Engagement Cloud Adapter. You need to assign the required roles and privileges to a user.

**Note:**

For prebuilt integrations, you must use the name `CUSTOMER_OIC_INTEG_USER`. In prebuilt integrations, connections and filter expressions for echo suppression refer to `CUSTOMER_OIC_INTEG_USER` as the user name. For new integrations, the user name can be anything.

<table>
<thead>
<tr>
<th>Role</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALL_INTEGRATION_POINTS_ALL_DATA</td>
<td>Starting with release 12, this role is no longer supported. When existing customers upgrade to release 12, users with this role continue using it, although it is hidden from the Security Console. If you create a new integration user in release 12 or later, you cannot assign this role.</td>
</tr>
<tr>
<td>Customer Relationship Management Application Administrator</td>
<td>This role is supported in releases 12 and later.</td>
</tr>
<tr>
<td>Role</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>SOAOperator</td>
<td>The SOA Operator role.</td>
</tr>
<tr>
<td>FND_MANAGE_CATALOG_SERVICE_PRIV</td>
<td>Role for managing the web services catalog.</td>
</tr>
</tbody>
</table>

Additional roles may be required per each interface requirement.

**Note:**

You must have administrator privileges in Oracle Authorization Policy Manager to perform the following steps.

### Assigning Integration Roles in Releases 12 and Later

Use the Security Console to manage application security such as roles, users, certificates, and administration tasks. Access to the Security Console is provided by the predefined **Security Manager** role. Access the Security Console in the following ways:

- Use the Manage Job Roles or Manage Duties tasks in the Setup and Maintenance work area.
- Select **Navigator > Tools > Security Console**.

For example, the Roles page for the **Integration Specialist** user looks as follows:
Assigning Integration Roles in Releases 10 and 11

1. Log in to Oracle Authorization Policy Manager.
2. Under Search, select Users from the For dropdown list.
3. Enter CUSTOMER_OIC_INTEG_USER (for prebuilt integrations) or any name (for new integrations) in the Search field, then click the Search icon.
4. Select that name in the search results, then click the View icon.
5. On the username tab (CUSTOMER_OIC_INTEG_USER or whatever name you created), click the Application Role Assignments subtab.
6. Click Map.
7. In the Map Application Roles to User dialog:
   a. Select crm from the Application Name dropdown list.
   b. Select Contains from the Role Name dropdown list, enter ALL_INTEGRATION_POINTS_ALL_DATA (for releases 11 and earlier) or Customer Relationship Management Application Administrator (for releases 12 and later) in the Role Name field, and then click Search.
   c. Select ALL_INTEGRATION_POINTS_ALL_DATA (for releases 11 and earlier) or Customer Relationship Management Application Administrator (for releases 12 and later) in the search results, then click Map Roles.

   The role is mapped for the user under crm.
8. Click Map.
9. Perform the following steps in the Map Application Roles to User dialog.
   a. Select hcm from the Application Name dropdown list, and repeat steps 7.b, and 7.c.
   b. The role is mapped for the user under hcm.
10. Click Map.
11. Perform the following steps in the Map Application Roles to User dialog.
a. Select **fscm** from the Application Name dropdown list, and repeat steps 7.b, 7.c. The role is mapped for the user under **fscm**.

12. Click Map.

13. Perform the following steps in the Map Application Roles to User dialog.

   a. Select **soa-infra** from the Application Name dropdown list.
   b. Select Contains from the dropdown menu next to Display Name.
   c. Enter SOA Operator in the Display Name field, and then click Search.
   d. Select the SOA Operator role in the search results, then click Map Roles.

   The role is mapped to the user under **soa-infra**.

14. On the *username* tab (CUSTOMER_OIC_INTEG_USER or whatever name you created), click Find Policies at the top-right corner of the page.

15. In the Choose an Application dialog, select **fscm** and click OK. The Search Authorization Policies tab is displayed.


17. On the Untitled tab, enter Policy for manage services catalog in the Name field.

18. Ensure your username (CUSTOMER_OIC_INTEG_USER or whatever name you created) is listed under Principals. If the use is not listed under Principals, then click + next to Principals.

