Oracle® Cloud

Using the Oracle Cloud Infrastructure Streaming Service Adapter with Oracle Integration Generation 2

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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
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- Related Resources
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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 `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.

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

  http://cloud.oracle.com

* *Using Integrations in Oracle Integration Generation 2*

* *Using the Oracle Mapper with Oracle Integration Generation 2*

Conventions

The following text conventions are used in this document:

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

1
Understand the Oracle Cloud Infrastructure Streaming Service Adapter

Review the following conceptual topics to learn about the Oracle Cloud Infrastructure Streaming Service 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 Cloud Infrastructure Streaming Service Adapter Capabilities
- Oracle Cloud Infrastructure Streaming Service Adapter Restrictions
- What Application Version Is Supported?
- Workflow to Create and Add an Oracle Cloud Infrastructure Streaming Service Adapter Connection to an Integration

Oracle Cloud Infrastructure Streaming Service Adapter Capabilities

The Oracle Cloud Infrastructure Streaming Service Adapter enables you to create an integration in Oracle Integration that connects to the Oracle Cloud Infrastructure Streaming Service.

The Oracle Cloud Infrastructure Streaming Service provides a fully managed, scalable, and durable storage solution for using continuous, high-volume streams of data that you can consume and process in real time. You can use streaming for messaging, using high-volume data such as application logs, operational telemetry, web click-stream data, or other use cases in which data is produced and processed continually and sequentially in a publish-subscribe messaging model. See Streaming Service Overview.

The Oracle Cloud Infrastructure Streaming Service Adapter provides the following benefits:

- Establishes a connection to the Oracle Cloud Infrastructure Streaming Service to enable messages to be published and consumed.
- Consumes messages from a specific partition and produces messages to a specific partition.
- Supports the ability to consume records from the latest or from the beginning.
- Supports the ability to consume only a few records out of the record set.
- Supports specifying the offset from which to consume records. Along with the offset, a partition must be provided. This appears when you try to map incoming data (which contains offset, partition) to the outbound consume operation that also exposes the same variables.
- Supports headers.

- Supports trigger-based consumption of messages from Oracle Cloud Infrastructure Streaming Service based on the frequency specified.
- Supports the following message structures:
  - Avro schema
    This schema is applicable for the following scenarios:
    * Producing and consuming messages - Invoke connections (supported with both direct connectivity and the connectivity agent)
    * Consuming messages - Trigger connections (supported with the connectivity agent only)
  - Sample JSON
  - XML schema (XSD) and schema archive upload
  - Sample XML
- Supports the Security Layer (SASL) Plain over SSL security policy.
- Supports direct connectivity to an Oracle Cloud Infrastructure Streaming Service over SSL without use of the connectivity agent.
- Supports connectivity to an Oracle Cloud Infrastructure Streaming Service streaming service hosted on a private subnet.

The Oracle Cloud Infrastructure Streaming Service Adapter is one of many predefined adapters included with Oracle Integration. You can configure the Oracle Cloud Infrastructure Streaming Service Adapter as an invoke connection in an integration in Oracle Integration.

Oracle Cloud Infrastructure Streaming Service Adapter Restrictions

Note the following Oracle Cloud Infrastructure Streaming Service Adapter restrictions in Oracle Integration.

- SASL over SSL is the only security policy supported.
- Transactions are not supported (Oracle Cloud Infrastructure Streaming Service does not support transactions).
- Inbound polling works only with the connectivity agent.
- Consumption by offset (along with offset, partition) must be provided.
- When there are no messages to consume from the Oracle Cloud Infrastructure Streaming Service, the Oracle Cloud Infrastructure Streaming Service Adapter takes one minute to respond before returning with an empty message. This is the expected behavior.
- Only GZIP compression (the default) is supported. Other forms of compression are not supported.

> **Note:**
>
> There are overall service limits with 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.

See Connectivity Certification Matrix.

