

Oracle® Cloud

Adapter SDK Installation Guide

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This guide provides installation instructions for the Cloud Adapter SDK and setup instructions for the MyCloud Adapter and the MyCloud Sample Application.

Oracle Cloud Adapter SDK Installation Guide,

E68714-01

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Preface

The *Adapter SDK Installation Guide* provides installation instructions for the Cloud Adapter SDK and setup instructions for the MyCloud Adapter and the MyCloud Sample Application. With the help of the MyCloud Adapter, you can build a sample end-to-end integration flow using a SOA composite application.

Topics:

- [Audience](#)
- [Related Documentation and Resources](#)
- [Conventions](#)

Audience

If you are a cloud adapter architect or developer, this book will teach you about SOA composite application development using the MyCloudAdapter. This adapter uses a custom metadata parser to browse business objects in the MyCloudApplication, a service-contract-based sample SaaS application.

Before reading this document, you should understand Java, web services, and integration concepts, including adapters.

Related Documentation and Resources

Oracle provides a comprehensive set of preexisting adapters to connect with various data sources, including common and popular SaaS applications, enterprise applications, databases, messaging infrastructure systems, and other technologies.

For more information, see these Oracle resources:

- Getting Started with Oracle Cloud
- Oracle Integration Cloud Service for more documentation, videos, and tutorials, including information on adapters.
- Oracle Public Cloud
<http://cloud.oracle.com>
- Developing Custom Oracle Cloud Adapters

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. |
| <i>italic</i> | Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values. |
| <code>monospace</code> | Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter. |

Installing Cloud Adapter SDK

This chapter describes how to install the Cloud Adapter SDK.

Topics

- [Installing Oracle SOA Suite](#)
- [Installing Cloud Adapter SDK Patches](#)
- [Performing Post-Installation Configuration](#)

Installing Oracle SOA Suite

Installing Oracle SOA Suite involves downloading the installation files and using the installer.

1. Go to the [Oracle SOA Suite Downloads](#) website.
2. Click **Accept License Agreements**.
3. Select **All Platforms - Generic 64Bit JVM** from the list under Release 12c (12.1.3.0.0).
4. Expand **Recommended Install Process** and click the first **Download** link.

Free Oracle SOA Suite 12c Installations

This is the latest release of the Oracle SOA Suite 12c. Please see the [Documentation](#) tab for Release Notes, Installation Guides and other release specific information. Please also see the [Samples](#) provided for this release.

Release 12c (12.1.3.0.0)

All Platforms - Generic 64bit JVM

Recommended Install Process

The following table breaks out the pieces needed to install Oracle SOA Suite.

Components for a generic installation are available for downloading in the table below. This is a known installation and configuration path for this release. Please see the [Fusion Middleware: Download, Installation & Configuration Readme](#) and the [Installation Guide for Oracle SOA and BPM Suite](#) for assistance in creating alternative installation scenarios.

| SOA Suite Quick Start Installer | |
|---------------------------------|---|
| 1 | <p>SOA Suite 12.1.3 Size: 2.97 GB, Check Sum: 1579850769</p> <p>Note: The generic SOA Suite Quick Start Installer for developers is used on all platforms. It allows you to quickly install a development or evaluation environment on a single host computer. It includes Oracle BPEL Process Manager, Oracle Human Workflow, Oracle Business Rules, Oracle Mediator, Oracle Service Bus, Technology Adapters, Oracle Enterprise Scheduler, SOA Spring Component, Enterprise Manager Fusion Middleware Control, Oracle JDeveloper with SOA IDE extensions and an integrated WebLogic Server and Java DB.</p> |

- Follow sections 2.1, 2.2, and 2.3 in [Installing SOA Suite Quick Start for Developers](#).

Next, see [Installing Cloud Adapter SDK Patches](#).

Installing Cloud Adapter SDK Patches

Installing the Oracle Adapter SDK patches involves downloading the installation files and configuring your environment.

- Go to the [Release Downloads for Oracle Integration Adapters](#) website.
- Click **Accept License Agreement**.
- Select **All Platforms - Generic 64Bit JVM** from the list under Release 12c (12.1.3.0.0 or 12.1.3.0.1).
- Expand **Prerequisites & Recommended Install Process** and click the **Download** link for Oracle Cloud Adapters.

Integration Adapters Installation

This is the latest release of Oracle Application Adapters 12.1.3.0.0 (contains integration adapters for SAP R/3, Siebel, Peoplesoft and JD Edwards).

The latest release of Oracle Cloud Adapters 12.1.3.0.1 (contains Oracle Cloud Adapters for Oracle RightNow, Oracle Sales Cloud, Eloqua, Oracle HCM Cloud, and Salesforce.com)

Please see the [Documentation tab](#) for Release Notes, Installation Guides and other release specific information.

Release 12c (12.1.3.0.0 or 12.1.3.0.1)

All Platforms-Generic 64 Bit JVM ▼

Prerequisites & Recommended Install Process

The following table breaks out the pieces needed to install the adapters.

Prerequisites for the installation are described at the [SOA Suite downloads page](#)

| Product Installation | | |
|----------------------|--|--------------------------|
| 1 | Oracle Application Adapters 12.1.3.0.0 Part 1 of 2 Size: 142.5 MB, Check Sum: 4003634921 | Download |
| 2 | Oracle Application Adapters 12.1.3.0.0 Part 2 of 2 Size: 94.6 MB, Check Sum: 1507758319 | Download |
| 3 | Oracle Cloud Adapters 12.1.3.0.1 Size: 11.35 MB, Check Sum: 4133412259 11905615 | Download |

For steps for downloading Patch Sets and MLRs for SOA Suite, please check [here](#)

5. Save the `fmw_12.1.3.0.1_cloud_adapters_Disk1_1of1.zip` file and extract it to a directory named `PATCH_TOP`.
6. Go to `PATCH_TOP` and open the `README.txt` file to view the instructions.

1 Prerequisites

Ensure that you meet the following requirements before you install the patch:

1. Verify that Bundle Patch 1 (Patch# 19707784 SOA Bundle Patch 12.1.3.0.1) has been applied to your 12.1.3.0.0 environment.
Patch Number 19707784 is available for download as follows :
 - Login to support.oracle.com
 - Click on the Patches & Updates Tab
 - In the Patch Search section, search for Patch number 19707784

2 Installation Instructions



The recommended sequence for installation (for both SOA & OSB environments) is as follows :


1. Pre-requisite - p19707784_121300_Generic.zip SOA Bundle Patch 12.1.3.0.1:
 - Expand p19707784_121300_Generic.zip and follow the instructions in the README to install this patch.
 2. p20680367_121301_Generic.zip Cloud Adapter Pack SOA+OSB for 12.1.3.0.0 SOA BP1 (1 of 2)
 - Expand p20680367_121301_Generic.zip and follow the instructions in the README to install this patch
 3. p20780464_121300_Generic.zip Cloud Adapter Pack SOA+OSB for 12.1.3.0.0 SOA BP1 (2 of 2)
 - Expand p20780464_121300_Generic.zip and follow the instructions in the README to install this patch.
7. As described in the Prerequisites section of README.txt, download Patch 19707784 from <http://support.oracle.com>.

Patch Search

Patch Simple Search Results

Filters: Patch Name or Number is 19707784;

Table View  Detach  Share Link

| Patch Name | Description | Release | Platform (Language) | Recommended | Classification | Product |
|------------|-------------------------------------|------------|-------------------------------------|---|----------------|------------------|
| 19707784 | SOA Bundle Patch 12.1.3.0.1 (Patch) | 12.1.3.0.0 | Generic Platform (American English) |  | Security | Oracle SOA Suite |

8. Save the p19707784_121300_Generic.zip file and extract it to the PATCH_TOP directory.
9. Before applying the patches you downloaded, ensure that the ORACLE_HOME environment variable is set to the Middleware Home directory where you installed Oracle SOA Suite.