19. Perform the following steps in the Search Principal dialog.

   a. Select the Users tab.
   b. Select Starts With from the User Name dropdown list, enter the user name (CUSTOMER_OIC_INTEG_USER or whatever name you created) in the User Name field, and then click Search.
   c. Select the user name in the search results, then click Add Selected.
   d. Click Add Principals.

20. Select All next to Match under Principals.

21. Click + next to Targets.

22. In the Search Target dialog, click the Entitlements tab, then select Starts With from the Name dropdown list.

23. Enter FND_MANAGE_CATALOG_SERVICE_PRIV, then click Search.

24. Select Manage Webservices catalog in the search results, then click Add Selected.

25. Ensure Manage Webservices catalog is added onto Selected Targets.

26. Click Add Targets.

   A new Policy for manage services catalog is added to the user.

27. Click Save on the Untitled tab.

Enable Echo Suppression Filters

During bidirectional object synchronization, echoes are generated. For example, an event triggered in Oracle Engagement Cloud is synchronized through Oracle Integration to Oracle Service Cloud (with the Oracle RightNow Adapter), which then triggers an event in Oracle Service Cloud and then back to Oracle Engagement Cloud, and so on. Oracle Integration-based integrations use echo suppression to prevent unwanted update or create events (the echoes) from returning to the source application.

Filtering is used at the source application together with a LastUpdatedBy attribute in the record payload. In prebuilt integrations, Oracle Integration uses the Oracle Engagement Cloud username created as part of the prebuilt integration setup to invoke every API of the application.

While the filtering is defined in Oracle Integration, it occurs in the event handler framework at activation/subscription time.

The Oracle Engagement Cloud event handler framework evaluates the echo suppression expression after the internal event has been enriched to prevent the echo payload push to Oracle Integration.

• Echo suppression expression for account create/update flows is as follows:


• Echo suppression expression for contact create/update flows is as follows:


Integrate Groovy Scripts

The Oracle Engagement Cloud Adapter inbound endpoint WSDL interface supports the use of concrete values for custom business objects in the WSDL in place of xsd:anyType parameters. This feature enables you to use the groovy script editor to create scripts to invoke integrations. The groovy script editor is unable to recognize xsd:anyType parameters.

Perform the following high level steps from the CRM Fusion Home page (that is, the Fuse user interface) to integrate the groovy script.
Note:

If you have existing integrations with inbound endpoints (with custom business objects having xsd:anyType) generated using an Oracle Integration version prior to 16.3.3 and want to use groovy scripts, the integration must be re-edited and all artifacts must be generated again.

1. Create a sandbox environment in Oracle Engagement Cloud.
   a. In the upper right corner, select Settings > Manage Sandboxes.
   b. Create a sandbox.
   c. Select Set as Active to activate the sandbox.

2. On the desktop, click Tools > Application Composer.

3. Register the Oracle Integration web service.
   a. Click Web Services.
   b. Click the icon to create a new web service connection.
   c. Enter the name and WSDL URL, then click Read WSDL.
   d. Complete the other fields on the page, then save and close the page.

4. Create the object function to invoke the process method of the web service.
   a. In the left navigation pane, click Object Workflows.
   b. Expand Objects > Custom Objects > CommonObject > common_object_name, then select Server Scripts.
   c. From the Actions dropdown list, select Add.
   d. Enter a function name and select a return value (for example, void).
   e. On the right side of the page, click Show/Hide Function Palette.
   f. Click Web Services.
   g. With the process function selected, click Insert.
      The Edit Script field is partially populated with the code for invoking the process method of the web service.
   h. Complete the script to create the object function. For example:
Create a Connection

The first step in creating an integration is to create the connections to the applications with which you want to share data.

1. In the navigation pane, click Integrations, then click 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.)

    The Create Connection — Select Adapter dialog is displayed.

3. Select an adapter from the dialog. You can also search for the type of adapter to use by entering a partial or full name in the **Search** field, and clicking **Search**.

    The Create New Connection dialog is displayed.

4. Enter the information to describe the connection.

    - 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, do not include a blank space (for example, **Sales Opportunity**).