Workflow to Create and Add an Oracle Cloud Infrastructure Streaming Service 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 the adapter tasks and the overall integration tasks, and provides links to instructions for each step.

Step	Description	More Information
1	Access Oracle Integration.	Go to `https://instance_URL/ic/home/`
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 Oracle Cloud Infrastructure Streaming Service Adapter Connection
3	Create the integration. When you do this, you add trigger (source) and invoke (target) connections to the integration.	Create Integrations in *Using Integrations in Oracle Integration Generation 2* and Add the Oracle Cloud Infrastructure Streaming Service Adapter Connection to an Integration
4	Map data between the trigger connection data structure and the invoke connection data structure.	Map Data in *Using Integrations in Oracle Integration Generation 2*
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 *Using Integrations in Oracle Integration Generation 2*
6	Activate the integration.	Activate Integrations in *Using Integrations in Oracle Integration Generation 2*
7	Monitor the integration on the dashboard.	Monitor Integrations in *Using Integrations in Oracle Integration Generation 2*
8	Track payload fields in messages during runtime.	Assign Business Identifiers for Tracking Fields in Messages and Manage Business Identifiers for Tracking Fields in Messages in *Using Integrations in Oracle Integration Generation 2*
9	Manage errors at the integration level, connection level, or specific integration instance level.	Manage Errors in *Using Integrations in Oracle Integration Generation 2*

2

Create an Oracle Cloud Infrastructure Streaming Service Adapter Connection

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

Topics:

- Prerequisites for Creating a Connection
- Create a Connection

Prerequisites for Creating a Connection

You must satisfy the following prerequisites to create a connection with the Oracle Cloud Infrastructure Streaming Service Adapter.

This information is required when configuring the Oracle Cloud Infrastructure Streaming Service Adapter on the Connections page.

- Assign the Correct Permissions
- Know the Bootstrap Server Host
- Know the SASL Username and Password
- Know the Trust Store (Optional)

Assign the Correct Permissions

Assign the correct permissions to the Oracle Cloud Infrastructure Streaming Service group in the Oracle Cloud Interface Console. This group must contain the SASL user that you enter when creating a connection on the Connections page.

```
Allow group StreamUsers to manage streams in tenancy/compartment
```

```
Allow group StreamUsers to manage stream-pull in tenancy/compartment
```

```
Allow group StreamUsers to manage stream-push in tenancy/compartment
```

Policy details about letting users publish messages to and a specific stream and consume messages from streams are described in the Oracle Cloud Infrastructure documentation. See Common Policies and Details for the Streaming Service.

Know the Bootstrap Server Host Name and Port

Know the host and port of the bootstrap server to use to connect to a list of Oracle Cloud Infrastructure Streaming Services.

Know the SASL Username and Password

Know the SASL username and password for the Simple Authentication and Security Layer (SASL) over SSL security policy. The username is a combination of the tenancy name, stream user name, and stream pool OCID separated by forward slashes (/). For example:

```
xxxtenant/abcuser/yyystreampoolocid
```

1. Obtain the tenancy name in the Oracle Cloud Infrastructure Console.

    a. From the **Profile** icon in the upper right corner of the page, select **Tenancy**. The name is displayed in the title and the **Name** field.
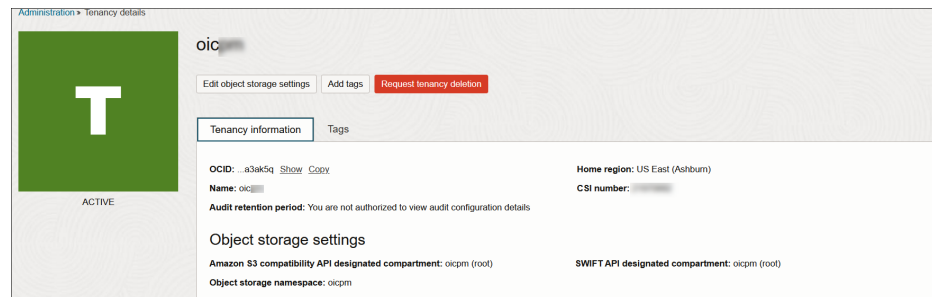
2. Know the stream user name. This is a user with authorization to publish or consume messages from the stream.

