

Oracle® Cloud

Using the ArcGIS (ESRI) Adapter with Oracle Integration 3



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Preface

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

**Note:**

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

Topics:

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

Audience

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

Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at <https://www.oracle.com/corporate/accessibility/>.

Access to Oracle Support

Oracle customers that have purchased support have access to electronic support through My Oracle Support. For information, visit <https://support.oracle.com/portal/> or visit [Oracle Accessibility Learning and Support](#) if you are hearing impaired.

Diversity and Inclusion

Oracle is fully committed to diversity and inclusion. Oracle respects and values having a diverse workforce that increases thought leadership and innovation. As part of our initiative to build a more inclusive culture that positively impacts our employees, customers, and partners, we are working to remove insensitive terms from our products and documentation. We are also mindful of the necessity to maintain compatibility with our customers' existing technologies and

the need to ensure continuity of service as Oracle's offerings and industry standards evolve. Because of these technical constraints, our effort to remove insensitive terms is ongoing and will take time and external cooperation.

Related Resources

See these Oracle resources:

- Oracle Cloud at <http://cloud.oracle.com>
- *Using Integrations in Oracle Integration 3*
- *Using the Oracle Mapper with Oracle Integration 3*
- Oracle Integration documentation on the Oracle Help Center.

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.
monospace	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

1

Understand the ArcGIS (ESRI) Adapter

Review the following topics to learn about the ArcGIS (ESRI) 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:

- [ArcGIS \(ESRI\) Adapter Capabilities](#)
- [ArcGIS \(ESRI\) Adapter Restrictions](#)
- [What Application Version Is Supported?](#)
- [Workflow to Create and Add an ArcGIS \(ESRI\) Adapter Connection to an Integration](#)

ArcGIS (ESRI) Adapter Capabilities

The ArcGIS (ESRI) Adapter (short for Arc Geographical Information System) enables you to integrate an ArcGIS Enterprise application that exposes data by ArcGIS services with Oracle Integration. The ArcGIS (ESRI) Adapter enables you to integrate on-premises applications, which expose ArcGIS REST APIs, with Oracle Integration using the connectivity agent. You can configure the ArcGIS (ESRI) Adapter as an invoke connection in an integration in Oracle Integration.

The ArcGIS (ESRI) Adapter provides the following capabilities:

- Supports CRUD operations (create, update, delete, and query) on the feature service module.
- Supports the ArcGIS Generate Token Flow security policy.
- Facilitates access to the ArcGIS Enterprise application through the connectivity agent.

The ArcGIS (ESRI) Adapter is one of many predefined adapters included with Oracle Integration. See the Adapters page in the Oracle Help Center.

ArcGIS (ESRI) Adapter Restrictions

Note the following ArcGIS (ESRI) Adapter restrictions.

- The ArcGIS (ESRI) Adapter does not support geometry types such as multipoint geometry, polyline geometry, and polygon geometry in geographic information.
- The ArcGIS (ESRI) Adapter does not support the public gateway as an access type.

Note:

There are overall service limits for Oracle Integration. A service limit is the quota or allowance set on a resource. See [Service Limits](#).

What Application Version Is Supported?

For information about which application version is supported by this adapter, see the [Connectivity Certification Matrix](#).

Workflow to Create and Add an ArcGIS (ESRI) Adapter Connection to an Integration

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

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

Step	Description	More Information
1	Access Oracle Integration.	Go to <code>https://instance_URL/ic/home</code>
2	Create the adapter connections for the applications you want to integrate. The connections can be reused in multiple integrations and are typically created by the administrator.	Create an ArcGIS (ESRI) Adapter Connection
3	Create the integration. When you do this, you add trigger (source) and invoke (target) connections to the integration.	Understand Integration Creation and Best Practices in <i>Using Integrations in Oracle Integration 3</i> and Add the ArcGIS (ESRI) Adapter Connection to an Integration
4	Map data between the trigger connection data structure and the invoke connection data structure.	Map Data in <i>Using Integrations in Oracle Integration 3</i>
5	(Optional) Create lookups that map the different values used by those applications to identify the same type of object (such as gender codes or country codes).	Manage Lookups in <i>Using Integrations in Oracle Integration 3</i>
6	Activate the integration.	Activate an Integration in <i>Using Integrations in Oracle Integration 3</i>
7	Monitor the integration on the dashboard.	Monitor Integrations During Runtime in <i>Using Integrations in Oracle Integration 3</i>
8	Track payload fields in messages during runtime.	Assign Business Identifiers for Tracking Fields in Messages and Track Integration Instances in <i>Using Integrations in Oracle Integration 3</i>
9	Manage errors at the integration level, connection level, or specific integration instance level.	Manage Errors in <i>Using Integrations in Oracle Integration 3</i>

2

Create an ArcGIS (ESRI) 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 a Certificate to Connect with External Services](#)

Prerequisites for Creating a Connection

You must satisfy the following prerequisites to create a connection with the ArcGIS (ESRI) Adapter:

- Know the ArcGIS base URL.
For example:

```
https://host:port/webadaptername
```

If the user has configured the web adapter, the web adapter name can be used. The user can also provide the web adapter name as `arcgis`.

