

Oracle® Cloud

Provisioning and Administering Oracle Integration Generation 2



F48545-75
January 2025



Oracle Cloud Provisioning and Administering Oracle Integration Generation 2,

F48545-75

Copyright © 2019, 2025, Oracle and/or its affiliates.

Primary Author: Oracle Corporation

Contents

Preface

Audience	vii
Documentation Accessibility	vii
Diversity and Inclusion	vii
Related Resources	vii
Conventions	viii

1 Overview of Oracle Integration Generation 2

Availability	1-1
Restrictions	1-3
Service Limits	1-3
Oracle Integration Editions	1-9
Oracle Integration for Oracle SaaS	1-10
Oracle Integration in Government Regions	1-10
Oracle and Customer Responsibilities in Oracle Integration Generation 2	1-11

2 Before You Begin with Oracle Integration Generation 2

Can I Create an Oracle Integration Generation 2 Instance?	2-1
Can I Create an Oracle Integration for Oracle SaaS Generation 2 Instance?	2-1
Sign In to the Oracle Cloud Infrastructure Console	2-2
Sign In to the Console in Cloud Accounts That Use Identity Domains	2-2
Sign In to the Console in Cloud Accounts That Do Not Use Identity Domains	2-3
Create an Oracle Cloud Infrastructure Compartment	2-5

3 Set Up Users, Groups, and Policies

About Setting Up Users, Groups, and Policies	3-1
About IAM Policies for Oracle Integration	3-3
Set Up Users, Groups, and Policies in Cloud Accounts That Use Identity Domains	3-5
Create an Identity Domain	3-6
Create an IAM Group in an Identity Domain	3-6
Create an IAM Policy in an Identity Domain	3-7

Create a User in an Identity Domain	3-8
Assign Oracle Integration Roles to Groups in an Identity Domain	3-9
Set Up Users, Groups, and Policies in Cloud Accounts That Do Not Use Identity Domains	3-10
Understand Oracle Integration Federation	3-11
Create an IDCS Group	3-11
Create an IAM Group	3-12
Create an IAM Policy	3-12
Map the IDCS and IAM Groups	3-14
Create IDCS Users	3-14
Create IAM Users	3-15
Assign Oracle Integration Roles to Groups	3-16
Configure Multiple Identity Stripes for Oracle Integration Generation 2	3-17
Define a Stripe Naming Convention	3-18
Create an IDCS Group for Secondary Stripe Users	3-18
Create an OAuth Client in the Secondary Stripe	3-18
Create an Oracle Cloud Infrastructure Group for Secondary Stripe Users	3-20
Create the Federation and Its Group Mapping	3-21
Create an Oracle Cloud Infrastructure Policy for Federated Users to Create Instances	3-22
Provide Access to a Federated Stripe in the Oracle Cloud Infrastructure Console Group for Secondary Stripe Users	3-23
Create Oracle Integration Instances in the Secondary Stripe Compartment	3-24
Oracle Integration Service Roles	3-24
Use the Service Integration Account with No Password Expiration	3-26

4 Create and Edit Oracle Integration Generation 2 Instances

Create an Oracle Integration Instance	4-2
Choose a License Type	4-4
Choose a Message Pack Number	4-5
Access an Oracle Integration Instance	4-5
Edit the Edition, License Type, Message Packs, and Custom Endpoint of an Instance	4-6
Increase the Number of Instance Message Packs from the Command Line	4-8
View Instance Details	4-10
Stop and Start an Oracle Integration Instance	4-12
Move an Instance to a Different Compartment	4-13
Delete an Instance	4-14
Create an Access Token to Provision an Instance with the CLI, REST API, or SDKs	4-14
Create the Application	4-15
Generate the Access Token	4-16
Create an Oracle Integration Instance Using a Terraform Script	4-17

5 Manage Oracle Integration Generation 2 Instances

Obtain the NAT Gateway IP Address of the Oracle Integration Instance	5-1
Enable Announcements for Oracle Integration	5-2
Set Data Retention for Runtime Instances	5-3
Configure the Instance Object Storage Bucket	5-6
Export and Import Design-Time Metadata Between Instances	5-7
Create an Export Job	5-8
Create an Import Job	5-10
Manage Integrations and Errors	5-12
Upload an SSL Certificate	5-12
Manage Integration and Process Instance History	5-14
Set Instance Quotas on Compartments	5-14
Configure a Custom Endpoint for an Instance	5-15
Restrict Access to an Instance	5-18
Configure an Allowlist for Your Instance	5-24
Configure Email Authentication Settings for SPF and DKIM	5-26
Troubleshoot Oracle Cloud Infrastructure Notification Email Configuration to Ensure Proper Delivery	5-27
Capture the Activity Stream of Integrations in Oracle Cloud Infrastructure Console	5-28
Preserve Your Instance Data	5-29
Move Oracle Integration Instances to a Different Region	5-30
Rename a Tenancy	5-30

6 Monitor Oracle Integration Generation 2 Instances

View Message Metrics	6-1
Monitor Billable Messages	6-18
About Integrations Usage	6-22
About Process Usage	6-26
Calculate Requests Per Second	6-27
Use the Cost Estimator Tool to Determine Your Monthly Bill	6-30

7 Upgrade from Oracle Integration Generation 2 to Oracle Integration 3

A Oracle Integration Generation 2 Reference

Upgrade to Oracle Integration Generation 2	A-1
Tasks You MUST Do Before the Upgrade	A-4
Tasks to Perform After the Upgrade	A-5
Allowlist Your IP Addresses	A-6
Subscribe to Regions Before Upgrading	A-6

Manually Federate Your Tenancy	A-7
Is My Tenancy Federated Between Oracle Cloud Infrastructure IAM and Oracle Identity Cloud Service?	A-8
Get Required Information from Oracle Identity Cloud Service	A-8
Add Oracle Identity Cloud Service as an Identity Provider	A-11
Automate with Events	A-11
Integration Instance Event Types	A-12
Integration Instance Event Example	A-13

B Oracle Integration Roles and Privileges

What Users Can Do in the Integrations Design Section by Role	B-1
What Users Can Do from the Username Main Menu	B-5
What Users Can Do in the Monitoring Section by Role	B-5
What Users Can Do in the Settings Section by Role	B-7
What Users Can Do in Processes by Role	B-10
What Users Can Do in Insight by Role	B-11
What Users Can Do in File Server by Role	B-12
What Users Can Do in Visual Builder by Role	B-13
What Users Can Do in B2B for Oracle Integration by Role	B-14

Preface

Provisioning and Administering Oracle Integration Generation 2 describes how to create and administer Oracle Integration from the Oracle Cloud Infrastructure Console.

Topics:

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

Audience

Provisioning and Administering Oracle Integration Generation 2 is intended for users who want to create and manage Oracle Integration instances in Oracle Cloud Infrastructure Console.

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

For more information, see these Oracle resources:

- Oracle Integration documentation in the Oracle Cloud Library on the Oracle Help Center.
- Oracle Cloud at <http://cloud.oracle.com>.

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.

Overview of Oracle Integration Generation 2

Oracle Integration is a fully managed, preconfigured environment that gives you the power to integrate your cloud and on-premises applications, automate business processes, gain insight into your business processes, develop visual applications, use an SFTP-compliant file server to store and retrieve files, and exchange business documents with a B2B trading partner.

With Oracle Integration, you can:

- Design integrations to monitor and manage connections between your applications, selecting from our portfolio of hundreds of prebuilt adapters and recipes to connect with Oracle and third-party applications.
- Create process applications to automate and manage your business work flows, whether structured or dynamic.
- Model and extract meaningful metrics for your business processes to achieve real-time visibility and react quickly to changing demands.
- Develop visual applications using the embedded Visual Builder feature.
- Store and retrieve files in Oracle Integration using the embedded SFTP-compliant file server.
- Create integrations that use B2B e-commerce to extend business processes to reach trading partners.

Oracle Integration is available in two editions: standard or enterprise. See [Oracle Integration Editions](#).

Oracle SaaS customers can use Oracle Integration for SaaS, which gives you the features and benefits of Oracle Integration with a focus on SaaS. See [Oracle Integration for Oracle SaaS](#).

Availability

Oracle Integration Generation 2 is currently available in the regions listed below.

Note:

For information about Oracle Integration Generation 2 on US Government Cloud region availability, see [Using Oracle Integration Generation 2 on Oracle Cloud Infrastructure US Government Cloud](#).

Questions about your Oracle Integration availability?

- See [Can I Create an Oracle Integration Generation 2 Instance?](#)
- For Oracle SaaS administrators, see [Can I Create an Oracle Integration for Oracle SaaS Generation 2 Instance?](#)

Geography	Region Location	Region Key
APAC	Australia East (Sydney)	SYD
APAC	Australia Southeast (Melbourne)	MEL
APAC	India South (Hyderabad)	HYD
APAC	India West (Mumbai)	BOM
APAC	Japan Central (Osaka)	KIX
APAC	Japan East (Tokyo)	NRT
APAC	Singapore	SIN
APAC	South Korea Central (Seoul)	ICN
APAC	South Korea North (Chuncheon)	YNY
EMEA	Abu Dhabi	AUH
EMEA	France Central (Paris)	CDG
EMEA	France South (Marseille)	MRS
EMEA	Germany Central (Frankfurt)	FRA
EMEA	Israel (Jerusalem)	MTZ
EMEA	Italy (Milan)	LIN
EMEA	Netherlands Northwest (Amsterdam)	AMS
EMEA	Oman (Muscat)	MCT
EMEA	Saudi Arabia West (Jeddah)	JED
EMEA	South Africa Central (Johannesburg)	JNB
EMEA	Spain Central (Madrid)	MAD
EMEA	Sweden (Stockholm)	ARN
EMEA	Switzerland North (Zurich)	ZRH
EMEA	UAE East (Dubai)	DBX
EMEA	UK Gov South (London)	LTN
EMEA	UK Gov West (Newport)	BRS
EMEA	UK West (Newport)	CWL
EMEA	UK South (London)	LHR
LAD	Brazil East (Sao Paulo)	GRU
LAD	Brazil Southeast (Vinhedo)	VCP
LAD	Chile Central (Santiago)	SCL
LAD	Mexico Central (Queretaro)	QRO
North America	Canada Southeast (Montreal)	YUL
North America	Canada Southeast (Toronto)	YYZ
North America	US DoD East (Ashburn)	ric
North America	US DoD North (Chicago)	pia
North America	US DoD West (Phoenix)	tus
North America	US East (Ashburn)	IAD
North America	US Gov East (Ashburn)	LFI
North America	US Gov West (Phoenix)	LUF
North America	US West (Phoenix)	PHX

Geography	Region Location	Region Key
North America	US West (San Jose)	SJC

Restrictions

Note the following current restrictions when creating and using Oracle Integration.