3. Obtain the stream pool OCID by navigating to the streaming instance you are using in the left navigation pane of the Oracle Cloud Infrastructure Console.

    a. Select **Analytics & AI** > **Streaming** > **Stream Pools** > **Default Pool** (or the specific pool name you are using).

    b. Copy the **OCID** value.

4. Generate the SASL password to access the Oracle Cloud Infrastructure Streaming Service. This is an authorization token generated for the streams user. The password can be generated from the streaming instance.

    a. Select **Identity & Security**, then select **Users**.

    b. In the **Name** column, click the specific user and select **Auth Tokens**.

    c. Click **Generate Token**.

    d. Use this token as the password.

Know the Trust Store (Optional)

Optionally know the trust store. You generate the trust store from the certificate given for the Oracle Cloud Infrastructure Streaming Service. There are two methods:

- Create the certificate from the command prompt.

- Obtain the certificate from the browser. The steps vary from browser to browser.

The following examples are provided:

1. From the command prompt:

   a. Enter the following command:

   ```
   echo -n | openssl s_client -connect HOST:PORT | sed -ne  '/-BEGIN
   CERTIFICATE-/,/-END CERTIFICATE-/p' > cert_file_name
   keytool -keystore jks_file_name -alias alias_name -import -file
   cert_file_name
   ```

   For example:

   ```
   echo -n | openssl s_client -connect
   streaming.region-1.oci.oraclecloud.com:9092 | sed -ne  '/-BEGIN
   CERTIFICATE-/,/-END CERTIFICATE-/p' > ociStreaming.cert
   keytool -keystore Streaming_truststore.jks -alias OSSStream -import -
   file ociStreaming.cert
   ```

   Where `region` is your instance's region.

   This creates the `jks` file that you upload on the Connections page.

2. From the browser:

   a. Log in to the Oracle Cloud Infrastructure Console:

   b. From the navigation pane, select **Analytics & AI**, and then **Streaming**.

   c. In the **Name** column, click the stream instance.

   d. Copy the URL in the **Messages Endpoint** field.

   You are now ready to export the certificate from your browser of choice. Two examples are provided below:

   - Export the certificate from Chrome:

   - Export the certificate from Firefox:

   > **Note:**
   >
   > Only the *root* certificate should be exported, and *not* the chain or intermediate certificate.

3. Export the certificate from Chrome:

   a. Enter the messages endpoint URL in the browser, and press **Enter**.

   b. Click the **lock** icon in the URL.

{"code":"NotFound","message":"Not Found"}
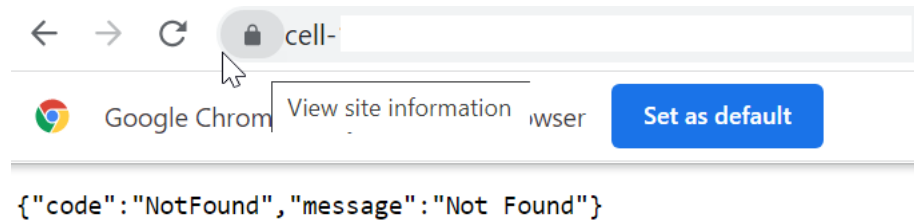
    c. Select **Connection is secure**, then **Certificate is valid**.

    d. Click the **Details** tab.