    - Select the role (direction) in which to use this connection (trigger, invoke, or both). Only the roles supported by this 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, then try to drag the adapter into the section you did not select, you receive an error (for example, configure an Oracle Service Cloud (RightNow) Adapter as only an invoke, but drag the adapter to the trigger section).

    - Enter an optional description of the connection.
5. Click **Create**.

Your connection is created and you are now ready to configure connection details, such as email contact, connection properties, security policies, connection login credentials, and (for certain connections) agent group.

### Add a Contact Email

You can add an optional contact email address for notifications.

1. In the **Email Address** field, enter an optional email address. You do not receive automatic notifications at this address.
2. In the upper right corner, click **Save**.

### Configure Connection Properties

Enter connection information so your application can process requests.

1. Click **Configure Connectivity**.

The Connection Properties dialog is displayed.

2. In the **WSDL URL** field, specify the URL to use in this integration:
   - OSC Services Catalog WSDL URL
   - OSC Events Catalog URL (optional)
   - Interface Catalog URL (optional)

For information about obtaining the URL, see [Obtain the Oracle Engagement Cloud Adapter Service Catalog Service WSDL, Event Catalog URL, or Interface Catalog URL](#).

3. Click **OK**.
Configure connection security. See Configure Connection Security.

Configure Connection Security

Configure security for your Oracle Engagement Cloud Adapter connection by selecting the security policy and security token.

1. Click Configure Security.
2. Enter your login credentials:
   a. Select the security policy. Only the Username Password Token policy is supported. It cannot be deselected.
   b. Enter a username and password.
   c. Reenter the password a second time.
3. Click OK.

Test the Connection

Test your connection to ensure that it is successfully configured.

1. In the upper right corner of the page, click Test.
2. If your adapter connection uses a WSDL, you are prompted to select the type of connection testing to perform:
   a. **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.
   b. **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.

   If successful, the following message is displayed and the progress indicator shows 100%.
   Connection connection_name was tested successfully.

3. If your connection was unsuccessful, an error message is displayed with details. Verify that the configuration details you entered are correct.
4. When complete, click Save, then click Close.

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 navigation pane, click Integrations, then click the < arrow next to Designer.
2. Click Settings > Certificates.

   All certificates currently uploaded to the trust store are displayed in the Certificates dialog. The Filter By > Type list displays the following details:
• **Preinstalled**: Displays the certificates automatically installed in Oracle Integration. These certificates cannot be deleted.

• **Uploaded**: Displays the certificates uploaded by individual users. These certificates can be deleted and updated.

You can also search for certificates in the Search field. The search results are limited to a maximum of ten records sorted by name for performance and usability reasons. To ensure that your search results are more granular, enter as much of the certificate name as possible.

3. Click **Upload** at the top of the page.

4. In the Upload Certificate dialog box, select the certificate type. Each certificate type enables Oracle Integration to connect with external services.

• **Trust Certificate**: Use this option to upload a trust certificate.
  a. Enter a unique alias for the certificate.
  b. Click **Browse**, then select the trust file (for example, .cer or .crt) to upload.

• **Message Protection Certificate**: Use this option to upload a keystore certificate with SAML token support. Create, read, update, and delete (CRUD) operations are supported on this type of certificate.
  a. Enter a unique alias for the certificate.
  b. Click **Browse**, then select the certificate file (.cer or .crt) to upload.

• **Identity Certificate**: Use this option to upload a certificate for two-way SSL communication.
  a. Click **Browse**, then select the keystore file (.jks) to upload.
  b. Enter the password of the keystore being imported.
  c. Enter the comma-separated list of aliases from the keystore being imported.
  d. Enter the comma-separated list of passwords corresponding to key aliases.
  e. If you want to display the passwords in clear text, select **Show Key Password(s)**. This enables you to ensure that you are correctly entering a list of keystore passwords.

5. Click **Upload**.

6. Click the certificate name to view details such as the subject of the certificate, the issuer of the certificate, the date the certificate was issued, and the date the certificate expires.

### 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 navigation pane, click **Integrations**, then click **Connections**.
2. Locate the connection to refresh.
3. From the menu at the right, select **Refresh Metadata**.