- You can create Oracle Integration Generation 2 instances in any Oracle data region listed in [Availability](#).
- You can create Oracle Integration for Oracle SaaS Generation 2 instances in any Oracle data region if you created a new Oracle Cloud account on or after February 11, 2020.
- Email notifications from Processes work correctly. However, it's not possible to set a custom "from" sender (that is, the `from` address is the default).
- You currently cannot provision Oracle Integration for Oracle SaaS in a self-created child tenancy. This type of tenancy currently supports only Universal Credit Model (UCM) subscriptions. Oracle Integration for Oracle SaaS is a non-metered monthly subscription only.

Service Limits

Review the following service limits for Oracle Integration Generation 2 resources. A service limit is the quota or allowance set on a resource. You cannot change the service limits configured for your cloud account.

Oracle Cloud Infrastructure Console Service Limits

Resource	Service Limit
Integration service instance count	200 instances per region. Note: This value is the number of service instances you provision per region, and <i>not</i> the number of integration instances (for example, app driven orchestration and scheduled orchestration) that you activate and monitor under the Monitoring tab in Oracle Integration.
Custom endpoints - maximum number	3 alternative custom endpoints.

Oracle Integration Components Service Limits

- [Adapters](#)
- [Integrations](#)
- [Processes](#)
- [File Server](#)

Table 1-1 Adapters

Resource	Service Limit
For structured payloads delivered on trigger connections or as a response from invoke connections	50 MB limit for cloud endpoints (not using the connectivity agent).

Table 1-1 (Cont.) Adapters

Resource	Service Limit
For binary (unstructured) payloads (for example, attachments, MTOM)	1 GB limit for trigger connections and responses from invoke connections.
For connectivity agent-based adapters, the payload limits for structured payload (JSON, XML).	50 MB limit for SOAP and REST. For any other protocol, the payload limit is: <ul style="list-style-type: none"> • FTP and file: 50 MB. • Database, JMS, MQ, Kafka, and others: 10 MB.
File Adapter - file size	<p>Read File operation:</p> <ul style="list-style-type: none"> • Trigger (polling): <ul style="list-style-type: none"> – 50 MB without schema – 50 MB with schema • Invoke (synchronous read): <ul style="list-style-type: none"> – 1 GB without schema – 50 MB with schema <p>Write File operation:</p> <ul style="list-style-type: none"> • 1 GB when used without a schema • 50 MB when using a schema for transformation. <p>Download File operation: 1 GB.</p>

 **Note:**

The size of CSV files increases when translated into a message. Therefore, the file size must be less than 50 MB, so that the after-translation message size does not exceed 50 MB.

FTP Adapter - file size	<p>For invoke configurations</p> <p>Read File operation:</p> <ul style="list-style-type: none"> • 1 GB when used without a schema (with a connectivity agent). • 50 MB when using a schema for transformation. • 50 MB for agent-based endpoints <p>Download File operation: 1 GB (both with and without the connectivity agent)</p>
AS2 Adapter - file size limit	10 MB

Table 1-1 (Cont.) Adapters

Resource	Service Limit
REST Adapter	<p>For trigger configurations</p> <ul style="list-style-type: none"> XML document size for schema generation: 3 MB. See REST Adapter Capabilities. Messages with attachments (for example, multipart/mixed and multipart/form-data): 1 GB Incoming structured message payload size (any content-type header containing JSON, XML, HTML, YAML, or YML): 50 MB <p>Note: If the string length for fields in a JSON payload exceeds 20 MB, you receive a translation failure error. See ORABPEL-15235 Translation Failure Occurrence in <i>Using the REST Adapter with Oracle Integration Generation 2</i>.</p> <ul style="list-style-type: none"> Incoming content as raw bytes (application/octet-stream as content type): 1 GB. Specifying the response payload format: JSON sample files of up to 100 KB in size are supported. <p>For invoke configurations</p> <ul style="list-style-type: none"> XML document size for data definition generation: 3 MB. See REST Adapter Capabilities. Specifying the request payload format: JSON sample files of up to 100 KB in size are supported.
REST-Based Adapters (Adapters that expose REST endpoints on the inbound or adapters invoking external REST endpoints. For example, Oracle Commerce Cloud Adapter, Oracle Field Service Adapter, and so on.)	<p>For trigger configurations (wherever applicable)</p> <ul style="list-style-type: none"> XML document size for schema generation: 3 MB. See REST Adapter Capabilities. Messages with attachments (for example, multipart/mixed and multipart/form-data): 1 GB. Incoming structured message payload size (any content-type header containing JSON, XML, HTML, YAML, or YML): 50 MB Incoming content as raw bytes (application/octet-stream as content type): 1 GB. Specifying the response payload format: JSON sample files of up to 100 KB in size are supported. <p>For invoke configurations (wherever applicable)</p> <ul style="list-style-type: none"> XML document size for data definition generation: 3 MB. See REST Adapter Capabilities. Specifying the request payload format: JSON sample files of up to 100 KB in size are supported.
SAP Adapter - Payload size limits	<ul style="list-style-type: none"> 50 MB for SAP endpoints 50 MB for agent-based endpoints
SOAP Adapter	<p>For trigger configurations</p> <ul style="list-style-type: none"> Structured payload (XML) size in Request and Response: 50 MB. <p>For invoke configurations</p> <ul style="list-style-type: none"> Structured payload (XML) size in Request and Response: 50 MB. MTOM attachment (binary and non-binary content) size in response: 1 GB.

Table 1-1 (Cont.) Adapters

Resource	Service Limit
SOAP-Based Adapters (Adapters that expose SOAP endpoints on the inbound or adapters invoking external SOAP endpoints. For example, Oracle Logistics Adapter.)	<p>For trigger configurations (wherever applicable)</p> <ul style="list-style-type: none"> Structured payload (XML) size in Request and Response: 50 MB. <p>For invoke configurations (wherever applicable)</p> <ul style="list-style-type: none"> Structured payload (XML) size in Request and Response: 50 MB. MTOM attachment (binary and non-binary content) size in response: 1 GB.
Database Adapters (Oracle Database Adapter, IBM DB2 Adapter, Microsoft SQL Server Adapter, MySQL Adapter, Oracle Autonomous Data Warehouse Adapter, Oracle Autonomous Transaction Processing Adapter, and Oracle Database Cloud Service Adapter)	<p>For trigger configurations</p> <ul style="list-style-type: none"> Polling Operation: 10 MB with schema transformation. <p>For invoke configurations</p> <ul style="list-style-type: none"> Stored Procedure/Operation on Table/Run PureSQL Statement Operations: 10 MB with schema transformation for all the outbound operations.
Apache Kafka Adapter	<p>For invoke configurations</p> <ul style="list-style-type: none"> Produce/Consume Message Operations: 10 MB with schema transformation for all the outbound operations.
JMS Adapters (Oracle WebLogic JMS Adapter and IBM MQ Series JMS Adapter)	<p>For trigger configurations</p> <ul style="list-style-type: none"> Consume Message Operation: 10 MB with schema transformation.
Oracle CPQ Cloud Adapter - response payload	10 MB.
Oracle Autonomous Data Warehouse Adapter, Oracle Autonomous Transaction Processing Adapter, Oracle Database Cloud Service Adapter, MySQL Adapter, Microsoft SQL Server Adapter, Oracle Database Adapter, and IBM DB2 Adapter	Starting with the August 2021 release, all <i>new</i> integrations that include stored procedure or PureSQL database operations must finish within 240 seconds. Otherwise, the query times out.
Timeouts for all outbound adapter invocations	<p>The following values are set and cannot be changed:</p> <ul style="list-style-type: none"> READ timeout is set to 5 minutes. Connection timeout is set to 5 minutes.
Timeouts for all connectivity agent-based outbound adapter invocations	Connection timeout is set to 4 minutes.
Database adapter timeouts	240 seconds.
Salesforce Adapter - batch file size	8 MB (10,000 records). See Process Large Data Sets Asynchronously with Different Bulk Operations.
SAP Ariba Adapter	See SAP Ariba Adapter Restrictions.

 **Note:**

When the message payload in an integration exceeds 10 MB, the message is rejected and an error message is displayed. The error message describes remedial actions to perform. See Perform Remedial Actions When the Payload Exceeds 10 MB.

Table 1-2 Integrations

Resource	Service Limit
Connectivity agent - memory	A minimum of 8 GB memory with 4 GB of heap size dedicated to the on-premise agent's Java Virtual Machine (JVM). To include any other processes on the host besides the agent, increase the physical memory to a value greater than 8 GB.
Connectivity agent - message payload	10 MB, through the use of compression. All connectivity-agent-enabled adapters <ul style="list-style-type: none"> • 10 MB as request. • 10 MB as response. SOAP and REST adapters configured with connectivity agent <ul style="list-style-type: none"> • 10 MB (structured XML/JSON document) as request. • 10 MB (structured XML/JSON document) as response from private SOAP/REST endpoints. • 1 GB for attachments as part of a request. • 1 GB for attachments as part of a response from private SOAP/REST endpoints.
Active integrations limit	700. This limit is enforced. See Activate an Integration in <i>Using Integrations in Oracle Integration Generation 2</i> .
Stage File action (in orchestrated integrations) - file size	Read Entire File operation: 10 MB. For files greater than 10 MB, use the Read File in Segments operation. Encrypt File operation: 1 GB. Decrypt File operation: 1 GB.
Synchronous integration message timeout	300 seconds. Synchronous integrations (integrations that return a response payload) return a timeout error if they run more than 300 seconds.
Oracle Integration Messaging - message size	10 MB.
Encode and Decode File Attachment Content (mapper)	The functions <code>encodeReferenceToBase64(String reference)</code> and <code>decodeBase64ToReference(String base64Content)</code> have a file size limit of 10 MB.
Activity stream size	100 MB. The maximum size for payloads inside the activity stream is 512 KB, at which time the payloads are truncated.
Activity stream logs - file size	10 MB.
Incident package	You are restricted to reading the last 1000 lines from each log when creating an incident package during an incident.
Lookup column length	2048 characters.
Notification action - attachments size	<ul style="list-style-type: none"> • 1 MB for Oracle Integration. • 2 MB for Oracle Integration Generation 2. Both the email body and attachment are considered in calculating the total size.
Maximum number of daily outbound emails you can send from Oracle Integration	10000 emails per day.
JavaScript action timeout threshold	15 seconds