    e. Click **Copy to File**.
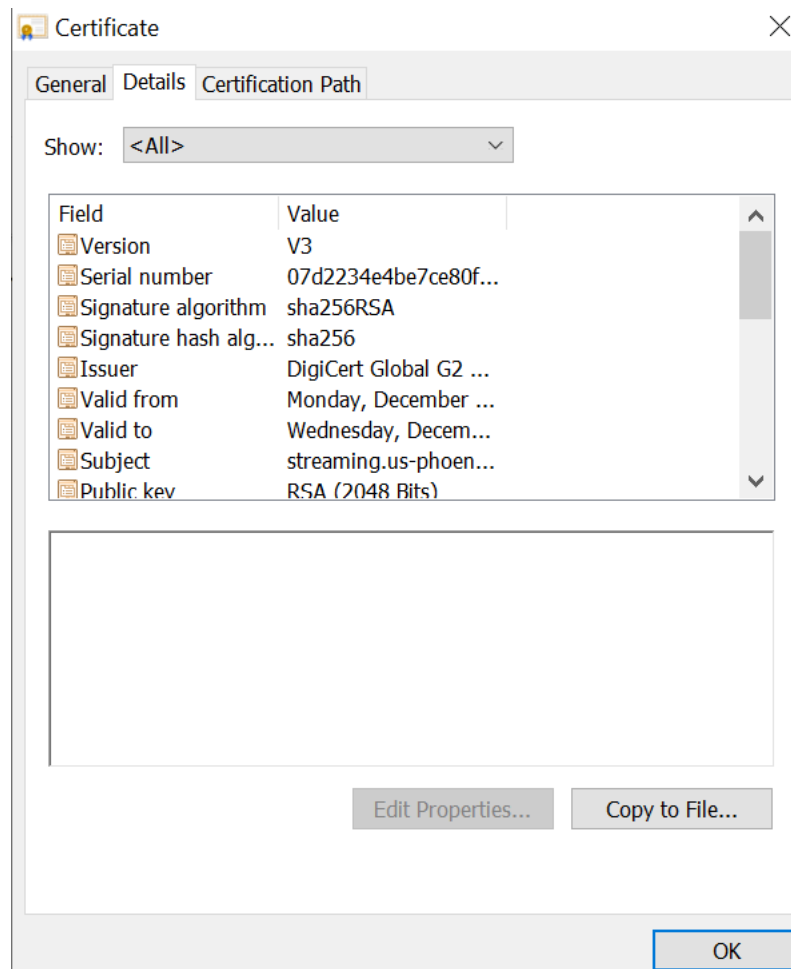
    f. Follow the steps in the Certificate Export Wizard to export the root certificate.

4. Export the certificate from Mozilla Firefox:

    a. Enter the messages endpoint URL in the browser, and press **Enter**.

    b. Click the **lock** icon in the URL.

c. Select **Connection Secure** > **More Information**.

d. Click **View Certificate**.

e. Select the top level root certificate, then scroll to the **Miscellaneous** section to download.

f. Download the root certificate.

g. Use the certificate to generate the trust store using the `keytool` utility found in the `/oracle/jdk/bin` directory of your host. You must have Oracle Java installed on your host. You *cannot* use OpenJDK.
For example, you can generate the trust store with the following command:

```
keytool -keystore oss_server_truststore2.jks -alias CARoot1 -import -file D:\temp\DigiCertGlobalRootCA1.crt
```

Where:

- *filename*.jks is any name you want to use.

- CARoot1 is anything you want to use.

- *filename*.crt is the file you exported earlier from the security link in your browser.

This creates the jks file that you upload on the Connections page.

Create a Connection

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

To create a connection in Oracle Integration:

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

2. Click **Create**.

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

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

   🔍

   Search.

4. In the Create Connection dialog, enter the information that describes this connection.

   a. Enter a meaningful name to help others find your connection when they begin to create their own integrations. The name you enter is automatically added in capital letters to the **Identifier** field. If you modify the identifier name, don't include blank spaces (for example, SALES OPPORTUNITY).

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

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

   d. Enter an optional description of the connection.

5. Click **Create**.

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

Configure Connection Properties

Enter connection information so your application can process requests.