1. Set the ORACLE_HOME environment variable to the Middleware Home directory where you have installed <product name>.
For example, set ORACLE_HOME=C:\<>
For Unix platforms: oexport ORACLE_HOME=/home/{user id}/mw_home

10. Apply the patches in the order given in the Installation Instructions section of the README.txt file.

- a. Open the Command Prompt console, go to the PATCH_TOP/19707784 directory, and run the following command:

```
$ORACLE_HOME/OPatch/patch apply
```

- b. Ensure that the patch is successfully applied.

- c. Extract the `p20680367_121301_Generic.zip` file (included in the Adapter SDK download) to the `PATCH_TOP` directory.
 - d. Go to the `PATCH_TOP/20680367` directory, and run the following command:
`$ORACLE_HOME/OPatch/patch apply`
 - e. Ensure that the patch is successfully applied.
 - f. Extract the `p20780464_121301_Generic.zip` file (included in the Adapter SDK download) to the `PATCH_TOP` directory.
 - g. Go to the `PATCH_TOP/20780464` directory, and run the following command:
`$ORACLE_HOME/OPatch/patch apply`
 - h. Ensure that the patch is successfully applied.
11. Start JDeveloper using one of these commands:
- Windows: `%ORACLE_HOME%\jdeveloper\jdev\bin\jdev -clean`
- Linux: `./$ORACLE_HOME/jdeveloper/jdev/bin/jdev -clean`

You should see the Cloud adapters in the JDeveloper component palette.

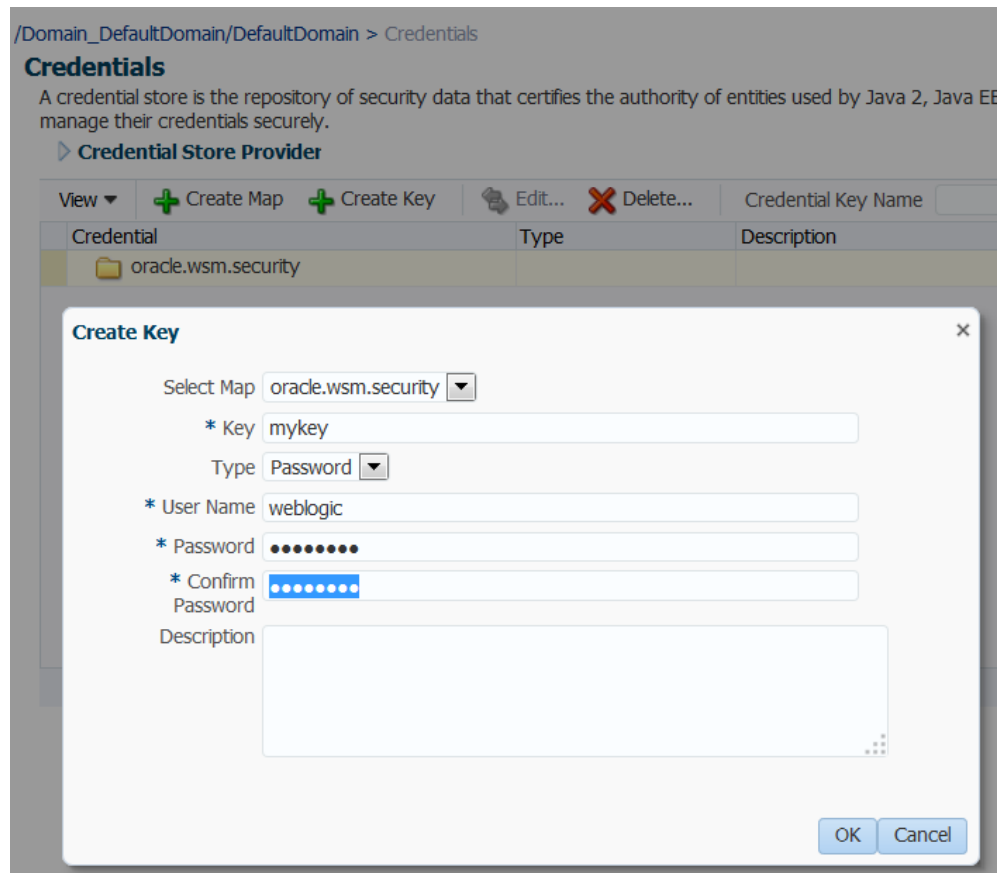
Next, see [Performing Post-Installation Configuration](#).

Performing Post-Installation Configuration

After you install the Cloud Adapter SDK, you must perform a few configuration tasks, including deploying the `cloudsdk.ear` file and granting access permissions.

1. Deploy the `cloudsdk.ear` file as described in [Deploying the cloudsdk.ear File from the Oracle WebLogic Server Administration Console](#).
2. Grant permissions as described in [Granting Permissions to Access the Credentials Store](#).

In Step 7, select `jca-binding-api.jar` as `file:${soa.oracle.home}/soa/modules/oracle.soa.adapter_11.1.1/jca-binding-api.jar`.
3. Create the CSF Map as described in [Creating the CSF Map in Oracle Enterprise Manager Fusion Middleware Control](#).
4. Create the CSF Key as described in [Creating the CSF Key for Other Cloud Adapters in Oracle Enterprise Manager Fusion Middleware Control](#).



Using MyCloudApplication and MyCloudAdapter

This chapter describes how to use MyCloudApplication and MyCloudAdapter to build a sample end-to-end integration flow using a SOA composite application.

Topics

- [About MyCloudApplication and MyCloudAdapter](#)
- [Deploying MyCloudApplication](#)
- [Registering MyCloudAdapter with Jdeveloper](#)
- [Building a SOA Composite Application Using MyCloudAdapter](#)
- [Verifying the Result in MyCloudApplication](#)

About MyCloudApplication and MyCloudAdapter

The adapter named MyCloudAdapter connects to the application named MyCloudApplication. To demonstrate the use of MyCloudAdapter, you deploy MyCloudApplication, register MyCloudAdapter, and create a SOA composite application that uses MyCloudAdapter to connect to MyCloudApplication.

MyCloudApplication is:

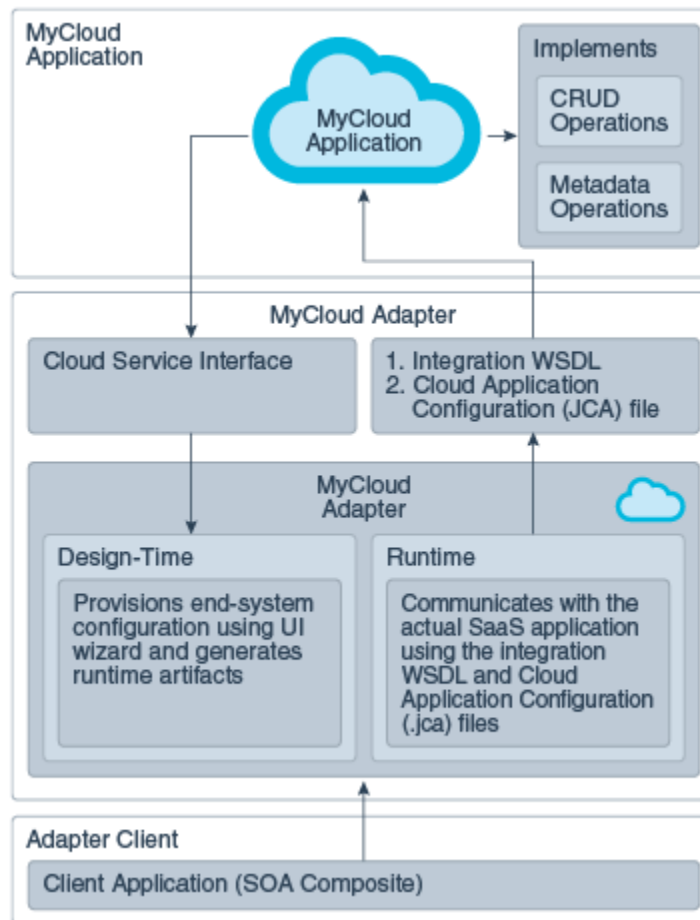
- A Java-based web application, developed using a polymorphic service contract
- A simple synchronous service that supports CRUD operations on selected business objects such as Contact and Account
- An example of the metadata API method (DescribeEntity API) which returns business entity metadata
- Based on a polymorphic service contract that allows multiple business entities to be added dynamically, without changing the service contract
- Equipped with a UI that lets users add new custom business objects and edit existing metadata