Table 1-2 (Cont.) Integrations

Resource	Service Limit
JavaScript function maximum parameter support	20 parameters
Number of concurrent instances of given scheduled integration	1 for scheduled and out-of-band and 1 for ad-hoc. Where: <ul style="list-style-type: none">• Out-of-band: A <i>run now</i> run associated with a schedule.• Ad-hoc: A <i>run now</i> run not associated with a schedule.
Execution time threshold for long running scheduled integrations	Terminated by Oracle Integration if integration exceeds 6 hours. See Execution Time Threshold for Long Running Scheduled Integrations in <i>Using Integrations in Oracle Integration Generation 2</i> .
Oracle Asserter recording size	25 MB There are additional asserter limits. See Restrictions in <i>Using Integrations in Oracle Integration Generation 2</i> .
While loop iterations	5000.
For each loop iterations	5000.
Tracking variable - value	100 characters. If the value is greater than the limit, it's truncated.
Schedule parameter - value	256 characters.
Integration properties - value	256 characters.
Integration/Connection - name	50 characters on the UI; 200 characters in the database.
Integration/Connection - package name	50 characters on the UI; 200 characters in the database.
Integration/Connection - version	10 characters on the UI; 50 characters in the database.
Integration/Connection - description	1024 characters on the UI; 2000 characters in the database.
Log file downloads and log level settings	You <i>cannot</i> download logs or set logging levels in Oracle Integration Generation 2. Instead, use the activity stream to view instance details. See View the Dashboard and Track Business Identifiers in Integrations During Runtime in <i>Using Integrations in Oracle Integration Generation 2</i> .
B2B for Oracle Integration - Trading partner management and B2B message tracking	These features are only supported in Oracle Integration Generation 2. See Manage Trading Partners and Track B2B Messages in <i>Using B2B for Oracle Integration Generation 2</i> .
Oracle API Gateway - Activate and deploy integrations from Oracle Integration	This feature is only supported in Oracle Integration Generation 2. See Connect to Oracle API Gateway in <i>Using Integrations in Oracle Integration Generation 2</i> .

Table 1-3 Processes

Resource	Service Limit
Email attachment size	2 MB.
Document attachment size (native as well as via Oracle Content Management)	15 MB.
Maximum payload size in REST APIs	<ul style="list-style-type: none"> • 10 MB, for any content-type header containing JSON, XML, HTML, YAML, or YML. • 20 MB for other content types.

Table 1-3 (Cont.) Processes

Resource	Service Limit
Maximum number of times a given activity can execute per instance (via direct or indirect loops) in a single process instance	1000.

Table 1-4 File Server

Resource	Service Limit
Storage	500 GB.
Concurrent connections	Maximum of 50 connections per service instance

Oracle Cloud Infrastructure also has service limits. See [Service Limits](#)

Oracle Integration Editions

Oracle Integration is available in two editions: *Standard* and *Enterprise*.

Either edition gives you the power to integrate your Software as a Service (SaaS) applications and your on-premises applications. Enterprise edition enables you to also design, automate, and manage your business processes in the cloud.

Regardless of which edition you choose, Oracle handles cloud and database management and other administrative tasks for you.

 **Note:**

All Oracle Integration Enterprise Edition features are visible in Standard Edition instances. However, if you have a Standard Edition license, you are not entitled to use features that are only available in Enterprise Edition (such as enterprise adapters, Process, B2B, and Integration Insight) unless you update your instance to Oracle Integration Enterprise Edition. See [Edit the Edition, License Type, Message Packs, and Custom Endpoint of an Instance](#).

Here's a side-by-side comparison of what's licensed in each edition.

Capability	Available in Standard edition	Available in Enterprise edition
Integration	Yes	Yes
Visual Builder	Yes	Yes
Standard adapters	Yes	Yes
Enterprise adapters*	No	Yes
Process	No	Yes
B2B**	No	Yes
Integration Insight	No	Yes +
File Server	Yes +	Yes +

Capability	Available in Standard edition	Available in Enterprise edition
Embedded recipes and business and technical accelerators	Yes +	Yes +

*Enterprise adapters consist of Oracle E-Business Suite Adapter, Oracle JD Edwards EnterpriseOne Adapter, Oracle Siebel Adapter, and SAP Adapter.

**The AS2 Adapter available in the Standard edition can be used in standalone mode (for example, for file transfer protocol use cases).

+ Available in Oracle Integration Generation 2 and later.

Oracle Integration for Oracle SaaS

Oracle Integration for Oracle SaaS, a streamlined version of Oracle Integration, gives you the features and benefits of Oracle Integration with a focus on SaaS. You can create Oracle Integration for Oracle SaaS Generation 2 instances in any Oracle data region if you created a new Oracle Cloud account on or after February 11, 2020.

Here are the key differences between Oracle Integration for Oracle SaaS and Oracle Integration:

- **Purpose-built for connecting and extending Oracle SaaS.** Specifically, every integration you create must have an endpoint in an Oracle Cloud SaaS application, every Visual Builder application you create must use at least one business object or API call from an Oracle Cloud SaaS application, and every process application you create must include at least one business object or API call from an Oracle Cloud SaaS application.
- **Flexibility for hourly bursting.** Oracle Integration for Oracle SaaS is offered as a monthly subscription in packs of one million messages per month, which keeps costs predictable even when you have unpredictable hourly volumes. Usage is reported monthly instead of hourly.
- **Provisioning.** Creating an instance for Oracle Integration for Oracle SaaS is slightly different from creating an instance for Oracle Integration, and Bring Your Own License (BYOL) is not available in Oracle Integration for Oracle SaaS. Differences in provisioning are noted in [Create an Oracle Integration Instance](#).

Oracle Integration in Government Regions

Oracle Integration Generation 2 is available in US government and UK government regions.

To learn about the Oracle Integration features available in government regions, see the following documentation resources.

Government Regions	Documentation
• OC2 realm (Oracle Cloud Infrastructure US Government Cloud with FedRAMP Authorization) in the US Gov East (Ashburn) and West (Phoenix) regions	Using Oracle Integration Generation 2 on Oracle Cloud Infrastructure US Government Cloud
• OC3 realm (Oracle Cloud Infrastructure US Federal Cloud with DISA Impact Level 5 Authorization) in the US DoD East (Ashburn), North (Chicago), and West (Phoenix) regions	

Government Regions	Documentation
<ul style="list-style-type: none"> OC4 realm (United Kingdom Government Cloud) in the UK Gov South (London) and UK Gov West (Newport) regions 	Oracle Integration documentation on the Oracle Help Center

Oracle and Customer Responsibilities in Oracle Integration Generation 2

This table summarizes the division of responsibilities between Oracle and customers in Oracle Integration Generation 2.

R=Responsible, A=Accountable, C=Consulted, I=Informed

Task	Oracle's Role	Customer's Role	Comments
Patching and upgrade	R, A	I	Quarterly functional patching and monthly maintenance patching involve zero downtime. Oracle completes all update work on your behalf, with no work required by you.
			Do not stop or start instances on a nightly basis. During routine maintenance patching, lifecycle operations are disabled. This may lead to a situation where the service instance cannot be started or stopped for several hours while the patching cycle completes. See Stop and Start an Oracle Integration Instance .
High availability	R, A	I	--
Disaster recovery	C	R, A	See Introduction in Configuring a Disaster Recovery Solution for Oracle Integration Generation 2 .
Security and compliance	R, A	I	--
Maintenance notifications	R, A	I	--
Service provisioning	C, A	R, I	--
User setup, roles and, permissions	C	R, A	--
Overage tracking and management	C	R, A	--
Test-to-production promotion	C	R, A	--

Task	Oracle's Role	Customer's Role	Comments
On-premises connectivity agent installation	C	R, A	--
On-premises connectivity agent upgrade/patching	R, A	I	<p>Note: When a new version of the on-premises connectivity agent becomes available, your host is automatically upgraded with the latest version.</p> <p>There is no downtime or interruption of service for in-process integrations that use the connectivity agent. You are notified of upgrade success.</p>
Source control and continuous integration	C	R, A	<p>You can implement continuous integration/continuous delivery in Oracle Integration. See this blog.</p>
Integration monitoring and management	C	R, A	--

See [Preserve Your Instance Data](#).

Before You Begin with Oracle Integration Generation 2

Get started with Oracle Integration Generation 2 on Oracle Cloud Infrastructure.

Topics:

- [Can I Create an Oracle Integration Generation 2 Instance?](#)
- [Can I Create an Oracle Integration for Oracle SaaS Generation 2 Instance?](#)
- [Sign In to the Oracle Cloud Infrastructure Console](#)
- [Create an Oracle Cloud Infrastructure Compartment](#)

Can I Create an Oracle Integration Generation 2 Instance?

Oracle Integration Generation 2 refers to Oracle Integration running natively on the Oracle Cloud Generation 2 Infrastructure.

 **Note:**

Interested in Oracle Integration for Oracle SaaS Generation 2 instead, as described in [Oracle Integration for Oracle SaaS](#)? See [Can I Create an Oracle Integration for Oracle SaaS Generation 2 Instance?](#)

You can create Oracle Integration Generation 2 instances in any Oracle data region listed in [Availability](#). Simply follow the instructions in this current guide.

Can I Create an Oracle Integration for Oracle SaaS Generation 2 Instance?

Oracle Integration for Oracle SaaS Generation 2 refers to Oracle Integration for Oracle SaaS running natively on the Oracle Cloud Generation 2 Infrastructure.

 **Note:**

Interested in Oracle Integration Generation 2 instead (not SaaS-specific)? See [Can I Create an Oracle Integration Generation 2 Instance?](#) For information on differences, see [Oracle Integration for Oracle SaaS](#).

Simply follow the instructions in this current guide to create an Oracle Integration for Oracle SaaS Generation 2 instance.

Sign In to the Oracle Cloud Infrastructure Console

Signing into the Oracle Cloud Infrastructure Console differs depending on whether or not your cloud account uses identity domains.

If you are not sure if your cloud account uses identity domains, see [About Setting Up Users, Groups, and Policies](#).