1. Go to the **Connection Properties** section.

2. In the **Bootstrap Servers** field, specify the host and port to use to connect to the Oracle Cloud Infrastructure Streaming Service. For example:

   ```
   streaming.region_location.oci.oraclecloud.com:port
   ```

   Where the *region_location* is found in the URL when you log in to the Oracle Cloud Infrastructure Console and *port* is the port value (for example, `9092`).

   > **✎ Note:**
   >
   > Do *not* include `https://` in the **Bootstrap Servers** field.

Configure Connection Security

Configure security for your Oracle Cloud Infrastructure Streaming Service Adapter connection.

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

2. Enter the following credentials:

Element	Description
SASL Username	Enter the user name to access the Oracle Cloud Infrastructure Streaming Service. This is a combination of the tenancy name, stream user name, and stream pool OCID separated by forward slashes (/). For example: `xxxtenant/abcuser/yyystreampoolocid` See Prerequisites for Creating a Connection.
SASL Password	Enter the password. See Prerequisites for Creating a Connection.
TrustStore (Optional)	Upload the trust store you generated. This field is optional. See Prerequisites for Creating a Connection.
TrustStore Password (Optional)	Enter the trust store password. This field is optional.

Configure an Agent Group

Configure an agent group for accessing the service hosted on your premises behind the fire wall.

> **✎ Note:**
>
> A direct connection from Oracle Integration to the private endpoint Oracle Cloud Infrastructure Streaming Service does not work. You must install the connectivity agent on the same network (a virtual machine (VM) created on the same virtual cloud network (VCN) and subnet).

1. Click **Configure Agents**.

   The Select an Agent Group page appears.

2. Click the name of the agent group.

3. Click **Use**.

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 Connectivity Agents and Integrations Between On-Premises Applications and Oracle Integration in *Using Integrations in Oracle Integration Generation 2*.

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	A dialog prompts you to select the type of connection testing to perform: • **Validate and Test**: Performs a full validation of the WSDL, including processing of the imported schemas and WSDLs. Complete validation can take several minutes depending on the number of imported schemas and WSDLs. No requests are sent to the operations exposed in the WSDL. • **Test**: Connects to the WSDL URL and performs a syntax check on the WSDL. No requests are sent to the operations exposed in the WSDL.

2. Wait for a message about the results of the connection test.

   • If the test was successful, then the connection is configured properly.

- If the test failed, then edit the configuration details you entered. Check for typos and verify URLs and credentials. Continue to test until the connection is successful.

3. When complete, click **Save**.

3

Add the Oracle Cloud Infrastructure Streaming Service Adapter Connection to an Integration

When you drag the Oracle Cloud Infrastructure Streaming Service Adapter into the trigger or invoke area of an integration, the Adapter Endpoint Configuration Wizard is invoked. This wizard guides you through configuration of the Oracle Cloud Infrastructure Streaming Service Adapter endpoint properties.

The following sections describe the wizard pages that guide you through configuration of the Oracle Cloud Infrastructure Streaming Service Adapter as a trigger or an invoke in an integration.

Topics:

- Basic Info Page
- Operations Page
- Stream & Partition Page
- Message Structure Page
- Headers Page
- Summary Page

Basic Info Page

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

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

Operations Page

Select the operation to perform.

Element	Description
What operation do you want to perform on the OCI Stream	• **Publish messages to Stream** • **Consume messages from Stream** • **Consume messages from Stream by specifying offset**

Stream & Partition Page

Select the stream and partition on which to perform the stream operation and optionally specify the message and header structure.