MyCloudAdapter is:

- Specific to MyCloudApplication in its implementation
- Equipped with a custom metadata parser implementation that can:
 - Parse the polymorphic WSDL
 - Browse the business objects and metadata, even if they have changed

- Generate the strongly typed integration WSDL for a selected business object and operation
- Equipped with a wizard that displays the available business objects and allowed operations when you navigate through it
- Able to handle inbound or outbound communication

The following diagram illustrates the relationships between MyCloudApplication, MyCloudAdapter, and the SOA composite application.



The following screen shot shows the WSDL file for MyCloudApplication.

```

<ns:entities>
  <!--Zero or more repetitions:-->
  <ns:DynamicEntity>
    <!--Optional:-->
    <ns:EntityType>
      <!--Optional:-->
      <ns:ID></ns:ID>
      <!--Optional:-->
      <ns:Name>Account</ns:Name>
      <!--Optional:-->
      <ns:Type></ns:Type>
    </ns:EntityType>
    <!--Optional:-->
    <ns:FieldValueCollection>
      <!--Zero or more repetitions:-->
      <ns:EntityFields>
        <ns:InternalName>AccountID</ns:InternalName>
        <ns:Value>1234321</ns:Value>
      </ns:EntityFields>
      <ns:EntityFields>
        <ns:InternalName>Address1</ns:InternalName>
        <ns:Value>21 Polaris Rd</ns:Value>
      </ns:EntityFields>
      <ns:EntityFields>
        <ns:InternalName>Phone</ns:InternalName>
        <ns:Value>1234567890</ns:Value>
      </ns:EntityFields>
      <ns:EntityFields>
        <ns:InternalName>City</ns:InternalName>
        <ns:Value>Mumbai</ns:Value>
      </ns:EntityFields>
      <ns:EntityFields>
        <ns:InternalName>State</ns:InternalName>
        <ns:Value>MH</ns:Value>
      </ns:EntityFields>
      <ns:EntityFields>
        <ns:InternalName>Country</ns:InternalName>
        <ns:Value>India</ns:Value>
      </ns:EntityFields>
      <ns:EntityFields>
        <ns:InternalName>AccountRating</ns:InternalName>
        <ns:Value>A</ns:Value>
      </ns:EntityFields>
      <ns:EntityFields>
        <ns:InternalName>AccountDate</ns:InternalName>
        <ns:Value>2015-04-24</ns:Value>
      </ns:EntityFields>
    </ns:FieldValueCollection>
    <!--Optional:-->
    <ns:Id></ns:Id>
  </ns:DynamicEntity>
</ns:entities>

```

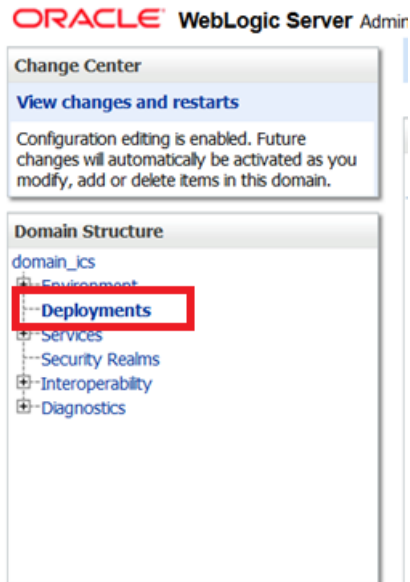
Deploying MyCloudApplication

The MyCloudAdapter is an adapter for MyCloudApplication, so before you can use MyCloudAdapter, MyCloudApplication must be deployed.

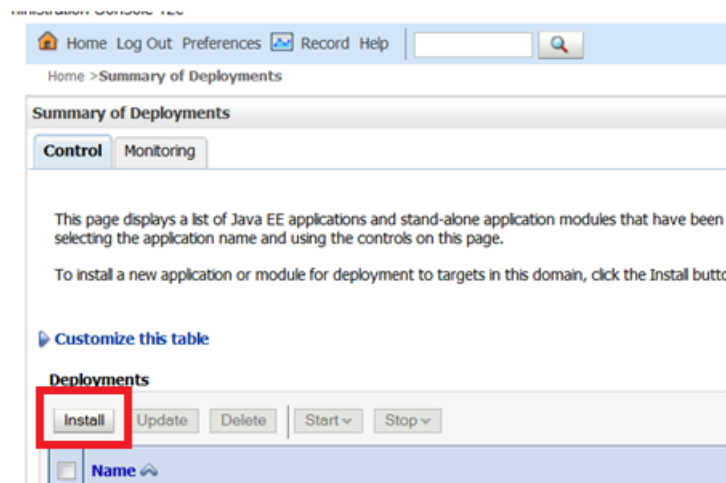
1. Go to the WebLogic Administration Console:

`http://hostname:port/console`

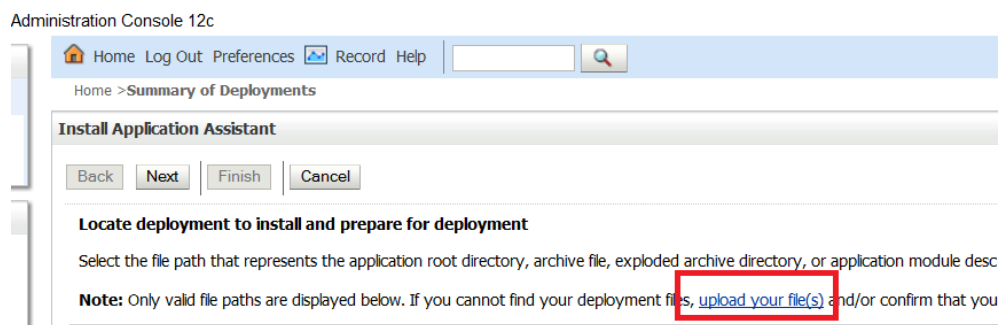
2. Under Domain Structure, select **Deployments**.



3. On the Summary of Deployments page, click **Install**.



4. In the Install Application Assistant, click **upload your file(s)**.



5. For Deployment Archive, click **Browse** and select `MyCloudApplication.war`.

Administration Console 12c

Home > Summary of Deployments

Install Application Assistant

Back Next Finish Cancel

Upload a deployment to the Administration Server

Click the Browse button below to select an application or module on the machine from which you are currently browsing. W

Deployment Archive: Browse... MyCloudApplication.war

Upload a deployment plan (this step is optional)

A deployment plan is a configuration which can supplement the descriptors included in the deployment archive. A deployme archive will be a directory of configuration information packaged as a .jar file. See related links for additional information about

Deployment Plan Archive: Browse... No file selected.

Back Next Finish Cancel

6. Click Next.
7. Make sure the WAR file is uploaded successfully.
8. Click Next.
9. Under Choose Targeting Style, click **Install this deployment as an application**.