Topics:

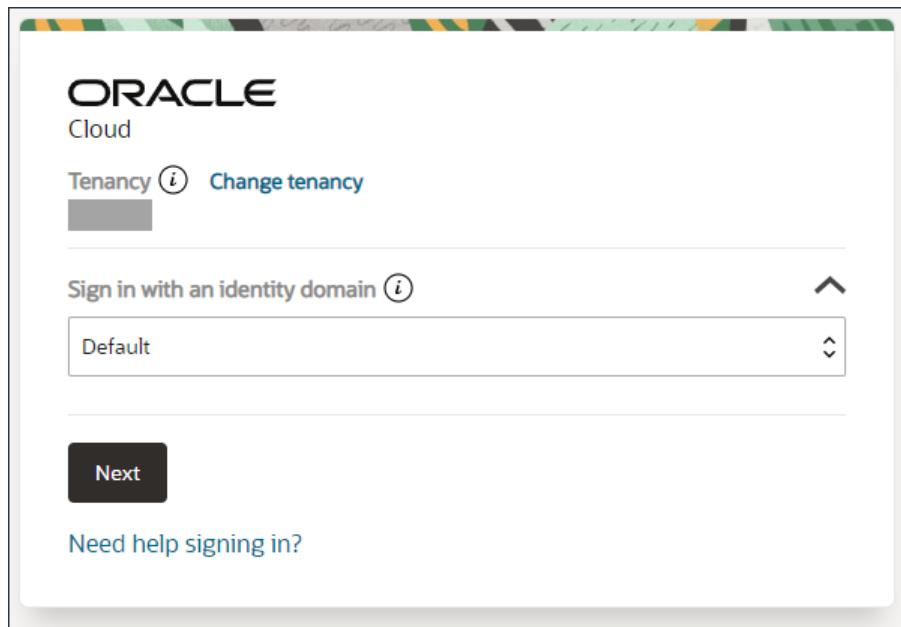
- [Sign In to the Console in Cloud Accounts That Use Identity Domains](#)
- [Sign In to the Console in Cloud Accounts That Do Not Use Identity Domains](#)

Sign In to the Console in Cloud Accounts That Use Identity Domains

If your cloud account uses identity domains, you sign in to the Oracle Cloud Infrastructure Console as a user configured in Oracle Cloud Infrastructure Identity and Access Management (IAM).

 **This topic applies only to tenancies that use identity domains.** See Differences Between Tenancies With and Without Identity Domains.

1. Go to <http://cloud.oracle.com>.
2. Enter your cloud account name and click **Next**.
3. Select the **default** domain.



 **Note:**

If your sign-in page looks different, your cloud account may not use identity domains. See [Sign In to the Console in Cloud Accounts That Do Not Use Identity Domains](#)

4. Enter the user name and password provided in the welcome email, and click **Sign In**.
The Oracle Cloud Infrastructure Console is shown.
5. Explore categories and options in the navigation menu.
 - Open the navigation menu and click **Developer Services**. Under **Application Integration**, click **Integration**. Use this landing page to access, create, and manage Oracle Integration instances.
Click **pin**  to save the selection under the **Pinned** category on the Home page.
 - Open the navigation menu and click **Identity & Security**. Under **Identity**, click identity links to create compartments and domains if needed, and to perform tasks related to identity management. See [Set Up Users, Groups, and Policies](#).

Sign In to the Console in Cloud Accounts That Do Not Use Identity Domains

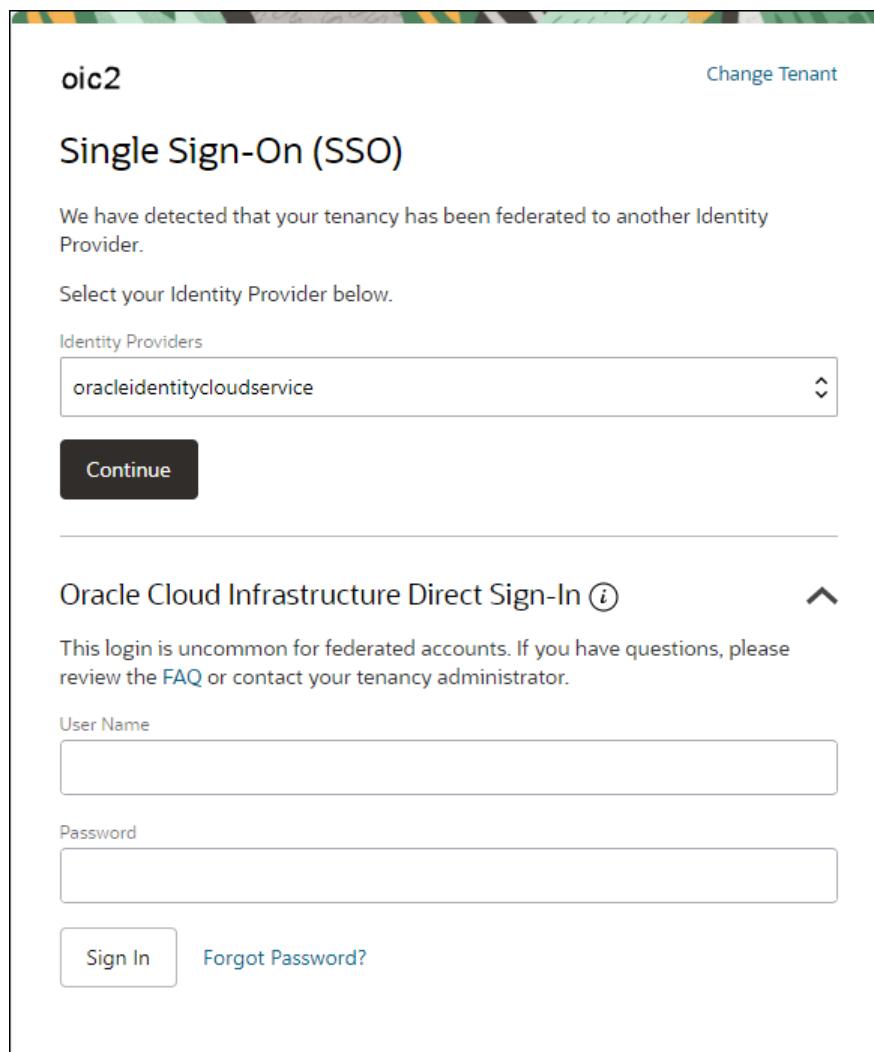
If your cloud account does not use identity domains, you sign in to the Oracle Cloud Infrastructure Console as a user federated through Oracle Identity Cloud Service. A federated environment enables business partners to integrate in the identity management realm by providing a mechanism for users to share identity information across respective security domains.



This topic applies only to tenancies that do not use identity domains. See [Differences Between Tenancies With and Without Identity Domains](#).

1. Go to <http://cloud.oracle.com>.
2. Enter your cloud account name and click **Next**.

Identity options are displayed.



 **Note:**

If your sign-in page looks different, your cloud account may use identity domains. See [Sign In to the Console in Cloud Accounts That Use Identity Domains](#)

- The *upper* portion displays federated sign in (Oracle Integration is federated with Oracle Identity Cloud Service).
- The *lower* portion displays native Identity and Access Management (IAM) options standard to Oracle Cloud Infrastructure.

 **Note:**

If no federated sign in options are displayed in the upper portion, your tenancy requires manual federation. Sign in as an administrator using native IAM credentials and complete federation, including group mapping. See [Understand Oracle Integration Federation and Manually Federate Your Tenancy](#).

Under Single Sign-On (SSO) options, note the identity provider selected in the **Identity Providers** field and click **Continue**.

The Oracle Identity Cloud Service sign in screen is shown.

3. Enter the user name and password provided in the welcome email, and click **Sign In**.

The Oracle Cloud Infrastructure Console is displayed.

4. Explore categories and options in the navigation menu.

- Open the navigation menu and click **Developer Services**. Under **Application Integration**, click **Integration**. Use this landing page to access, create, and manage Oracle Integration instances.

Click **pin**  to save the selection under the **Pinned** category on the Home page.

- Open the navigation menu and click **Identity & Security**. Under **Identity**, click identity links to create compartments if needed, and to perform tasks related to identity management. See [Set Up Users, Groups, and Policies](#).

Create an Oracle Cloud Infrastructure Compartment

Oracle Integration instances use the Oracle Cloud Infrastructure as their underlying infrastructure. To create an Oracle Integration instance, you must first create a compartment, unless you want to create the instance in the root compartment.

See [Managing Compartments](#).

You can create a new compartment or use an existing compartment. You must have permission to create and delete compartments.

1. Open the navigation menu and click **Identity & Security**. Under **Identity**, click **Compartments**.

A list of the compartments in your tenancy is displayed.

2. Select the compartment in which you want to create your instance or create a new compartment.

To create a new compartment:

- a. Click **Create Compartment** to create the compartment to use for creating an instance.

- b. Enter the following:

- **Name:** Enter a name that is unique across all compartments in your tenancy (maximum 100 characters, including letters, numbers, periods, hyphens, and underscores). For example, enter a name such as `OICCompartment`.

- **Description:** Enter a description for this compartment.

- **Tags:** Enter tags to organize and list resources based on your business needs. See [Managing Tags and Tag Namespaces](#).

- c. Click **Create Compartment**.

Return to the navigation pane.

Set Up Users, Groups, and Policies

Setting up users, groups, and policies for access to Oracle Integration differs depending on whether or not your region has been updated to use identity domains prior to creation of your cloud account.

Topics:

- [About Setting Up Users, Groups, and Policies](#)
- [About IAM Policies for Oracle Integration](#)
- [Set Up Users, Groups, and Policies in Cloud Accounts That Use Identity Domains](#)
- [Set Up Users, Groups, and Policies in Cloud Accounts That Do Not Use Identity Domains](#)
- [Oracle Integration Service Roles](#)

About Setting Up Users, Groups, and Policies

Managing users, groups, and policies for access to Oracle Integration differs depending on whether your tenancy uses identity domains.

Where You Manage Users and Groups

Beginning in March 2023, Oracle began a region-by-region migration of all tenancies to use identity domains. Tenancy owners will be notified two weeks prior to the migration of their tenancy. All IDCS instances in the tenancy will be converted at the same time regardless of the IDCS home region.

Your tenancy already uses identity domains if Oracle updated your region to use identity domains *before* you created your tenancy. However, if Oracle updated your region to use identity domains *after* you created your tenancy, then your tenancy will be migrated.