*   Configure the Oracle Cloud Infrastructure Streaming Service Adapter as a Trigger (Inbound)

*   Configure the Oracle Cloud Infrastructure Streaming Service Adapter as an Invoke (Outbound)

Configure the Oracle Cloud Infrastructure Streaming Service Adapter as a Trigger (Inbound)

Element	Description
Select a Stream	Select the stream in which to perform the operation. You can also enter the beginning letters of the topic to filter the display of streams. A stream is a category in which applications can add, process, and reprocess messages. You subscribe to messages in streams.
Specify the Partition	Specify the partition to which to push the selected stream. Oracle Cloud Infrastructure Streaming Service streams are divided into partitions that enable you to split data across multiple brokers. If you do not select a specific partition and use the **Default** selection, Oracle Cloud Infrastructure Streaming Service considers all available partitions and decides which one to use.
Consumer Group	Specify the consumer group to attach. Consumers join a group by using the same group ID. The Oracle Cloud Infrastructure Streaming Service assigns the partitions of a stream to the consumers in a group. You can use a consumer group as a load balancer by specifying a single consumer group to prevent message duplication. You can also specify multiple consumer groups separated by commas to ensure that all groups receive the same messages.
Polling Frequency (sec)	Specify the frequency to poll for records in seconds.
Maximum Number of Records to be fetched	Specify the maximum number of records to fetch. **Note**: This field specifies the upper boundary of records to fetch. It does not guarantee the specified amount of records to retrieve from the stream in a single run. Remaining messages are fetched in subsequent runs.

Element	Description
Do you want to specify the message structure?	Select **Yes** if you want to define the message structure to use on the Message Structure page of the wizard. Otherwise, select **No**.
Do you want to specify the headers for the message?	Select **Yes** if you want to define the message headers to use on the Headers page of the wizard. Otherwise, select **No**.
Review and update advanced configurations	Click **Edit** to open the Advanced Options section to select the message type (string or bytes). This action defines the serializers to use for the message. This selection is applicable for the message key and value.

Configure the Oracle Cloud Infrastructure Streaming Service Adapter as an Invoke (Outbound)

Element	Description
Select a Stream	Select the stream in which to perform the operation. You can also enter the beginning letters of the topic to filter the display of streams. A stream is a category in which applications can add, process, and reprocess messages. You subscribe to messages in streams.
Specify the Partition	Specify the partition to which to push the selected stream. Oracle Cloud Infrastructure Streaming Service streams are divided into partitions that enable you to split data across multiple brokers. If you do not select a specific partition and use the **Default** selection, Oracle Cloud Infrastructure Streaming Service considers all available partitions and decides which one to use. **Note**: This field is not displayed if you selected **Consume messages from Stream by specifying offset** on the Operations page.
Consumer Group (This field is only displayed if you select **Consume messages from Stream**.)	Specify the consumer group to attach. Consumers join a group by using the same group ID. The Oracle Cloud Infrastructure Streaming Service assigns the partitions of a stream to the consumers in a group. You can use a consumer group as a load balancer by specifying a single consumer group to prevent message duplication. You can also specify multiple consumer groups separated by commas to ensure that all groups receive the same messages.
Specify the option for consuming messages (This field is only displayed if you select **Consume messages from Stream**.)	• **Read latest**: Reads the latest messages starting at the time at which the integration was activated. • **Read from beginning**: Select to read messages from the beginning. As an example, if you select to read from the beginning and have activated the integration, the first scheduled run picks up 20 records and the next scheduled run picks up the next 20 records. If the integration is then deactivated, edited, and reactivated, the next 20 records are picked up.
Do you want to specify the message structure?	Select **Yes** if you want to define the message structure to use on the Message Structure page of the wizard. Otherwise, select **No**.
Do you want to specify the headers for the message?	Select **Yes** if you want to define the message headers to use on the Headers page of the wizard. Otherwise, select **No**.
Review and update advanced configurations	Click **Edit** to open the Advanced Options section to select the message type (string or bytes). This action defines the serializers to use for the message. This selection is applicable for the message key and value.

Message Structure Page

Select the message structure to use. This page is displayed if you selected **Yes** for the **Do you want to specify the message structure?** field on the Stream & Partition page.

Element	Description
How would you like to specify the message structure?	• **Avro Schema document** • **Sample JSON document** • **XML Schema (XSD) document** • **Sample XML document**
Select File	Click **Browse** to select the file. Once selected, the file name is displayed in the **File Name** field.
Element	Select the element if you specified an XSD file.