Administration Console 12c

Home > Summary of Deployments

Install Application Assistant

Back Next Finish Cancel

Choose targeting style

Targets are the servers, clusters, and virtual hosts on which this deployment will run. There are

☒ **Install this deployment as an application**

The application and its components will be targeted to the same locations. This is the most common

☐ **Install this deployment as a library**

Application libraries are deployments that are available for other deployments to share. Libraries

Back Next Finish Cancel

10. Click Next.

11. Use default values for the optional settings.

12. Click **Finish**.

| | | | | |
|--------------------------|-----------------------------------|-----------|------|------------------------|
| <input type="checkbox"/> | JmsAdapter | Active | ✔ OK | Resource Adapter |
| <input type="checkbox"/> | LdapAdapter | Installed | | Resource Adapter |
| <input type="checkbox"/> | MQSeriesAdapter | Installed | | Resource Adapter |
| <input type="checkbox"/> | MSMQAdapter | Installed | | Resource Adapter |
| <input type="checkbox"/> | MyCloudApplication | Active | ✔ OK | Web Application |
| <input type="checkbox"/> | OracleAppsAdapter | Installed | | Resource Adapter |
| <input type="checkbox"/> | OracleBamAdapter | Installed | | Resource Adapter |
| <input type="checkbox"/> | OSB Instance Tracking Application | Active | ✔ OK | Enterprise Application |
| <input type="checkbox"/> | SAPAdapter | Installed | | Resource Adapter |

After deployment, the WSDL file is located here:

`http://hostname:port/MyCloudApplication/MyCloudAppService?WSDL`

Next, see [Registering MyCloudAdapter with Jdeveloper](#).

Registering MyCloudAdapter with Jdeveloper

To make MyCloudAdapter available in the JDeveloper component palette, you must register it.

1. Copy `mycloudadapter.jar` to these locations:

`%ORACLE_HOME%\jdeveloper\dropins`

`%ORACLE_HOME%\soa\soa\modules\oracle.cloud.adapter_12.1.3`

2. Add the adapter JAR file to the CLASSPATH by editing the `setDomainEnv` script file. This file is in the `bin` subdirectory of the domain directory, `WebLogicInstallDirectory\user_projects\domains\DomainName\bin`. Here is an example entry in the file:

```
set POST_CLASSPATH=%ORACLE_HOME%\soa\soa\modules
\oracle.cloud.adapter_12.1.3\mycloudadapter.jar;%POST_CLASSPATH%
```

3. Restart the WebLogic SOA server.

The MyCloudAdapter appears in the JDeveloper component palette.

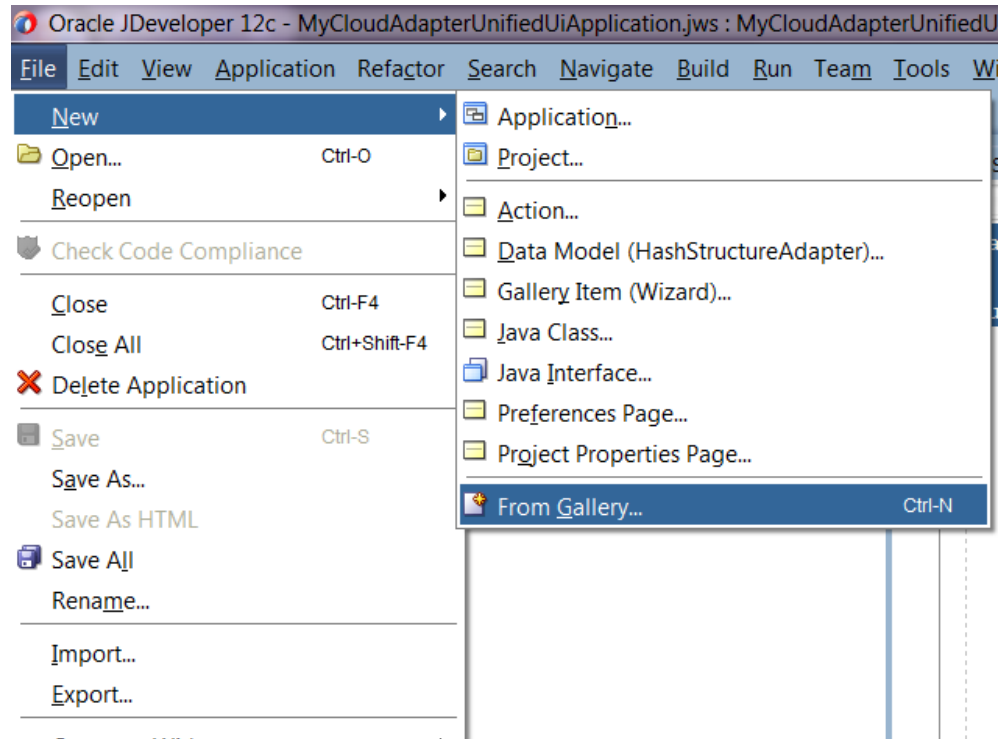
Next, see [Building a SOA Composite Application Using MyCloudAdapter](#).

Building a SOA Composite Application Using MyCloudAdapter

To use MyCloudAdapter, you can add it to a SOA composite application in JDeveloper.

1. Open JDeveloper.

2. Select **File > New > From Gallery**.



3. Select **SOA Application** from the gallery.
4. Type an Application Name.
5. Type a Project Name.
6. Click **Finish**.

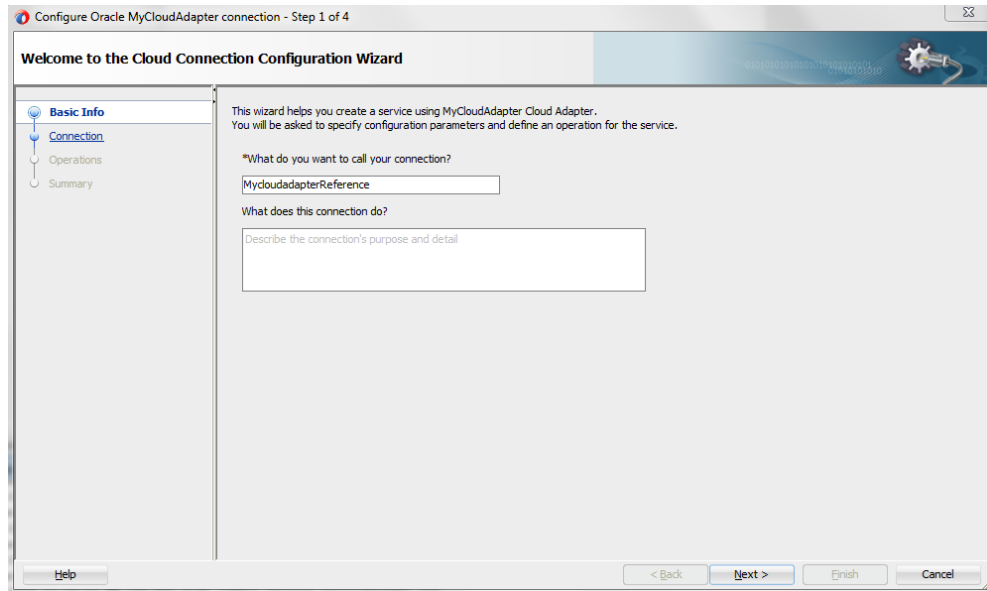
An empty `composite.xml` file for the project opens.

7. Drag and drop MyCloudAdapter from the Cloud category of the component palette to the External References section of the `composite.xml` file.

An adapter used as an external reference is *outbound*: the adapter invokes the application with which it interfaces.

The MyCloudAdapter wizard opens to the Welcome page.