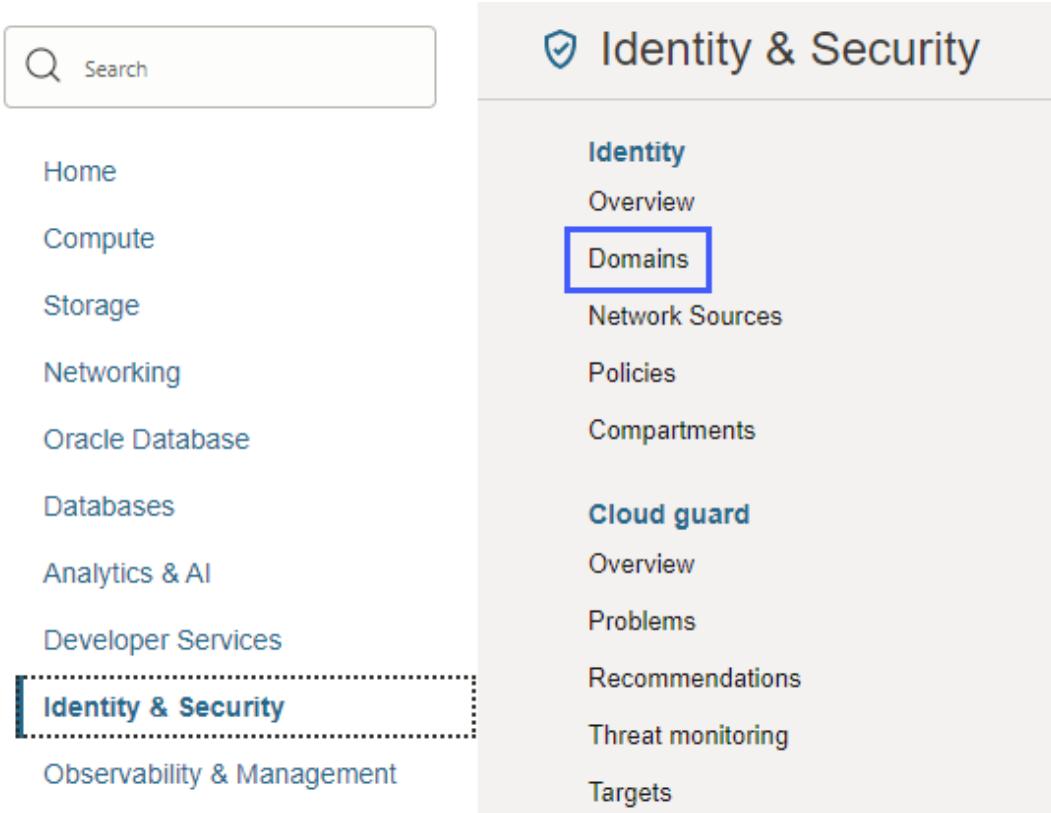
The migration to identity domains includes the migration of all users, groups, and roles. During the period that Oracle is migrating tenancies, you manage users, groups, and roles depending on the status of your tenancy:

- Manage users, groups, and roles in Oracle Cloud Infrastructure Identity and Access Management (IAM) if either of the following are true:
 - Oracle updated your region to use identity domains before you created your tenancy
 - Or, Oracle has migrated existing tenancies in your region to use identity domainsIn either scenario, you do not use Oracle Identity Cloud Service (IDCS) or federation to set up users and groups.
- Manage users, groups, and roles in both IDCS and Oracle Cloud Infrastructure IAM, linked using federation, if both of the following are true:
 - Oracle updated your region to use identity domains after you created your tenancy
 - And, Oracle has not yet migrated existing tenancies in your region to use identity domains

Determine Whether a Cloud Account Uses Identity Domains

To determine whether your cloud account uses identity domains, open the Oracle Cloud Infrastructure navigation menu and click **Identity & Security**. Under **Identity**, check for **Domains**:

- If **Domains** is listed, then your cloud account uses identity domains. See [Set Up Users, Groups, and Policies in Cloud Accounts That Use Identity Domains](#).



- If **Domains** is not listed, then your cloud account is still configured to link identities in IDCS and Oracle Cloud Infrastructure IAM using federation. See [Set Up Users, Groups, and Policies in Cloud Accounts That Do Not Use Identity Domains](#).

The following table outlines the differences between the two configurations.

Cloud Accounts That Use Identity Domains	Cloud Accounts That Do Not Use Identity Domains
Users and groups are configured in Oracle Cloud Infrastructure IAM.	Users and groups are configured in Oracle Cloud Infrastructure IAM and IDCS, linked through federation. See Understand Oracle Integration Federation .
The Oracle Cloud Infrastructure IAM service provides a single unified console for managing users, groups, dynamic groups, and applications in <i>domains</i> .	Note: Read only users can be assigned to an Oracle Cloud Infrastructure group only and not to an IDCS group. Oracle Cloud Infrastructure IAM must be federated with IDCS for your tenancy.

Cloud Accounts That Use Identity Domains	Cloud Accounts That Do Not Use Identity Domains
Provides Single Sign-On to more applications using a single set of credentials and a unified authentication process.	Requires separate federated credentials for IDCS.
The Federation page does not list any IDCS entries.	The Federation page lists the primordial IDCS type that is automatically federated as part of the cloud account creation.

About IAM Policies for Oracle Integration

Use Oracle Cloud Infrastructure Identity and Access Management (IAM) policies to control access to resources in your tenancy. For example, you can create a policy that authorizes users to create and manage Oracle Integration instances.

You create IAM policies using the Oracle Cloud Infrastructure Console. See [Managing Policies](#) in the Oracle Cloud Infrastructure documentation.

Resource Types

The resource type available for Oracle Integration is:

- integration-instance

Supported Variables

The integration-instance resource type can use the following variables.

Supported Variables	Variable	Variable Type	Description
Required Variables Supplied by the Service for Every Request	target.compartment.id	ENTITY	The OCID of the primary resource for the request.
	request.operation	STRING	The operation id (for example GetUser) for the request.
	target.resource.kind	STRING	The resource kind name of the primary resource for the request.
Automatic Variables Supplied by the SDK for Every Request	request.user.id	ENTITY	For user-initiated requests. The OCID of the calling user.
	request.groups.id	LIST(ENTITY)	For user-initiated requests. The OCIDs of the groups of request.user.id.
	target.compartment.name	STRING	The name of the compartment specified in target.compartment.id.
	target.tenant.id	ENTITY	The OCID of the target.tenant.id.
Additional Variables for Oracle Integration	target.integration-instance.id	ENTITY	The OCID of the Oracle Integration instance that was created.

Details for Verb + Resource-Type Combinations

The following table shows the permissions and API operations covered by each verb. The level of access is cumulative as you go from INSPECT to READ to USE to MANAGE.

Verb	Permissions	APIs Fully Covered	APIs Partially Covered
INSPECT	• INTEGRATION_INSTANCE_INSPECT	• ListIntegrationInstances • ListWorkRequests	None
READ	• Inherits from INSPECT: – INTEGRATION_INSTANCE_INSPECT • INTEGRATION_INSTANCE_READ	• GetIntegrationInstance • GetWorkRequest	None
USE	• Inherits from READ: – INTEGRATION_INSTANCE_INSPECT – INTEGRATION_INSTANCE_READ • INTEGRATION_INSTANCE_UPDATE	• UpdateIntegrationInstances • StartIntegrationInstance • StopIntegrationInstance	None
MANAGE	• Inherits from USE: – INTEGRATION_INSTANCE_INSPECT – INTEGRATION_INSTANCE_READ – INTEGRATION_INSTANCE_UPDATE • INTEGRATION_INSTANCE_CREATE • INTEGRATION_INSTANCE_DELETE • INTEGRATION_INSTANCE_MOVE	• CreateIntegrationInstance • DeleteIntegrationInstance • ChangeIntegrationCompartment	None

Permissions Required for Each API Operation

API Operation	Permissions Required to Use the Operation
ListIntegrationInstances	INTEGRATION_INSTANCE_INSPECT
GetIntegrationInstance	INTEGRATION_INSTANCE_READ
CreateIntegrationInstance	INTEGRATION_INSTANCE_CREATE
DeleteIntegrationInstance	INTEGRATION_INSTANCE_DELETE
UpdateIntegrationInstances	INTEGRATION_INSTANCE_UPDATE
StartIntegrationInstance	INTEGRATION_INSTANCE_UPDATE
StopIntegrationInstance	INTEGRATION_INSTANCE_UPDATE
ListWorkRequests	INTEGRATION_INSTANCE_INSPECT
GetWorkRequest	INTEGRATION_INSTANCE_READ
ChangeIntegrationCompartment	INTEGRATION_INSTANCE_MOVE

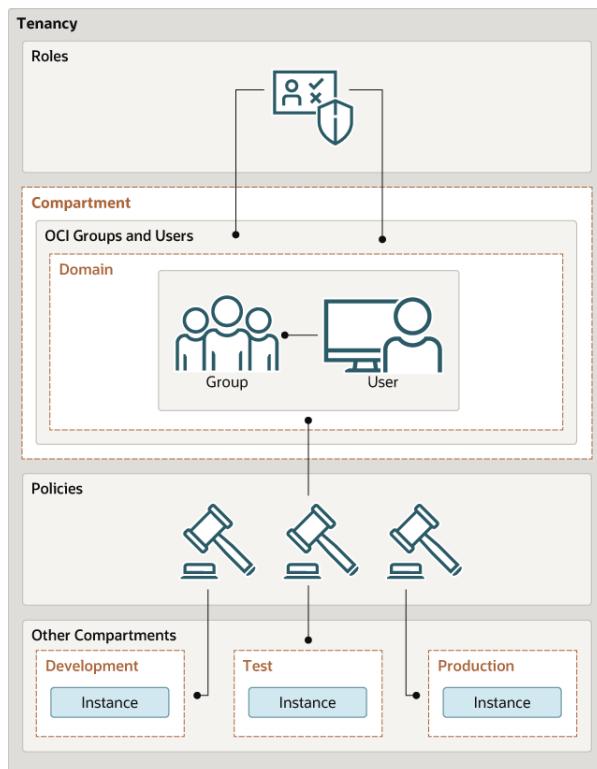
Set Up Users, Groups, and Policies in Cloud Accounts That Use Identity Domains

For a cloud account in a region updated to use identity domains prior to the creation of the cloud account, users and groups are set up in only Oracle Cloud Infrastructure Identity and Access Management (IAM).

If you are not sure if your cloud account uses identity domains, see [About Setting Up Users, Groups, and Policies](#).

For more information about Oracle Cloud Infrastructure IAM, IDCS, and the documentation that provides the information you need, see *Documentation to Use for Cloud Identity* in [Overview of IAM](#) in the Oracle Cloud Infrastructure documentation.

With identity domains, roles are assigned to Oracle Cloud Infrastructure IAM groups within a domain, as illustrated in the following diagram.



Topics:

- [Create an Identity Domain](#)
- [Create an IAM Group in an Identity Domain](#)
- [Create an IAM Policy in an Identity Domain](#)
- [Create a User in an Identity Domain](#)
- [Assign Oracle Integration Roles to Groups in an Identity Domain](#)

Create an Identity Domain

Create an identity domain in which to configure users, groups, and policies.



This topic applies only to tenancies that use identity domains. See Differences Between Tenancies With and Without Identity Domains.

For more information about identity domains, see [Managing Identity Domains](#) in the Oracle Cloud Infrastructure documentation.