Headers Page

Define the message headers structure to attach to the message. This page is displayed if you selected **Yes** for the **Do you want to specify the headers for the message?** field on the Stream & Partition page.

Element	Description
Specify Message Headers	Specify headers and optional descriptions.

Summary Page

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

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

4

Troubleshoot the Oracle Cloud Infrastructure Streaming Service Adapter

Review the following topics to learn about troubleshooting issues with the Oracle Cloud Infrastructure Streaming Service Adapter.

Topics:

- Troubleshoot Oracle Cloud Infrastructure Streaming Service Adapter Errors
- Existing Connections are Suddenly Failing with an "SSL handshake failed" Error

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

Troubleshoot Oracle Cloud Infrastructure Streaming Service Adapter Errors

Note the following errors and troubleshooting actions when using the Oracle Cloud Infrastructure Streaming Service Adapter.

Issue	Error	Error Occurrence Scenario	Verification Steps
1	Testing the connection fails with the following exception: `java.util.concurrent.TimeoutException`	Wrong port of bootstrap server.	Verify that the bootstrap server port provided on the Connections page is correct.
2	Testing the connection fails with the following exception: `OSS-004 : Unable to test connection. Verify Bootstrap Server and Trust store details.`	Wrong host name of bootstrap server.	Verify that the hostname of the bootstrap server provided on the Connections page is correct.

Issue	Error	Error Occurrence Scenario	Verification Steps
3	Testing the connection fails with the following exception: `OSS-003 : Unable to test connection. Verify Username and Password.`	1. Wrong tenant ID. 2. Wrong user name. 3. Wrong stream pool ID. 4. Wrong password (authentication token).	Verify that the inputs entered on the Connections page are correct.
4	Testing the connection fails with the following exception: `OSS-004 : Unable to test connection. Verify Bootstrap Server and Trust store details.`	Trust store was not provided (left blank).	The trust store on the Connections page cannot be blank.
5	Testing the connection fails with the following exception: `OSS-005 : Unable to test connection. Provide valid Trust store.`	Invalid trust store provided. The trust store file does not match the one that contains the public key to connect to the server on the Connections page.	Verify that the trust store provided on the Connections page is correct.
6	In the Adapter Endpoint Configuration Wizard, the following exception is displayed: `OSS-006: Unable to find valid Partition or Stream. Verify the OCI Streaming Service that you are trying to connect has got valid partition and stream available while configuring the adapter.`	Provided a file that is not a trust store (for example, you provided a certificate or any text file) or provided an incorrect partition (nonexistent).	Verify that you are providing the trust store details or the partition. You must pick up the available stream and partition and have no option to enter any value. However, if the stream and partition that were available at the time of design no later exist, you receive an exception about the nonexisting stream or partition.

Issue	Error	Error Occurrence Scenario	Verification Steps
7	In the tracking instance, the following exception appears: `{http://schemas.oracle.com/bpel/extension}runtimeFault: Error sending bytes: oracle.cloud.connector.api.RemoteApplicationException: java.util.concurrent.ExecutionException: org.apache.kafka.common.errors.TimeoutException: Topic OSS_DEMO31 not present in metadata after 60000 ms.`	Stream or partition may have been deleted or is inactive.	Verify that the stream or partition exists and is active. You may have designed a valid stream or partition, but it may have been deleted later. Therefore, when messages are sent to this integration that was designed with the now nonexistent stream or partition, a runtime exception error is displayed.
8	Error summary: `ICS runtime execution encountered {http://schemas.oracle.com/bpel/extension} remoteFault while executing operation: Produce Error Code: Produce {http://schemas.oracle.com/bpel/extension}runtimeFault Error Reason: Error sending bytes: oracle.cloud.connector.api.RemoteApplicationException: ORABPEL-11208 Given input stream could not be base64 encoded. Base64 decoding failed for InputStream . Check the error stack and fix the cause of the error.`	Mapping issue.	Encode/Decode data with base64 in the mapper based on the use case whenever the target field datatype is `xsd:base64Binary`. You can click-right the target field in the mapping and select **Node Info**.