A message is displayed indicating that the refresh was successful.

**Metadata refresh for connection "connection_type" has been initiated successfully.**
Add the Oracle Engagement Cloud Adapter to an Integration

When you drag the Oracle Engagement Cloud 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 Engagement Cloud Adapter endpoint properties.

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

Topics:
- Basic Info Page
- Trigger Request Page
- Trigger Response Page
- Invoke Operations Page
- Summary Page

Basic Info Page

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

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
</table>
| **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 dashes in the name. You cannot include the following:  
  - Blank spaces (for example, My Inbound Connection)  
  - Special characters (for example, #; 83& or rightnow4)  
  - Multibyte characters |
<p>| <strong>What does this endpoint do?</strong> | 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. |</p>
<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>What actions would you want to perform on this endpoint?</td>
<td>Select the action to perform. These options are only displayed when you are configuring the Oracle ERP Cloud Adapter as an invoke connection in an integration.</td>
</tr>
<tr>
<td>• <strong>Create, Update, Delete, Read Business Object</strong></td>
<td>Provides the standard configuration path for selecting a business object or service. This option displays the standard Operations and Response pages. This is the default selection.</td>
</tr>
<tr>
<td>• <strong>Import Data into Financials Cloud Application</strong></td>
<td>Provides a scenario for loading and orchestrating data from a secure FTP location to Oracle ERP Cloud. Data is loaded into a selected product interface table and then imported into the related main product application tables. A callback notification may also be configured to send when the data import completes. This option also shows a modified Operations page and a unique Response page in the Adapter Endpoint Configuration Wizard for importing data.</td>
</tr>
</tbody>
</table>

**Trigger Request Page**

Enter the Oracle Engagement Cloud connection trigger request values for your integration. The values you specify start the integration.

Select the specific type to receive as a request from Oracle Engagement Cloud. Your ability to select either a business object or event subscription is based on the content of the WSDL file (for business objects) or event catalog URL (for event subscriptions) you specified during Oracle Engagement Cloud Adapter configuration.

1. Select to receive a business object as a request from Oracle Engagement Cloud. This selection invokes the integration.

2. Select to receive an event subscription raised by the Oracle Engagement Cloud application as a request from Oracle Engagement Cloud. This selection invokes the integration.

**Note:**

If the options for selecting business objects and events are missing, that indicates that the event catalog URL was not supplied on the Connections page.
## Configure a Request

Select the request type appropriate to your integration. The fields that are displayed below are based on the request type that you select.

- **With Business Objects**: Select to display a list of business objects.
- **With Business Events**: Select to display a list of event subscriptions.

## Select a Business Object

(Only displayed if **With Business Objects** is selected)

Select the business object from the Oracle Engagement Cloud application to receive as a request that starts the integration.

## Business Event For Subscription

(Only displayed if **With Business Events** is selected)

Select the event subscription from the Oracle Engagement Cloud application to which to subscribe. This event is received as a request that starts the integration. Only events that can be subscribed to are displayed.
Enter an event condition filter expression. A filter expression specifies that the contents (payload or headers) of a message be analyzed before any event subscription is sent. For example, you can apply a filter expression that specifies that an event subscription be sent only if the message includes a customer ID. When the expression logic is satisfied, the event is accepted for delivery to the integration.

As another example, assume you have the following event payload and want to process records where OwnerName is provided:

```xml
...<Body xmlns="http://schemas.xmlsoap.org/soap/envelope/">
  <ns0:onEvent
    xmlns:ns0="http://xmlns.oracle.com/cloud/adapter/osc/UpdateCustomerFromAccountREQUEST/types">
    <ns0:getAccountResponse
      xmlns:wsu="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd"
      xmlns:wsa="http://www.w3.org/2005/08/addressing"
      xmlns:ns="http://xmlns.oracle.com/cloud/adapter/osc/UpdateCustomerFromAccountREQUEST/types"
      xmlns:env="http://schemas.xmlsoap.org/soap/envelope/">
      <ns0:result
        xmlns:ns4="http://xmlns.oracle.com/apps/crmCommon/salesParties/accountService/">
        <ns4:PartyId>100000003362469</ns4:PartyId><ns4:OwnerId>100000003362469</ns4:OwnerId></ns0:result>
    </ns0:getAccountResponse>
  </ns0:onEvent>
</Body>
```
The incoming event payload is referenced with $inputVariable. The payload response from the enrichment service can be referenced with $eventPayload. Given the event payload, you reference OwnerName as follows:

```xml
<?xml version="1.0" encoding="UTF-8"?>
<ns0:result>
  <ns0:OwnerName>Jim Hays</ns0:OwnerName>
</ns0:result>
</ns0:getAccountResponse>
</ns0:onEvent>
</Body>
```