In an Oracle Cloud Infrastructure tenancy (cloud account) your environment includes a root (default) compartment and possibly several other compartments, depending on how your environment is configured. To create compartments, see [Create an Oracle Cloud Infrastructure Compartment](#). Within each compartment, you can create users and groups. For example, as a best practice:

- In the root (default) compartment, use the default domain for administrators only.
- In another compartment (for example, named **Dev**), create a domain for users and groups in a development environment.
- In another compartment (for example, named **Prod**), create a domain for users and groups in a production environment.

You can also create multiple domains in a single compartment.

1. Open the navigation menu and click **Identity & Security**. Under **Identity**, click **Domains**. The Domains page is displayed.
2. If not already selected, select the **Compartment** where you want to create the domain.
3. Click **Create domain**.
4. Enter required information in the Create domain page. See [Creating Identity Domains](#) in the Oracle Cloud Infrastructure documentation.

Create an IAM Group in an Identity Domain

Create a group, such as an instance administrator or read only group, in an identity domain.



This topic applies only to tenancies that use identity domains. See Differences Between Tenancies With and Without Identity Domains.

For more information about IAM groups in identity domains, see [Managing Groups](#) in the Oracle Cloud Infrastructure documentation.

1. Open the navigation menu and click **Identity & Security**. Under **Identity**, click **Domains**. The Domains page is displayed.
2. If not already selected, select the **Compartment** in which the domain where you want to create the group resides.
3. In the **Name** column, click the domain in which you want to create the group for creating and managing instances.
The domain Overview page is displayed.
4. Click **Groups**.
The Groups page for the domain is displayed.

5. Click **Create group**.
6. In the Create group screen, assign a name to the group (for example, `oci-integration-admins`), and enter a description.
7. Click **Create**.

Create an IAM Policy in an Identity Domain

Create a policy to grant permissions to users in a domain group to work with Oracle Integration instances within a specified tenancy or compartment.



This topic applies only to tenancies that use identity domains. See Differences Between Tenancies With and Without Identity Domains.

1. Open the navigation menu and click **Identity & Security**. Under **Identity**, click **Policies**.
2. Click **Create Policy**.
3. In the Create Policy window, enter a name (for example, `IntegrationGroupPolicy`) and a description.
4. In the **Policy Builder**, select **Show manual editor** and enter the required policy statements.

Syntax:

- `allow group domain-name/group_name to verb resource-type in compartment compartment-name`
- `allow group domain-name/group_name to verb resource-type in tenancy`

Example: `allow group admin/oci-integration-admins to manage integration-instance in compartment OICCompartm`

This policy statement allows the `oci-integration-admins` group in the `admin` domain to manage `integration-instance` in compartment `OICCompartm`.

Notes:

- If you omit the domain name, the default domain is assumed.
- When defining policy statements, you can specify either verbs (as used in these steps) or permissions (typically used by power users).
- You can create separate groups for different permissions, such as a group with `read` permission only.
- The `read` and `manage` verbs are most applicable to Oracle Integration. The `manage` verb has the most permissions (`create`, `delete`, `edit`, `move`, and `view`).

Verb	Access
<code>read</code>	Includes permission to view Oracle Integration instances and their details.
<code>manage</code>	Includes all permissions for Oracle Integration instances.

To learn more about policies, see:

- [How Policies Work](#) and [Policy Reference](#) in the Oracle Cloud Infrastructure documentation
- [About IAM Policies for Oracle Integration](#)

5. If desired, you can add a policy to allow members of the group to view message metrics, as described in [View Message Metrics](#).

For example:

```
allow group oci-integration-admins to read metrics in compartment
OICPMCompartm
```

6. If you intend to use custom endpoints, add one or more additional policy statements. Otherwise, skip this step.

Add policies that specify the compartment in which vaults and secrets reside and allow the admin group to manage secrets in it. See [Configure a Custom Endpoint for an Instance](#).

Note that you should specify the resource to return in `resource-type`, as described in [Details for the Vault Service](#). Also note that Oracle Integration requires the `read` verb only but `manage` is recommended if the same group will also be administering the secrets (uploading/lifecycle operations).

Examples:

- `allow group admin/oci-integration-admins to manage secrets in compartment SecretsCompartm`
- `allow group admin/oci-integration-admins to manage vaults in compartment SecretsCompartm`

7. Click **Create**.

The policy statements are validated and syntax errors are displayed.

Create a User in an Identity Domain

Create a user to assign to a group in an Oracle Cloud Infrastructure identity domain.



This topic applies only to tenancies that use identity domains. See [Differences Between Tenancies With and Without Identity Domains](#).

For more information about users, see [Managing Users](#) in the Oracle Cloud Infrastructure documentation.

1. Open the navigation menu and click **Identity & Security**. Under **Identity**, click **Domains**.
The Domains page is displayed.
2. If not already selected, select the **Compartment** in which the domain that contains the group to which you want to add a new user resides.
3. In the **Name** column, click the domain for the group in which you want to create the user.
The domain Overview page is displayed.
4. Click **Users**.
The Users page for the domain is displayed.
5. Click **Create user**.

6. In the Create user screen, enter the user's first and last name, and their username, then select the one or more groups to which the user should be assigned.
7. Click **Create**.
The new user is added to the selected group(s) and has permissions assigned to the group by its policy statement.
8. On the user details page that is displayed, you can edit user information as needed, and reset the user's password.
9. Provide new users with the credentials they need to sign in to their cloud account. Upon signing in, they will be prompted to enter a new password.

Assign Oracle Integration Roles to Groups in an Identity Domain

After an Oracle Integration instance has been created, assign Oracle Integration roles to groups of users to allow them to work with the features of the Oracle Integration instance.



This topic applies only to tenancies that use identity domains. See Differences Between Tenancies With and Without Identity Domains.

Note:

It's a best practice to assign Oracle Integration roles to selected groups rather than individual users.

Oracle Integration provides a standard set of roles, which govern access to features. See [Oracle Integration Service Roles](#). Depending on the Oracle Integration features your organization uses, you may choose to [create groups](#) named for the role they are granted. For example, `OICServiceAdministrators` for the Oracle Integration ServiceAdministrator role.

1. Open the navigation menu and click **Identity & Security**. Under **Identity**, click **Domains**.
The Domains page is displayed.
2. If not already selected, select the **Compartment** in which the domain that contains the group to which you want to assign Oracle Integration roles resides.
3. In the **Name** column, click the domain for the group to which you want to assign roles.
The domain Overview page is displayed.
4. In the navigation pane, click **Oracle Cloud Services**.
The Oracle Cloud Services page is displayed.
5. In the **Name** column, click the Oracle Integration instance for which you want to assign group roles.
The instance details page is displayed.
6. In the navigation pane, click **Application roles**.
7. In the **Application roles** list, locate the role(s) you want to assign to the group. At the far right, click , and select **Assign groups**.
8. On the Assign groups page, select the group to which to assign the role, and click **Assign**.

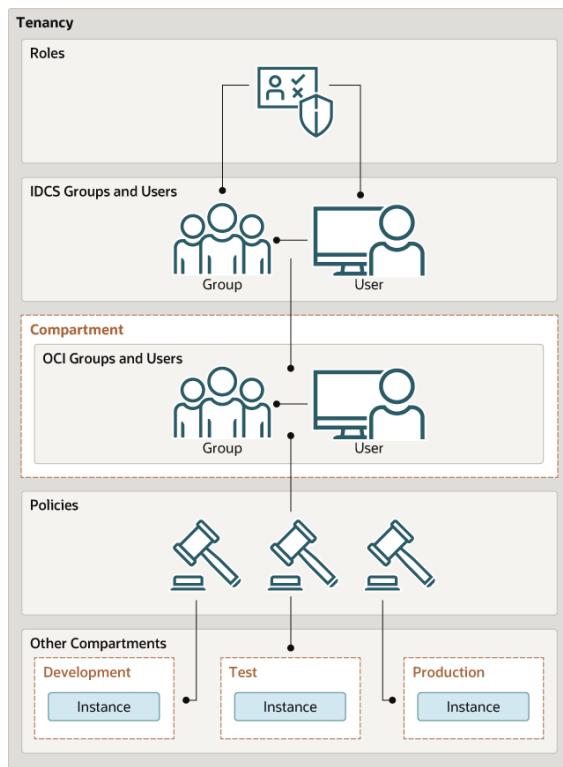
Set Up Users, Groups, and Policies in Cloud Accounts That Do Not Use Identity Domains

For a cloud account in a region not yet updated to use identity domains prior to the creation of the cloud account, users and groups are set up in Oracle Cloud Infrastructure Identity and Access Management (IAM) and Oracle Identity Cloud Service (IDCS).

If you are not sure if your cloud account uses identity domains, see [About Setting Up Users, Groups, and Policies](#).

For more information about Oracle Cloud Infrastructure IAM, IDCS, and the documentation that provides the information you need, see *Documentation to Use for Cloud Identity* in [Overview of IAM](#) in the Oracle Cloud Infrastructure documentation.

Without identity domains, roles are assigned to IDCS groups, then linked to Oracle Cloud Infrastructure IAM groups using federation, as illustrated in the following diagram.



Topics:

- [Understand Oracle Integration Federation](#)
- [Create an IDCS Group](#)
- [Create an IAM Group](#)
- [Create an IAM Policy](#)
- [Map the IDCS and IAM Groups](#)
- [Create IDCS Users](#)

- [Create IAM Users](#)
- [Assign Oracle Integration Roles to Groups](#)
- [Configure Multiple Identity Stripes for Oracle Integration Generation 2](#)

Understand Oracle Integration Federation

If your cloud account does not use identity domains, Oracle Cloud Infrastructure Identity and Access Management (IAM) must be federated with Oracle Identity Cloud Service (IDCS) for your tenancy.



This topic applies only to tenancies that do not use identity domains. See [Differences Between Tenancies With and Without Identity Domains](#).

User federation refers to linking a user's identity and attributes across multiple identity management systems. Oracle Integration federation means that identities are linked in IDCS and Oracle Cloud Infrastructure Identity and Access Management (IAM).

Oracle Integration uses both Oracle Identity Cloud Service (IDCS) and Oracle Cloud Infrastructure Identity and Access Management (IAM) to manage users and groups:

- Create and manage users in Oracle Identity Cloud Service. By default, most tenancies are federated with Oracle Identity Cloud Service. For more information about Oracle Identity Cloud Service, see [Understanding Administrator Roles in Administering Oracle Identity Cloud Service](#).
- Manage permissions using policies in Oracle Cloud Infrastructure's IAM service.

For background information on federation with Oracle Identity Cloud Service, see [Federating with Identity Providers](#) and [Federating with Oracle Identity Cloud Service](#).