Issue	Error	Error Occurrence Scenario	Verification Steps
9	When navigating through the Adapter Endpoint Configuration Wizard, the Stream & Partition page shows a blank list for topics and streams.	Missing policy.	Create the following policy: `Allow group `*`StreamGroup`*` to manage streams in tenancy / compartment`

10	When a message is being produced without any policy in place, the instance fails with this message:
	
	`Error Reason: Error sending bytes: oracle.cloud.connector. api.RemoteApplicationEx ception: java.util.concurrent.Ex ecutionException: org.apache.kafka.common .errors.UnknownTopicOrP artitionException: This server does not host this topic- partition. Error Summary: ICS runtime execution encountered {http:// schemas.oracle.com/ bpel/ extension}remoteFault while executing operation: Produce Error Code: Produce {http:// schemas.oracle.com/ bpel/ extension}runtimeFault`
		Publishing of messages with no policy for a push.	Create the following policy to publish the message for the stream group:
			
			`Allow group `*`StreamGroup`*` to manage stream-push in tenancy / compartment`
			
			Note: If the following policy is created, no separate policy is required to push data.
			
			`Allow group `*`StreamGroup`*` to manage streams in tenancy/ compartment`

Issue	Error	Error Occurrence Scenario	Verification Steps

11	When a message is consumed without any policy in place, the instance fails with the following message:
	
	`Error sending bytes: oracle.cloud.connector. api.RemoteApplicationEx ception: org.apache.kafka.common .errors.GroupAuthorizat ionException: Not authorized to access group: <consumer_group> :Appli cation Error`
		Consumption of messages with no policy for a pull.	Create the following policy to consume the message for the stream group:
			
			`Allow group `*`StreamGroup`*` to manage stream-pull in tenancy / compartment`
			
			Note: If the following policy is created, no separate policy is required to pull data:
			
			`Allow group `*`StreamGroup`*` to manage streams in tenancy/ compartment`

12	Error Summary: `ICS runtime execution encountered {http:// schemas.oracle.com/ bpel/ extension}remoteFault while executing operation: Produce Error Code: Produce {http:// schemas.oracle.com/ bpel/ extension}runtimeFault Error Reason: Error sending bytes: oracle.cloud.connector. api.RemoteApplicationEx ception: ORABPEL-15236 Translation Failure. Failed to translate XML to JSON. Error while writing AVRO record The data does not conform to the NXSD schema. Please correct the problem.`	Mapping issue.	Map or populate all fields if the Avro message schema is selected, except where the schema type is a union type.

Existing Connections are Suddenly Failing with an "SSL handshake failed" Error

You may need to generate a new trust store certificate for an existing Oracle Cloud Infrastructure Streaming Service Adapter connection that was previously working if the following errors occur:

- If the integration fails with the following error:

```
Unhandled error caught by system-level error
handler :oracle.tip.adapter.sa.api.JCABindingException:
Error sending bytes:
oracle.cloud.connector.api.RemoteApplicationException:
java.util.concurrent.ExecutionException:
org.apache.kafka.common.errors.SslAuthenticationException: SSL
handshake failed
```

- If you then test the connection on the Connections page, it fails with the following error:

```
CASDK-0005: A connector specific exception was raised by the
application. OSS-005: Unable to test connection.
Provide valid trust store.
```

This indicates that the certificate for the Oracle Cloud Infrastructure Streaming Service that was inside the trust store (JKS) configured in the Oracle Cloud Infrastructure Streaming Service Adapter connection has changed.

Solution:

1. Generate a new trust store using the latest certificate for the Oracle Cloud Infrastructure Streaming Service.

2. Upload and configure the new JKS for use by the Oracle Cloud Infrastructure Streaming Service Adapter.

See Know the Trust Store.