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<?xml version="1.0" encoding="UTF-8"?>
<ns0:result>
  <ns0:OwnerName>Jim Hays</ns0:OwnerName>
</ns0:result>
</ns0:getAccountResponse>
</ns0:onEvent>
</Body>
```
Trigger Response Page

Enter the Oracle Engagement Cloud trigger response values for your integration.

You can configure the operation and business object that comprise the response type for Oracle Engagement Cloud.

- 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 Response Type — Immediate (Synchronous) Response is Required 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 Response Type — Delayed (Asynchronous) Response is Required for instructions.)

- No response is required: You select None on the Response page because a response is not required. (See None — No Response is Required for instructions.)

The Response page looks as follows:

![Response page screenshot]

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

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Response Type</td>
<td>Select Immediate for the Oracle Engagement Cloud 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.</td>
</tr>
<tr>
<td>Filter by object name</td>
<td>Type the initial letters to filter the display of business objects.</td>
</tr>
</tbody>
</table>
## Table 3-1  Response Type — Immediate (Synchronous) Response is Required

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select a Business Object</td>
<td>Select the business object to receive from the Oracle Engagement Cloud application as a response. You can filter the display of business objects by typing the initial letters of business objects in the <strong>Filter by object name</strong> field. A description of the selected business object is displayed below this list.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Response Type</td>
<td>Select <strong>Delayed</strong> to configure a successful call-back response, a failed callback response, or both. This enables you to configure the operation and business objects that you want the Oracle Engagement Cloud application to process as part of a successful callback response, a failed callback response, or both.</td>
</tr>
</tbody>
</table>
| 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 Engagement Cloud 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 Engagement Cloud application to process as part of an error call-back response sent by the integration. |
| Select the operation to perform on the business object | Select the operation to perform on the business object.                                                                                       |
| Life Cycle                   | Displays the current state of the selected business document. Active indicates the business document is available for use. Deprecated indicates the business document is nearing the end of use and must be used with caution.                                                                                      |
| Description                  | Displays a description of the selected business object or service.                                                                                                                                         |

The following table describes the fields available if no response is required.
Table 3-3  None — No Response is Required

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Response Type</td>
<td>Select None.</td>
</tr>
<tr>
<td>Select a Business Object</td>
<td>If you select None, this section is hidden.</td>
</tr>
</tbody>
</table>

Invoke Operations Page

Enter the Oracle Engagement Cloud invoke operation values for your integration.

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
</table>
| Browse by                            | Select to browse by business object or service. There is a one-to-one correspondence between the business object and service. The service acts on the business document.  
  • Business Objects: Select to browse a list of available business objects.  
  • Services: Select to browse a list of available business services.  
  • Business (REST) Resource: Select to browse a list of available Oracle Fusion Applications REST API resources. This option is only available if you specified an interface catalog URL in the Interface Catalog URL field on the Connection Properties page when configuring the Oracle Engagement Cloud Adapter.  
  Note: The Oracle Engagement Cloud Adapter currently pulls all resources exposed by the interface catalog and displays them for selection. For information about the public resources that are supported, see the Resource Types section of REST API for Oracle Sales Cloud Release 13. |
| Filter by object name (displayed if Business Objects is selected) | Type the initial letters to filter the display of business objects.         |
| Select a Business Object (displayed if Business Objects is selected) | Select the business object to use.                                         |