- Understand the ArcGIS Generate Token Flow.
If you are using the ArcGIS Generate Token Flow security policy, you must have the ArcGIS Enterprise portal credentials or ArcGIS Server credentials to complete the necessary fields on the Connections page.
- Know the Access Token URI.
The generate token operation creates an access token in exchange for user credentials, allowing clients to access secured ArcGIS Server services. This request must be made over HTTPS using the POST method, with user credentials included in the body of the POST request. See [Generate token flow](#).

Create a Connection

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

To create a connection in Oracle Integration:

1. In the navigation pane, click **Design**, then **Connections**.
2. Click **Create**.

 **Note:**

You can also create a connection in the integration canvas. See Define Inbound Triggers and Outbound Invokes.

- In the Create connection panel, select the adapter to use for this connection. To find the adapter, scroll through the list, or enter a partial or full name in the **Search** field.
- Enter the information that describes this connection.

Element	Description
Name	Enter a meaningful name to help others find your connection when they begin to create their own integrations.
Identifier	Automatically displays the name in capital letters that you entered in the Name field. If you modify the identifier name, don't include blank spaces (for example, SALES OPPORTUNITY).
Role	<p>Select the role (direction) in which to use this connection (trigger, invoke, or both). Only the roles supported by the adapter are displayed for selection. When you select a role, only the connection properties and security policies appropriate to that role are displayed on the Connections page. If you select an adapter that supports both invoke and trigger, but select only one of those roles, you'll get an error when you try to drag the adapter into the section you didn't select.</p> <p>For example, assume you configure a connection for the Oracle Service Cloud (RightNow) Adapter as only an invoke. Dragging the adapter to a trigger section in the integration produces an error.</p>
Keywords	Enter optional keywords (tags). You can search on the connection keywords on the Connections page.
Description	Enter an optional description of the connection.
Share with other projects	<p>Note: This field only appears if you are creating a connection in a project.</p> <p>Select to make this connection publicly available in other projects. Connection sharing eliminates the need to create and maintain separate connections in different projects.</p> <p>When you configure an adapter connection in a different project, the Use a shared connection field is displayed at the top of the Connections page. If the connection you are configuring matches the same type and role as the publicly available connection, you can select that connection to reference (inherit) its resources. See Add and Share a Connection Across a Project.</p>

- Click **Create**.

Your connection is created. You're now ready to configure the connection properties, security policies, and (for some connections) access type.

Configure Connection Properties

Enter connection information so your application can process requests.

1. Go to the **Properties** section.
2. In the **ArcGIS Base URL** field, enter an ArcGIS base URL. See [Prerequisites for Creating a Connection](#).

Configure Connection Security

Configure security for your ArcGIS (ESRI) Adapter connection.

1. Go to the **Security** section.

The **Security Policy** field shows **ArcGIS Generate Token Flow**. This value cannot be changed.

2. Enter your login credentials:

Element	Description
Access Token URI	Enter the authorization server that generates the access token. See Prerequisites for Creating a Connection .
Username	Enter the case-sensitive user name of the user.
Password	Enter the password of the user.

Configure the Endpoint Access Type

Configure access to your endpoint. Depending on the capabilities of the adapter you are configuring, options may appear to configure access to the public internet, to a private endpoint, or to an on-premises service hosted behind a fire wall.

Select the Endpoint Access Type

Select the option for accessing your endpoint.

Option	This Option Appears If Your Adapter Supports ...
Public gateway	Connections to endpoints using the public internet.

Option	This Option Appears If Your Adapter Supports ...
Connectivity agent	<p>Connections to on-premises endpoints through the connectivity agent.</p> <ol style="list-style-type: none"> 1. Click Associate agent group. The Associate agent group panel appears. 2. Select the agent group, and click Use. <p>To configure an agent group, you must download and install the on-premises connectivity agent. See Download and Run the Connectivity Agent Installer and About Creating Hybrid Integrations Using Oracle Integration in <i>Using Integrations in Oracle Integration 3</i>.</p>

Test the Connection

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

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


If Your Connection...	Then...
Doesn't use a WSDL	The test starts automatically and validates the inputs you provided for the connection.
Uses a WSDL	<p>A dialog prompts you to select the type of connection testing to perform:</p> <ul style="list-style-type: none"> • Validate and Test: Performs a full validation of the WSDL, including processing of the imported schemas and WSDLs. Complete validation can take several minutes depending on the number of imported schemas and WSDLs. No requests are sent to the operations exposed in the WSDL. • Test: Connects to the WSDL URL and performs a syntax check on the WSDL. No requests are sent to the operations exposed in the WSDL.