8. Type a Reference Name for the adapter.



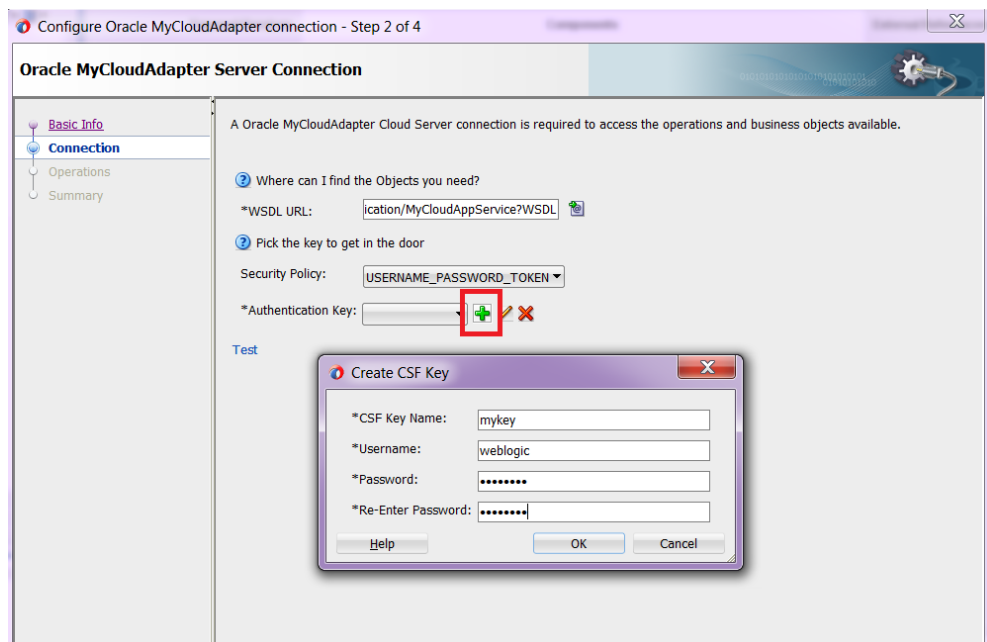
9. Click **Next**.

The Connection page of the wizard appears.

10. Type the MyCloudAppService URL in the WSDL URL field.

`http://hostname:port/MyCloudApplication/MyCloudAppService?`
WSDL

11. Create a new Authentication Key and provide CSF key details.

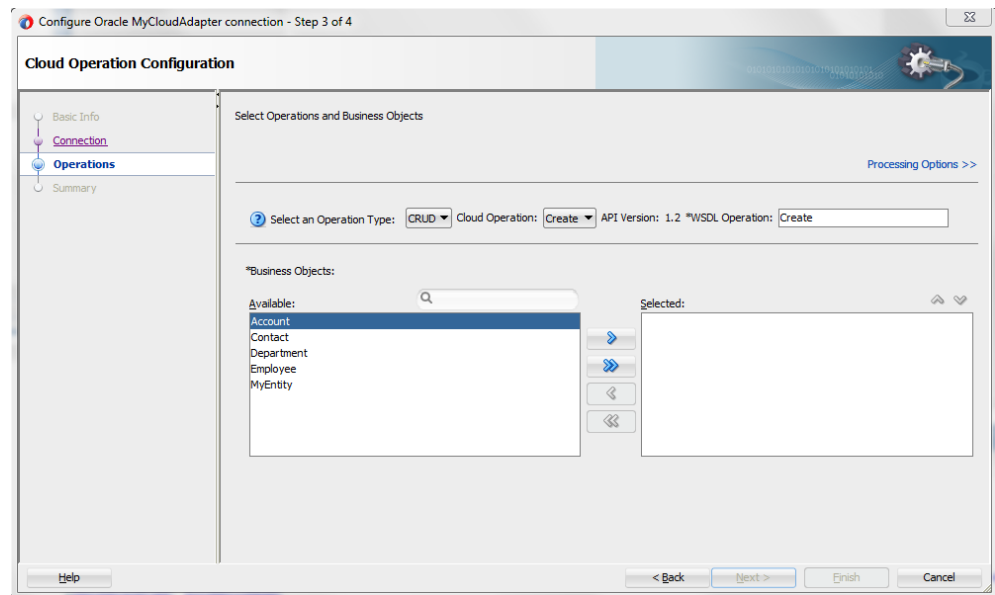


12. Click **Test** to test connectivity to the service.



13. Click Next.

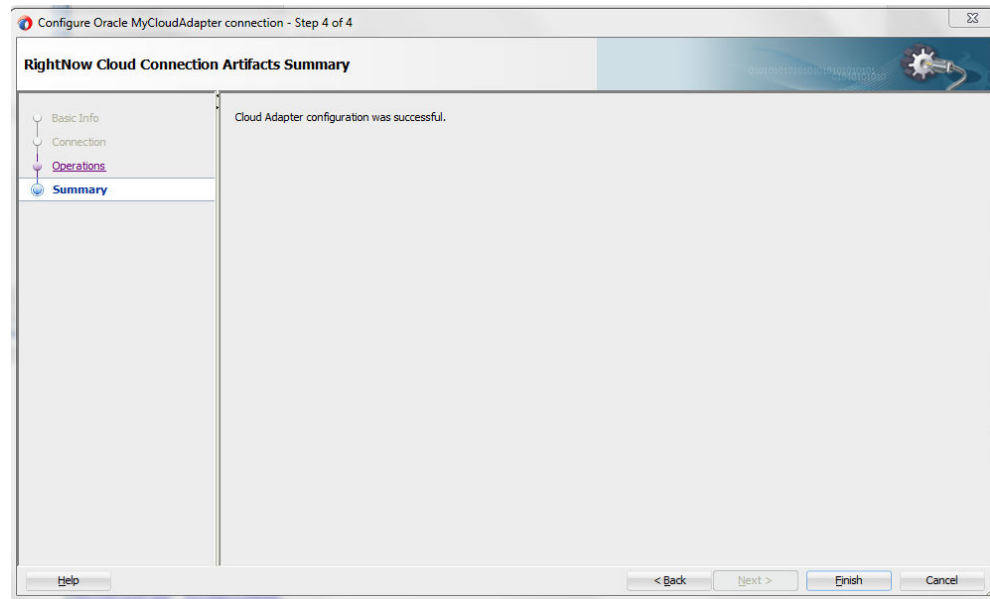
The Operations page of the wizard appears.



14. Move desired business objects to the Selected area.

15. Click Next.

The Summary page of the wizard appears.



16. Click **Finish** to generate artifacts and references for the adapter.

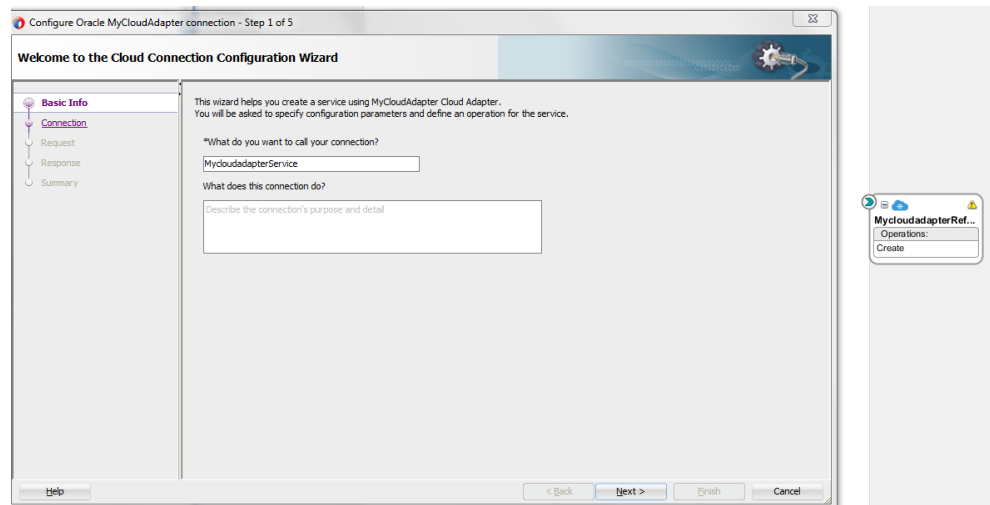
Runtime artifacts such as the Cloud Application Configuration file (.jca), Integration WSDL files, and corresponding schemas are generated.