Whether your tenancy needs federation depends on several factors, such as when your cloud account was created and the Oracle Integration version you're provisioning. Your tenancy may be:

- **Already fully federated:** Nearly all accounts in regions that have not yet been updated to use identity domains fall into this category. You'll follow standard steps to set up users and groups, as described in the topics in this section.
- **Mostly federated:** If you have an older account that was created before 21 December 2018, you may need to complete a final federation step. You'll follow steps to set up users and groups, as described in the topics in this section. At the mapping step ([Map the IDCS and IAM Groups](#)), you'll be asked to enter information.
- **Needing federation:** If you're configuring Oracle Integration with a government SKU in a commercial data center, you'll likely need to perform manual federation steps as part of setting up users and groups. See [Manually Federate Your Tenancy](#).

Not sure about your federation? See [Is My Tenancy Federated Between Oracle Cloud Infrastructure IAM and Oracle Identity Cloud Service?](#)

Create an IDCS Group

You can create Oracle Identity Cloud Service groups for later mapping them to Oracle Cloud Infrastructure Identity and Access Management identities.



This topic applies only to tenancies that do not use identity domains. See [Differences Between Tenancies With and Without Identity Domains](#).

1. Open the navigation menu and click **Identity & Security**. Under **Identity**, click **Federation**.
The Federation screen is shown, and includes the identity provider, called **OracleIdentityCloudService**. This is the default federation between the Oracle Identity Cloud Service stripe and the OCI tenancy in a cloud account.
2. Select the **OracleIdentityCloudService** link to view the default Oracle Identity Cloud Service identity federation.
3. Select **Groups** from the **Resources** options.
4. Click **Create IDCS Group**.
5. Enter a name (for example, `idcs-integration-admins`).
6. Click **Create**.

Create an IAM Group

Create an instance administrator group in Oracle Cloud Infrastructure IAM and map it to your previously created IDCS group.

 **This topic applies only to tenancies that do not use identity domains.** See Differences Between Tenancies With and Without Identity Domains.

1. Open the navigation menu and click **Identity & Security**. Under **Identity**, click **Groups**.
The Groups screen is shown.
2. Click **Create Group**.
3. In the Create Group screen, assign a name to the group that differentiates it from the IDCS group (for example, `oci-integration-admins`), and enter a description.
4. Click **Create**.

Create an IAM Policy

Create a policy to grant permission to the users in a group to work with Oracle Integration instances within a specified tenancy or compartment.

 **This topic applies only to tenancies that do not use identity domains.** See Differences Between Tenancies With and Without Identity Domains.

1. Open the navigation menu and click **Identity & Security**. Under **Identity**, click **Policies**.
2. Click **Create Policy**.
3. In the Create Policy window, enter a name (for example, `IntegrationGroupPolicy`) and a description.
4. In the **Policy Builder**, select **Show manual editor** and enter the required policy statements.

Syntax:

- ```
allow group group_name to verb resource-type in compartment compartment-name
```

```
allow group group_name to verb resource-type in tenancy
```

**Example:** `allow group oci-integration-admins to manage integration-instance in compartment OICCompartmen`

This policy statement allows the `oci-integration-admins` group in the `admin` domain to manage `instance` `integration-instance` in compartment `OICCompart`.

 **Notes:**

- If you omit the domain name, the default domain is assumed.
- When defining policy statements, you can specify either verbs (as used in these steps) or permissions (typically used by power users).
- You can create separate groups for different permissions, such as a group with `read` permission only.
- The `read` and `manage` verbs are most applicable to Oracle Integration. The `manage` verb has the most permissions (`create`, `delete`, `edit`, `move`, and `view`).

| Verb                | Access                                                                      |
|---------------------|-----------------------------------------------------------------------------|
| <code>read</code>   | Includes permission to view Oracle Integration instances and their details. |
| <code>manage</code> | Includes all permissions for Oracle Integration instances.                  |

To learn more about policies, see:

- [How Policies Work](#) and [Policy Reference](#) in the Oracle Cloud Infrastructure documentation
- [About IAM Policies for Oracle Integration](#)

5. If desired, you can add a policy to allow members of the group to view message metrics, as described in [View Message Metrics](#).

For example:

```
allow group oci-integration-admins to read metrics in compartment
OICPMCompart
```

6. If you intend to use custom endpoints, add one or more additional policy statements. Otherwise, skip this step.

Add policies that specify the compartment in which vaults and secrets reside and allow the `admin` group to manage secrets in it. See [Configure a Custom Endpoint for an Instance](#).

Note that you should specify the resource to return in `resource-type`, as described in [Details for the Vault Service](#). Also note that Oracle Integration requires the `read` verb only but `manage` is recommended if the same group will also be administering the secrets (uploading/lifecycle operations).

**Syntax:** `allow group group-name to manage resource-type in compartment secrets-compartment`

**Examples:**

- `allow oci-integration-admins to manage secrets in compartment SecretsCompart`
- `allow oci-integration-admins to manage vaults in compartment SecretsCompart`

7. Click **Create**.

The policy statements are validated and syntax errors are displayed.

## Map the IDCS and IAM Groups

Map your instance administrator group in Oracle Cloud Infrastructure IAM to your previously created IDCS group.

 **This topic applies only to tenancies that do not use identity domains.** See Differences Between Tenancies With and Without Identity Domains.

1. Open the Oracle Cloud Infrastructure navigation menu and click **Identity & Security**. Under **Identity**, click **Federation**.
2. On the Federation page, select the **OracleIdentityCloudService** link.
3. From the **Resources** options, choose **Group Mapping**.
4. Click **Edit Mapping**.
5. In the Edit Identity Provider dialog, click **Add Mapping** at the bottom.
  - a. If the following dialog appears prompting you to provide credentials, enter this information from the COMPUTEBAREMETAL IDCS application in your IDCS account. This dialog indicates that your tenancy is mostly federated and requires only this final step. See [Understand Oracle Integration Federation](#). (If you aren't able to locate this information, [file a service request](#) to get help from Oracle Support.)
  - b. Click **Continue**.
6. Select your IDCS group in the **Identity Provider Group** field and your Oracle Cloud Infrastructure group in the **OCI Group** field.
7. Click **Submit**.

## Create IDCS Users

You can create Oracle Identity Cloud Service users to add to Oracle Cloud Infrastructure IAM groups for specific access. To simplify access and permission management, grant permissions to groups instead of directly to users.

 **This topic applies only to tenancies that do not use identity domains.** See Differences Between Tenancies With and Without Identity Domains.

1. Open the Oracle Cloud Infrastructure navigation menu and click **Identity & Security**. Under **Identity**, click **Federation**.
2. On the Federation page, select the **OracleIdentityCloudService** link to view the default Oracle Identity Cloud Service federation.
3. Click **Create IDCS User**.
4. Complete the fields to identify the user. In the **Groups** field, select the IDCS group you want this user to belong to.
5. Click **Create**.

A message is displayed that the user was created. Optionally, click the **Email Password Instructions** button to email a change password link to the new user.

The new user is displayed in the table of users. Notice that the user's federation was automatically triggered if the user was added to a federated IDCS group, and is displayed in the **OCI Synced User** column.

## Create IAM Users

You can create Oracle Cloud Infrastructure Identity and Access Management (IAM) users for less typical user scenarios, such as emergency administrator access.



**This topic applies only to tenancies that do not use identity domains.** See Differences Between Tenancies With and Without Identity Domains.

For more information about IAM users, see [Managing Users](#) in the Oracle Cloud Infrastructure documentation.

1. Open the navigation menu and click **Identity & Security**. Under **Identity**, click **Users**.
2. Click **Create User**.
3. In the resulting page, select **IAM User**.
4. Fill the required fields, and click **Create**.
5. Add the user to an IAM group with specific access.
  - a. Under **Identity**, select **Groups**.
  - b. From the groups list, click the group to which you want to add the user.
  - c. Click **Add User to Group**.
  - d. In the Add User to Group dialog, select the user you created from the drop-down list in the **Users** field, and click **Add**.
6. Create the user's password.
  - a. From the Group Members table on the Group Details screen, select the user you added.
  - b. Click **Create/Reset Password**. The Create/Reset Password dialog is displayed with a one-time password listed.
  - c. Click **Copy**, then **Close**.
7. Provide read only users the information they need to sign in.
  - a. Copy the password in an email to the user.
  - b. Instruct the user to sign in using the **User Name** and **Password** fields.

opadev

Change tenancy

Single Sign-On (SSO)

We have detected that your tenancy has been federated to another Identity Provider.

Select your Identity Provider below.

oracleidentitycloudservice

Continue

Oracle Cloud Infrastructure Direct Sign-In ⓘ

This login is uncommon for federated accounts. If you have questions, please review the FAQ or contact your tenancy administrator.

User Name

Password

Sign In

Forgot Password?

c. Upon signing in, the user will be prompted to change the password.

## Assign Oracle Integration Roles to Groups

After an Oracle Integration instance has been created, assign Oracle Integration roles to groups of users in Oracle Identity Cloud Service to allow them to work with the features of the Oracle Integration instance.

 **This topic applies only to tenancies that do not use identity domains.** See Differences Between Tenancies With and Without Identity Domains.

 **Note:**

It's a best practice to assign Oracle Integration roles to selected groups rather than individual users.

Oracle Integration provides a standard set of roles, which govern access to features. See [Oracle Integration Service Roles](#). Depending on the Oracle Integration features your organization uses, you may choose to [create groups](#) named for the role they are granted. For example, `OICServiceAdministrators` for administration permissions.

1. Open the navigation menu and click **Identity & Security**. Under **Identity**, click **Federation**.
2. On the Federation page, select the **OracleIdentityCloudService** link to view the default Oracle Identity Cloud Service identity federation.
3. On the Identity Provider Details page, select **Groups** from the **Resources** options.
4. From the table, select an IDCS group to grant the users in the group access.
5. On the Group Details page, click **Manage Roles**.

6. On the Manage Roles page, locate your integration service (Integrationauto for Oracle Integration, Integrationsub for Oracle Integration for SaaS). At the far right, click , and select **Manage instance access**.

The Manage Access screen lists instances. Note that you must assign roles for each instance individually.

- Instance names follow this format: *displayname-tenancyid-regionid*
- Instance URLs follow this format: <https://displayname-tenancyid-regionid.integration.ocp.oraclecloud.com/ic/home/>

7. From the Manage Access options, select instance roles for the group under one or more specified instances.
8. Click **Update Instance Settings**, then **Apply Role Settings**.

## Configure Multiple Identity Stripes for Oracle Integration Generation 2

For Oracle Integration Generation 2, the primary (primordial) stripe is automatically federated using preconfigured groups. However, you can create separate environments for a single cloud service or application (for example, create one environment for development and one for production), where each environment has a different identity and security requirements. Implementing one or more secondary stripes enables you to create and manage multiple instances of Oracle Identity Cloud Service to protect your applications and Oracle Cloud services.