| Filter by service (displayed if Services is selected) | Type the initial letters to filter the display of services.                |
| Select a Service (displayed if Services is selected) | Select the service to use.                                                |
| Select a Service Application (displayed if Business (REST) Resources is selected) | Select the service application to see the business resources defined in the application. |
### Element Description

**Select a Business Resource**  
Select the business resource to use. You can then click **Browse and configure a child resource** to select the corresponding child business resources of that parent to use.  
**Note:** Existing integrations created prior to the introduction of the ability to select a child business resource can be edited to select parent business resources and their corresponding child business resources.  

**Select the Operation to Perform on the Business Object/Resource or Service**  
Select the operation to perform on the selected business object, business (REST) resource, or service.  

**Browse and configure a child resource**  
Click to access a page to select the following:  
- The child business resources of the selected parent business resource  
- The operation to perform on the child business resources  

After you click **Ok**, the link name changes to **View and edit the configuration of a child resource**.  
Both the parent and child business resources are displayed on the Summary page.  
To reset to your original selections, click this link, then click **Reset**.  

**Life Cycle**  
Displays the state of the selected business object or service. Deprecated indicates the business document is nearing the end of use and must be used with caution.  

**Description**  
Displays a description of the selected business object or service.  

---

**Summary Page**

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

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
</table>
| **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**. Click **Cancel** to cancel your configuration details. |
You can use the Oracle Engagement Cloud Adapter to implement common patterns.

Topics:

• Invoke an Endpoint Dynamically

Invoke an Endpoint Dynamically

You can dynamically invoke a REST endpoint/URL at runtime without configuring additional invoke connection or REST outbound details. As long as the Oracle Engagement Cloud REST APIs return a response with HATEOS links, you can use this feature by mapping the HATEOS link to the invoke connection. This feature is useful in situations that require invoking a REST endpoint dynamically or when the endpoint is not known at design time. This feature is also useful in situations that require invoking multiple REST services, all of which accept the same input payload and return the same response payload as configured for the outbound endpoint. For these cases, this feature eliminates the need to create multiple connections to invoke each REST endpoint.

Note:

Note the following restrictions.

• The request and response schema must be the same as provided during endpoint configuration.

• Template parameters are not supported while mapping these properties.

• The HTTP verb cannot be changed for the endpoint URL. For example, if the endpoint is configured to use POST, the outgoing request uses POST even if the endpoint URI changes at runtime.

• Because the endpoint URL is determined at runtime, there is no facility to test whether the security credentials provided during connection configuration also work with the new endpoint URL. If you think the endpoint URL determined at runtime requires a different authorization header then the original URL, you may need to provide a mapping for the authorization standard header.

This use case provides a high level overview of one way to design an integration that uses dynamic endpoints. You retrieve child objects using the REST API (for example, Primary Address is a child object of the Account parent object). The integration is designed as follows.
• An initial invoke is configured to get the Account object by using the REST API. The response of this REST API does not provide the child objects. Instead, there are HATEOS links to the child objects (that is, the Primary Address object).

• A second invoke uses the HATEOS links from the earlier response to make another invoke connection to the REST endpoint to fetch the child Primary Address object using dynamic REST endpoint support.

To change the endpoint configuration at runtime, you map one or more of the various properties under the ConnectivityProperties target element.

1. Create an orchestrated integration.

2. Drag an adapter into the integration canvas as a trigger connection (it can be any adapter).

3. Configure the adapter in the Adapter Endpoint Configuration Wizard.

4. Drag an initial Oracle Engagement Cloud Adapter into the integration canvas as an invoke connection and configure it to use the crmRestApp service application and the Account object (business resource).