17. Drag and drop MyCloudAdapter from the Cloud category of the component palette to the Exposed Services section of the `composite.xml` file.

An adapter used as an exposed service is *inbound*: the application with which the adapter interfaces invokes the adapter.

The MyCloudAdapter wizard opens to the Welcome page.

18. Type a Service Name for the adapter.



19. Click **Next**.

The Connection page of the wizard appears.

20. Type the MyCloudAppService URL in the WSDL URL field.

`http://hostname:port/MyCloudApplication/MyCloudAppService?`
WSDL

21. Select the Authentication Key you created in a previous step.

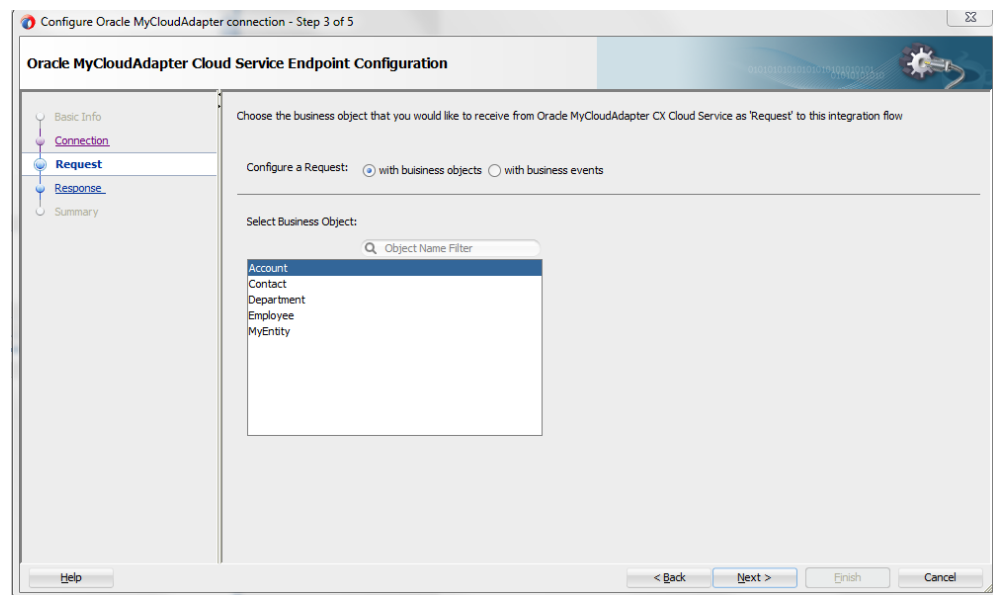
22. Click **Test** to test connectivity to the service.



23. Click **Next**.

The Request page of the wizard appears.

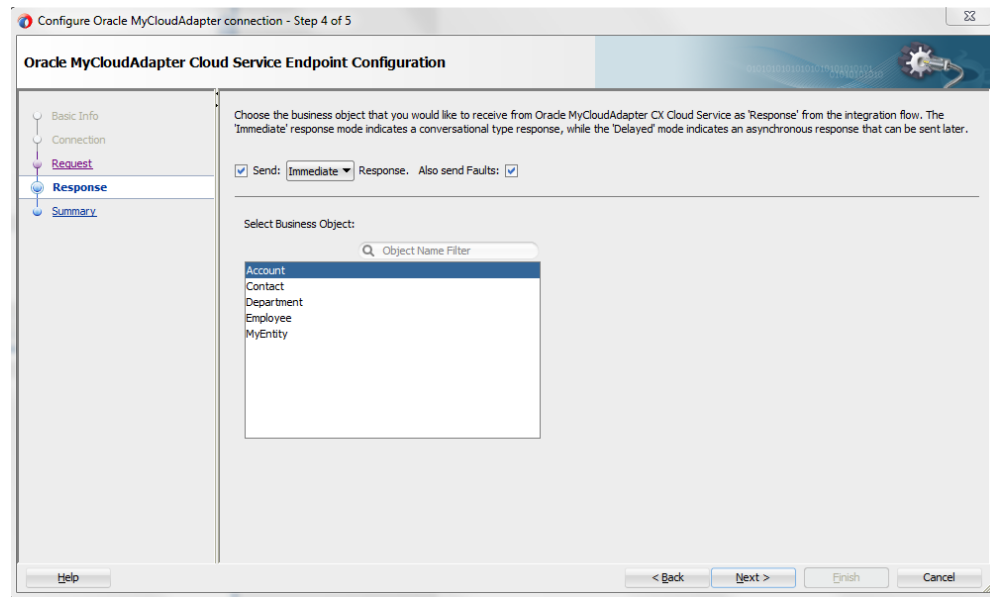
24. Select the business object you would like to receive in a request to this integration flow.



25. Click **Next**.

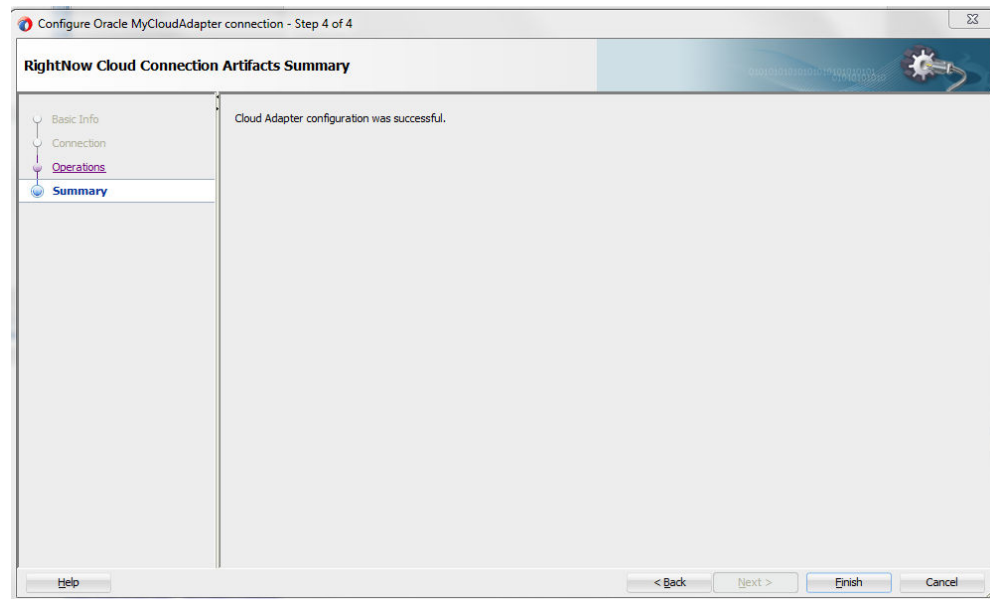
The Response page of the wizard appears.

26. Select the business object to which you would like to send a response in this integration flow.



27. Click Next.

The Summary page of the wizard appears.