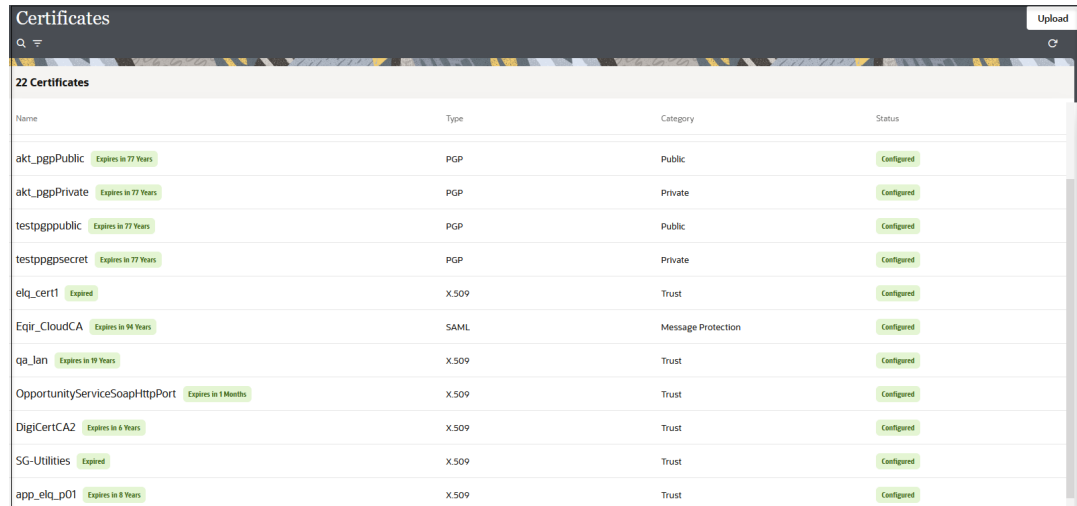
2. Wait for a message about the results of the connection test.
 - If the test was successful, then the connection is configured properly.
 - If the test failed, then edit the configuration details you entered. Check for typos and verify URLs and credentials. Continue to test until the connection is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

Upload a Certificate to Connect with External Services

Certificates allow Oracle Integration to connect with external services. If the external service/endpoint needs a specific certificate, request the certificate and then import it into Oracle Integration.

If you make an SSL connection in which the root certificate does not exist in Oracle Integration, an exception error 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.

1. Sign in to Oracle Integration.
2. In the navigation pane, click **Settings**, then **Certificates**.
All certificates currently uploaded to the trust store are displayed on the Certificates page.
3. Click **Filter**  to filter by name, certificate expiration date, status, type, category, and installation method (user-installed or system-installed). Certificates installed by the system cannot be deleted.



Name	Type	Category	Status
akt_pgppublic <small>Expires in 77 Years</small>	PGP	Public	Configured
akt_pgpprivate <small>Expires in 77 Years</small>	PGP	Private	Configured
testpgppublic <small>Expires in 77 Years</small>	PGP	Public	Configured
testpgppsecret <small>Expires in 77 Years</small>	PGP	Private	Configured
elq_cert1 <small>Expired</small>	X.509	Trust	Configured
Eqir_CloudCA <small>Expires in 94 Years</small>	SAML	Message Protection	Configured
qa_lan <small>Expires in 99 Years</small>	X.509	Trust	Configured
OpportunityServiceSoapHttpPort <small>Expires in 1 Months</small>	X.509	Trust	Configured
DigiCertCA2 <small>Expires in 6 Years</small>	X.509	Trust	Configured
SG-Utilities <small>Expired</small>	X.509	Trust	Configured
app_elq_p01 <small>Expires in 8 Years</small>	X.509	Trust	Configured

4. Click **Upload** at the top of the page.
The Upload certificate panel is displayed.
5. Enter an alias name and optional description.
6. In the **Type** field, select the certificate type. Each certificate type enables Oracle Integration to connect with external services.
 - [Digital Signature](#)
 - [X.509 \(SSL transport\)](#)
 - [SAML \(Authentication & Authorization\)](#)
 - [PGP \(Encryption & Decryption\)](#)
 - [Signing key](#)

Digital Signature

The digital signature security type is typically used with adapters created with the Rapid Adapter Builder. See [Learn About the Rapid Adapter Builder in Oracle Integration in *Using the Rapid Adapter Builder with Oracle Integration 3*](#).