5. In the mapper between the trigger adapter connection and the Oracle Engagement Cloud Adapter invoke connection, map source elements to target elements. For this example, a PartyNumber source element is passed to an id target element.

6. Add a for-each action to iterate between the HATEOS links. The value in the Repeating Element field is from the response object.

7. Add a switch action to get the HATEOS link corresponding to the Primary Address object.
8. Drag the Oracle Engagement Cloud Adapter into the switch action as the second invoke connection and configure it to use the `crmRestApp` service application and the `Primary Address` object (business resource). This object uses dynamic REST endpoint support. The `Primary Address` is a collection of links. The `getAll` operation is selected for getting all the HATEOS links.

9. In the mapper immediately before the second Oracle Engagement Cloud Adapter invoke connection, expand `RestApi` under `ConnectivityProperties` in the target section.

10. From the source section, map `href` to `AbsoluteEndpointURI` under `ConnectivityProperties`. The `ConnectivityProperties` schema element supports dynamic REST endpoints. The `href` element points to the `Primary Address` object link. The `href` element is invoked by the Oracle Engagement Cloud Adapter.
If necessary, map other nodes under **ConnectivityProperties**. The runtime values provided by these mappings dynamically configure the request.

You can also hover the cursor over these properties for brief descriptions.

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AbsoluteEndpointURI</td>
<td>Represents the absolute endpoint URL that the REST Adapter invokes. Empty values are ignored. To route the request to an endpoint URL determined at runtime, provide a mapping for this element. AbsoluteEndpointURI takes first precedence among other URL-related properties under ConnectivityProperties.</td>
</tr>
<tr>
<td>BaseUri</td>
<td>The equivalent of the base URL provided during connection configuration. To substitute only the base URI and retain the rest of the URL, provide a mapping for this element. The mapping is ignored if AbsoluteEndpointURI has a nonempty runtime value.</td>
</tr>
<tr>
<td>RelativeUri</td>
<td>Forms the part of the endpoint URI between BaseUri and ?. The mapping has no effect if BaseUri has an empty runtime value or AbsoluteEndpointURI has a nonempty runtime value. The runtime value must start with a /.</td>
</tr>
<tr>
<td>Uri</td>
<td>Use the various elements under this node to substitute runtime values for the specific parts of an endpoint URL.</td>
</tr>
<tr>
<td>Scheme</td>
<td>Provide a mapping to change only the scheme of the endpoint URL. Supported values are HTTP and HTTPS.</td>
</tr>
<tr>
<td>Host</td>
<td>Provide a mapping to change only the Host portion of the endpoint URL.</td>
</tr>
<tr>
<td>Port</td>
<td>Provide a mapping to change only the port of the endpoint URL.</td>
</tr>
<tr>
<td>Query</td>
<td>Provide a mapping to change only the query portion of the endpoint URL. A query portion follows the ?.</td>
</tr>
<tr>
<td>Path</td>
<td>Provide a mapping to change only the path portion of the endpoint URL. A Path is the part of a URI between the hostname and ?.</td>
</tr>
<tr>
<td>Plugin</td>
<td>The various properties under this node impact the way the REST Adapter invokes the endpoint URL.</td>
</tr>
<tr>
<td>PostQueryString</td>
<td>When the runtime value is true and the HTTP verb is POST, the query string parameters are sent using POST as form parameters. The default is false.</td>
</tr>
</tbody>
</table>
UseFormUrlEncoding

When the runtime value is false, the REST Adapter uses RFC 3986-compliant encoding to encode the query parameters. The default is true. This is the equivalent of setting the custom header x-ics-use-x-www-form-urlencoded to false. See section “RFC 3986 Support for Encoding Query Parameters” for more information on x-ics-use-x-www-form-urlencoded. x-ics-use-x-www-form-urlencoded takes precedence when both are set.

12. Drag an FTP Adapter to the switch action for writing the Primary Address object response to a file on an FTP server.

13. In the mapper between the Oracle Engagement Cloud Adapter and the FTP Adapter, map the Primary Address object details.
14. When complete, integration design looks as follows:

15. Activate and invoke the integration. The Oracle Engagement Cloud Adapter invokes the endpoint URI determined at runtime.
Troubleshoot the Oracle Engagement Cloud Adapter

Review the following topics to learn about troubleshooting issues with the Oracle Engagement Cloud Adapter.

Topics:

• If you receive an authentication failure error message when testing the Oracle Engagement Cloud Adapter connection, you must create the CSF key in Oracle SOA Composer.
  For more information, see Configure Oracle Engagement Cloud for Event Subscriptions.

Additional integration troubleshooting information is provided. See Troubleshoot Oracle Integration in Using Integrations in Oracle Integration.