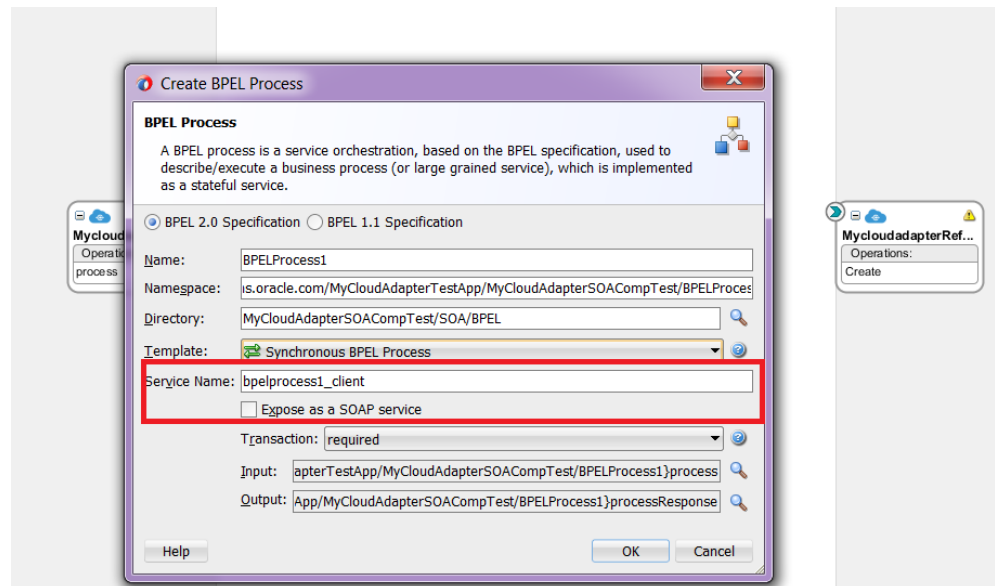


28. Click Finish to generate artifacts and references for the adapter.

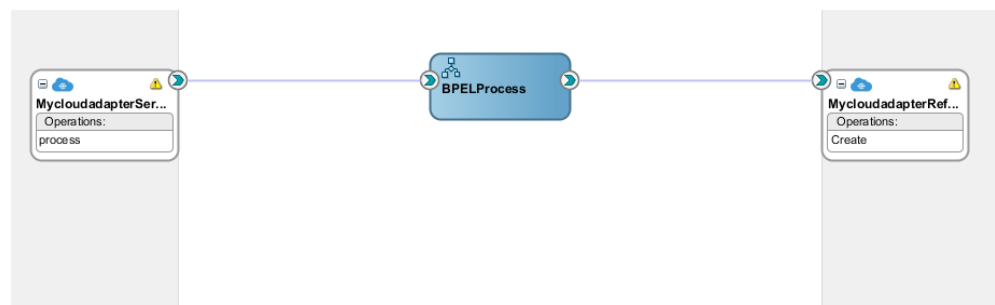
Runtime artifacts such as the Cloud Application Configuration file (.jca), Integration WSDL file, Endpoint WSDL file, and corresponding schemas are generated.

29. Create a synchronous BPEL process to consume the inbound MyCloudAdapterService and reply back with an outbound response from MyCloudApplication.

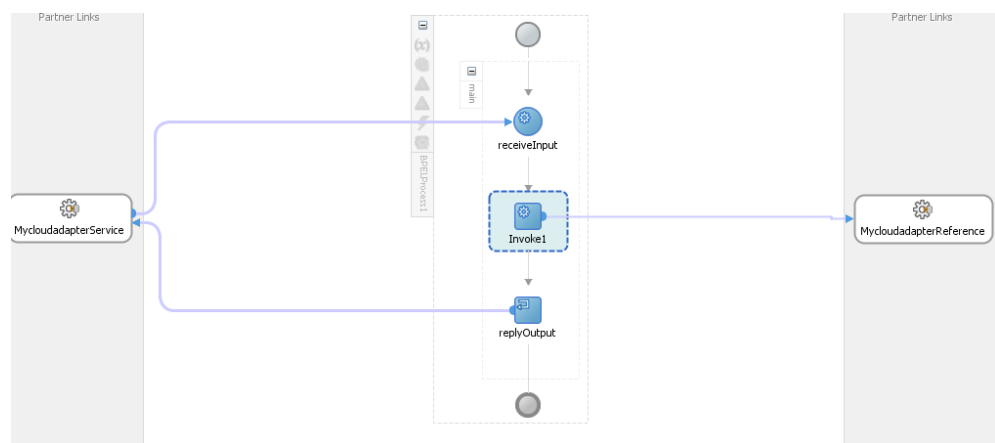
30. Make sure to deselect the **Expose as a SOAP Service box.**



31. Wire the inbound (exposed service) and outbound (external reference) adapters to the BPEL process.



32. Double click the BPEL process component to open it.
33. After the Receive input activity, drag and drop an Invoke activity from the Webservice section of the component palette.
34. Wire the Invoke activity to the outbound adapter.



35. Edit the Invoke activity and create input and output variables for the reference service.

Edit Invoke

Headers Documentation Skip Condition Targets Sources

General Correlations Properties Assertions Annotations

Name:

Conversation ID:

Detail Label:

☐ Invoke as Detail

Interaction Type: Partner Link ▼

Partner Link:

Port Type: MycloudadapterReferencePortType ▼

Operation: Create ▼

Input Output

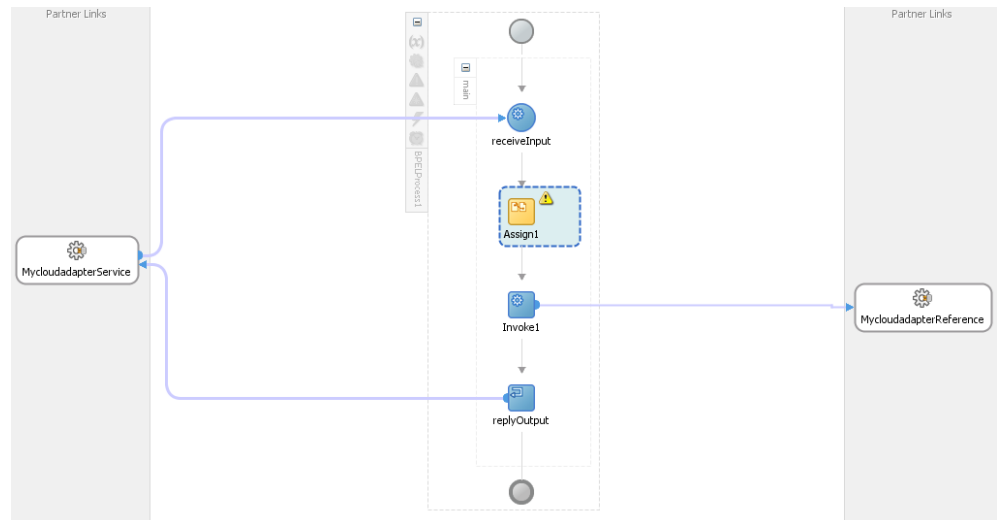
☐ Arguments Mapping ☒ Output Variable

Output:

Help Apply OK Cancel

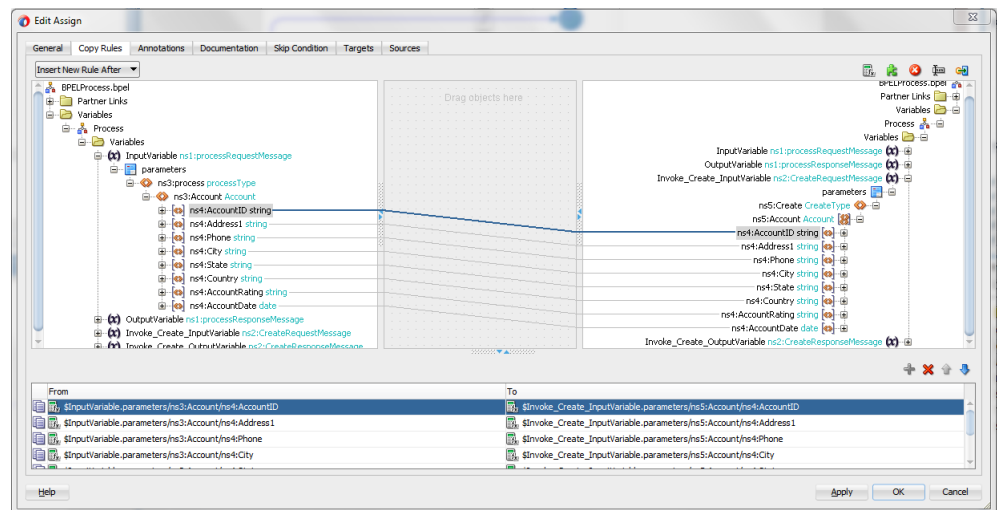
36. Click **OK**.