1. Click **Browse** to select the digital certificate. The certificate must be an X509Certificate. This certificate provides inbound RSA signature validation. See [RSA Signature Validation in *Using the Rapid Adapter Builder with Oracle Integration 3*](#).
2. Click **Upload**.

X.509 (SSL transport)

1. Select a certificate category.
 - a. **Trust:** Use this option to upload a trust certificate.

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

 **Note:**

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

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

SAML (Authentication & Authorization)

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

PGP (Encryption & Decryption)

1. Select a certificate category. Pretty Good Privacy (PGP) provides cryptographic privacy and authentication for communication. PGP is used for signing, encrypting, and decrypting files. You can select the private key to use for encryption or decryption when configuring the stage file action.
 - a. **Private**: Uses a private key of the target location to decrypt the file.
 - i. Click **Browse**, then select the PGP file to upload.
 - ii. Enter the PGP private key password.
 - b. **Public**: Uses a public key of the target location to encrypt the file.
 - i. Click **Browse**, then select the PGP file to upload.
 - ii. In the **ASCII-Armor Encryption Format** field, select **Yes** or **No**.
 - **Yes** shows the format of the encrypted message in ASCII armor. ASCII armor is a binary-to-textual encoding converter. ASCII armor formats encrypted messaging in ASCII. This enables messages to be sent in a standard messaging format. This selection impacts the visibility of message content.
 - **No** causes the message to be sent in binary format.
 - iii. From the **Cipher Algorithm** list, select the algorithm to use. Symmetric-key algorithms for cryptography use the same cryptographic keys for both encryption of plain text and decryption of cipher text. The following supported cipher algorithms are FIPS-compliant:
 - AES128
 - AES192

- AES256
 - TDES
- c. Click **Upload**.

Signing key

A signing key is a secret key used to establish trust between applications. Signing keys are used to sign ID tokens, access tokens, SAML assertions, and more. Using a private signing key, the token is digitally signed and the server verifies the authenticity of the token by using a public signing key. You must upload a signing key to use the OAuth Client Credentials using JWT Client Assertion and OAuth using JWT User Assertion security policies in REST Adapter invoke connections. Only PKCS1- and PKCS8-formatted files are supported.

1. Select **Public** or **Private**.
2. Click **Browse** to upload a key file.
If you selected **Private**, and the private key is encrypted, a field for entering the private signing key password is displayed after key upload is complete.
3. Enter the private signing key password. If the private signing key is not encrypted, you are not required to enter a password.
4. Click **Upload**.

3

Add the ArcGIS (ESRI) Adapter Connection to an Integration

When you drag the ArcGIS (ESRI) Adapter into the invoke area of an integration, the Adapter Endpoint Configuration Wizard is invoked. This wizard guides you through configuration of the ArcGIS (ESRI) Adapter endpoint properties.

The following sections describe the wizard pages that guide you through configuration of the ArcGIS (ESRI) Adapter as an invoke in an integration.

Topics:

- [Invoke Basic Info Page](#)
- [Invoke Configuration Page](#)
- [Summary Page](#)

Invoke Basic Info Page

Specify a name, description, and action type on the Basic Info page.

Element	Description
What do you want to call your endpoint?	<p>Provide a meaningful name so that others can understand the responsibilities of this connection. You can include English alphabetic characters, numbers, underscores, and hyphens in the name. You can't include the following characters:</p> <ul style="list-style-type: none">• No blank spaces (for example, My Inbound Connection)• No special characters (for example, #;83& or righ(t)now4) except underscores and hyphens• No multibyte characters
Select Module	Supports the Feature service module, which is selected by default.
Action	<p>Select the action name to filter.</p> <p>The feature service module supports the following actions:</p> <ul style="list-style-type: none">• Retrieve Feature Service Data• Add Features to a Layer• Update Features in a Layer• Delete Features in a Layer• Retrieve Layer Data• Retrieve Contingent Values• Retrieve Field Groups• Retrieve Single Feature• Query Data Elements• Query Contingent Values• Edit Features on a Layer• Retrieves Estimates of a Layer• Query Top Features of the Layer• Query Feature Service Layer

Invoke Configuration Page

Select the details on the Configuration page.

Element	Description
Service Folder Name	Select the folder name if the service is published inside any folder other than the <code>root</code> directory.
Service Name	Select the name of the service on which to perform the selected action.

Summary Page

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

Element	Description
Summary	<p>Displays a summary of the configuration values you defined on previous pages of the wizard.</p> <p>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.</p> <p>To return to a previous page to update any values, click the appropriate tab in the left panel or click Go back.</p> <p>To cancel your configuration details, click Cancel.</p>