37. To map Request values, add an Assign activity above the Invoke activity to transform the values from source to destination.



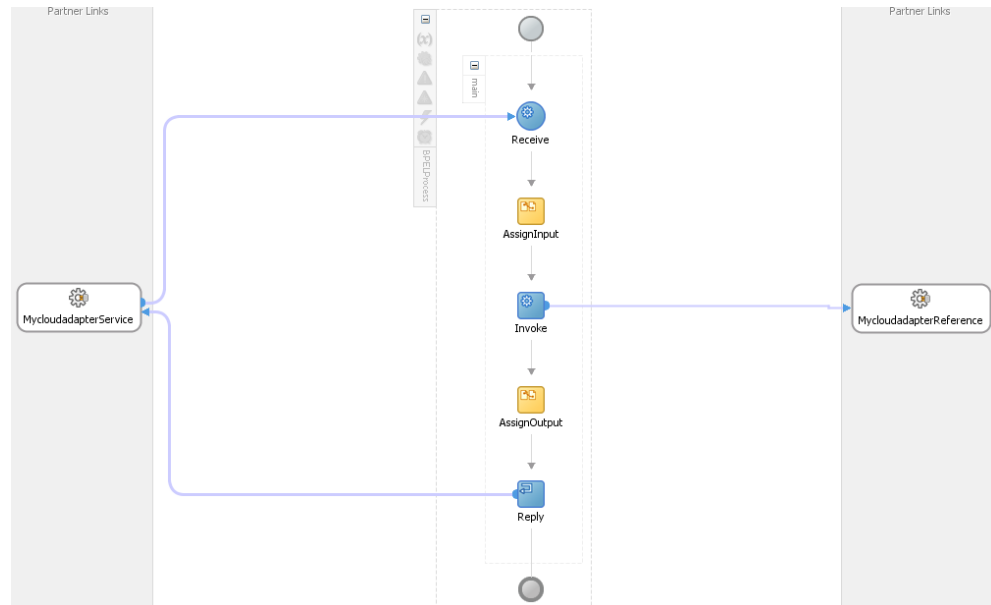
38. Double click the Assign activity to open it.

39. Map the Account ID value from source to destination.

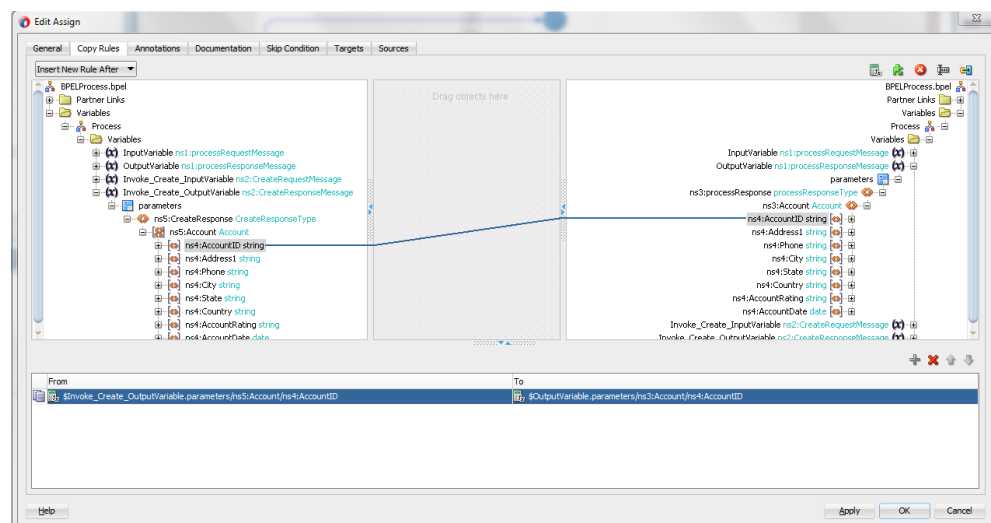


40. Click OK.

41. To map Response values, drag and drop another Assign activity after the Invoke activity.



42. Map the Account ID value from source to destination.



43. Save all modified files and deploy to the WebLogic SOA server.

44. To test the inbound adapter, use one of these URL patterns with any web service client:

For SOA:

`https://hostname:port/integration/flowsvc/adapter/partitionName/compositeName/serviceName/version?wsdl`

For example:

`https://hostname:port/integration/flowsvc/mycloudadapter/default/TestComposite/TestService/v1.0/?wsdl`

For Service Bus:

`https://hostname:port/integration/flowsvc/adapter/applicationName/proxyName?wsdl`

For example:

`https://hostname:port/integration/flowsvc/mycloudadapter/TestApp/TestService/?wsdl`

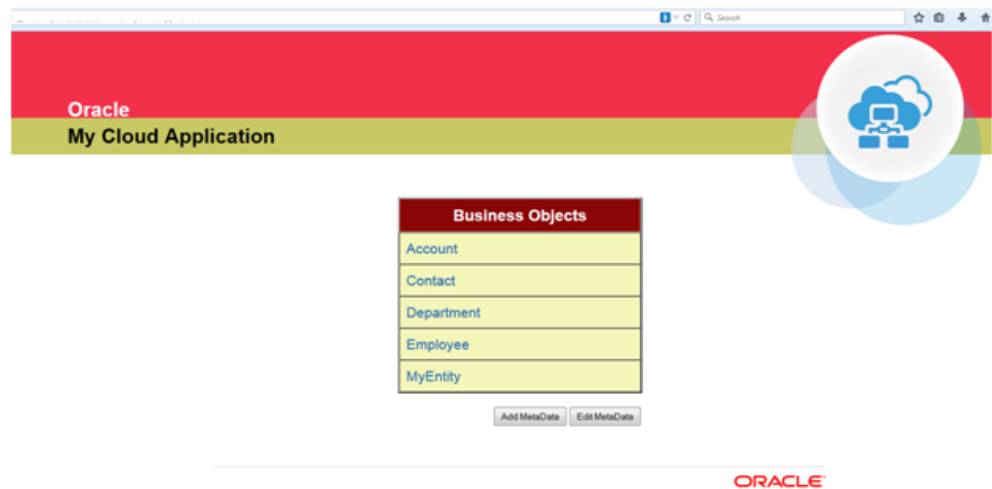
Next, see [Verifying the Result in MyCloudApplication](#).

Verifying the Result in MyCloudApplication

After you use MyCloudAdapter to change business objects or metadata in MyCloudApplication, you can look in MyCloudApplication to see the changes.

1. Go to the MyCloudApplication user interface:

`http://hostname:port/MyCloudApplication/`



2. Click the **Account** Business Object to view the newly created account.

To add or edit metadata, such as creating a new business object or editing existing business object fields, use the **Add MetaData** and **Edit MetaData** buttons.