 **Note:**

Once provisioned, you cannot change the Oracle Identity Cloud Service stripe or change the association of the Oracle Integration instance to another IAM domain.

 **This topic applies only to tenancies that do not use identity domains.** See Differences Between Tenancies With and Without Identity Domains.

You can manually federate one or more secondary stripes with Oracle Cloud Infrastructure using SAML IDP federation in which multiple Oracle Identity Cloud Service stripes are associated with the same cloud account. Note that the account owner administers both primary and secondary stripes, but identities within the stripes are isolated from each other.

For benefits to using multiple Oracle Identity Cloud Service instances, see [About Multiple Instances](#).

Follow the steps below to manually federate a secondary stripe for your cloud account. You must be the account owner.

1. [Define a Stripe Naming Convention](#)
2. [Create an IDCS Group for Secondary Stripe Users](#)
3. [Create an OAuth Client in the Secondary Stripe](#)
4. [Create an Oracle Cloud Infrastructure Group for Secondary Stripe Users](#)
5. [Create the Federation and Its Group Mapping](#)
6. [Create an Oracle Cloud Infrastructure Policy for Federated Users to Create Instances](#)
7. [Provide Access to a Federated Stripe in the Oracle Cloud Infrastructure Console Group for Secondary Stripe Users](#)

## 8. Create Oracle Integration Instances in the Secondary Stripe Compartment

### Define a Stripe Naming Convention

As a best practice, define a `<stripename>` for all the entities you'll create specific to the stripe. Uniquely identifying configurations associated with a stripe is important, especially when multiple stripes are configured.

In the sections that follow, you'll use `stripename` in these entities:

| Entity            | Naming convention                                                                                                                |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------|
| IDCS group        | <code>stripename_administrators</code>                                                                                           |
| OCI group         | <code>oci_stripename_administrators</code>                                                                                       |
| Compartment       | <code>stripename_compartment</code>                                                                                              |
| Identity Provider | <code>stripename_service</code>                                                                                                  |
| Policy            | <code>stripename_adminpolicy</code>                                                                                              |
| Policy Statement  | <code>allow group oci_stripename_administrators to manage integration-instances in compartment<br/>stripename_compartment</code> |

### Create an IDCS Group for Secondary Stripe Users

In IDCS, create a group in the secondary stripe and add users from the secondary stripe to the group.

1. Add a group in the secondary stripe, and name it `stripename_administrators`. See [Define a Stripe Naming Convention](#). For example, name it `stripe2_administrators`. Click **Finish**.

For more information, see [Create Groups in Administering Oracle Identity Cloud Service](#).

These administrators will be granted permission to create Oracle Integration instances. This IDCS group will be mapped with an Oracle Cloud Infrastructure group.

2. Add users from the secondary stripe to the group.

### Create an OAuth Client in the Secondary Stripe

Create an IDCS confidential application that uses OAuth client credentials and is assigned the IDCS domain administrator role. You must create a confidential application per secondary stripe.

1. As an IDCS administrator, sign in to the secondary IDCS admin console.
2. Add a confidential application.
  - a. Navigate to the **Applications** tab.
  - b. Click **Add**.
  - c. Choose **Confidential Application**.
  - d. Name the application `Client_Credentials_For_SAML_Federation`.
  - e. Click **Next**.

ORACLE® Identity Cloud Service

## Add Confidential Application

1 Details    2 Client    3 Resources    4 Authorization

App Details

\* Name: Client\_Credentials\_For\_SAML\_Federal  
Description: OAuth Client Credentials for SAML IDP federation with OCI tenancy

Application Icon: Upload

Application URL:

Custom Login URL:

Custom Logout URL:

Custom Error URL:

Linking callback URL:

3. Configure client settings.
  - a. Click **Configure this application as a client now**.
  - b. Under **Authorization**, select **Client Credentials**.

Add Confidential Application

Back

1 Details    2 Client    3 Resources

Configure this application as a client now     Skip for later

Authorization

Allowed Grant Types

Resource Owner     Client Credentials     JWT Assertion     SAML2 Assertion

- c. Under **Grant the client access to Identity Cloud Service Admin APIs**, click **Add** and select the app role **Identity Domain Administrator**.

| Grant the client access to Identity Cloud Service Admin APIs |           |
|--------------------------------------------------------------|-----------|
| <a href="#">+ Add</a>                                        |           |
| App Roles                                                    | Protected |
| Identity Domain Administrator                                | No        |

d. Click **Next** twice.

4. Click **Finish**. Once the application is created, note its client ID and client secret. You'll need this information in upcoming steps for federation.

Client\_Credentials\_For\_SAML\_Federation

OAuth Client Credentials for SAML IDP federation with OCI tenancy

Details Configuration Users Groups

App Details

Application Added

Client ID: 00000000-0000-0000-0000-000000000000

Client Secret: 00000000-0000-0000-0000-000000000000

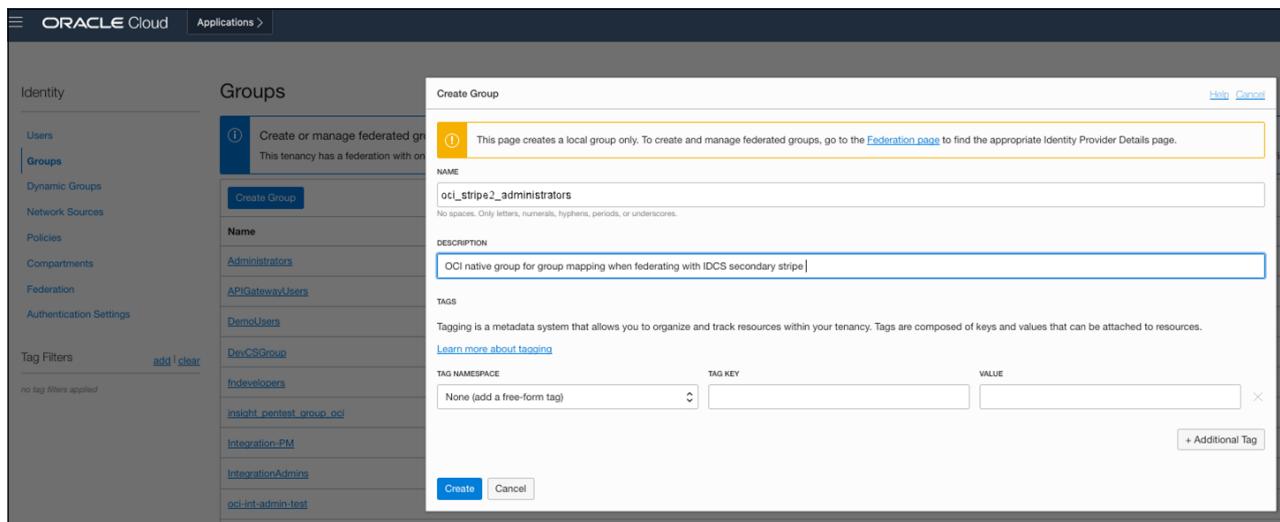
Close

5. Click **Activate** and confirm activating the application.

## Create an Oracle Cloud Infrastructure Group for Secondary Stripe Users

This group is needed because the Oracle Cloud Infrastructure SAML IDP federation requires group mapping for federating users from the federated IDP (IDCS), and OCI native group membership is required for defining and granting Oracle Cloud Infrastructure permissions (policies) for federated users.

1. In the Oracle Cloud Infrastructure Console, open the navigation menu and click **Identity & Security**. Under **Identity**, click **Groups**.  
This Oracle Cloud Infrastructure group will be mapped with the IDCS group you created.
2. Create a group and name it `oci_stripename_administrators`. For example, name it `oci_stripe2_administrators`.



## Create the Federation and Its Group Mapping

Now that you have the IDCS and Oracle Cloud Infrastructure groups created and client information needed, create the IDCS identity provider and map the groups.

1. Sign in to the Oracle Cloud Infrastructure console. Select the identity domain of the primordial stripe (identitycloudservice) and enter its user credentials.

Keep in mind that group mapping for a secondary stripe uses the primordial stripe user sign in. This is important, since adding multiple stripes adds multiple options to this dropdown.

2. Open the navigation menu and click **Identity & Security**, then **Federation**.
3. Click **Add Identity Provider**.
4. In the screen displayed, complete the fields as shown below.

| Field                                  | Entry                                                                                                                                                                                                           |
|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Name                                   | <stripename>_service                                                                                                                                                                                            |
| Description                            | Federation with IDCS secondary stripe                                                                                                                                                                           |
| Type                                   | Oracle Identity Cloud Service                                                                                                                                                                                   |
| Oracle Identity Cloud Service Base URL | Enter this URL using the format:<br><a href="https://idcs-xxxx.identity.oraclecloud.com">https://idcs-xxxx.identity.oraclecloud.com</a><br>Replace the <idcs-xxxx> domain part with your secondary IDCS stripe. |
| Client ID/Client Secret                | Enter this information that you created in the secondary stripe and noted during <a href="#">Create an OAuth Client in the Secondary Stripe steps</a> .                                                         |
| Force Authentication                   | Select this option                                                                                                                                                                                              |

5. Click **Continue**.
6. Map the IDCS secondary stripe and OCI groups you previously created.

Map the IDCS secondary stripe group (created in [Create an IDCS Group for Secondary Stripe Users](#)) and the OCI group (created in [Create an Oracle Cloud Infrastructure Group for Secondary Stripe Users](#)).

7. Click **Add Provider**.

The secondary stripe federation is complete. Notice that the group mapping is displayed.

| Identity Provider Group                         | OCI Group                 |
|-------------------------------------------------|---------------------------|
| <input type="checkbox"/> stripes_administrators | oci_stripe_administrators |

8. Verify the secondary stripe, and configure visibility for secondary stripe administrators and users.

- The tenant administrator can see all federated IDCS stripes in the OCI console:
- The secondary stripe administrator and all other secondary stripe users will not see any stripes under federation. To resolve that, see [Provide Access to a Federated Stripe in the Oracle Cloud Infrastructure Console Group for Secondary Stripe Users](#).

## Create an Oracle Cloud Infrastructure Policy for Federated Users to Create Instances

With the federation done, set up Oracle Cloud Infrastructure policies that allow federated users from the secondary IDCS stripe to create Oracle Integration instances. As a common pattern, the policy is scoped to a compartment.

1. Create a compartment where Oracle Integration instances for the secondary IDCS stripe can be created. Name the compartment `stripename_compartment`.  
For example, create a compartment named `stripe2_compartment`.
2. Create a policy that will allow federated users to create Oracle Integration instances in the compartment. Name the policy `stripename_adminpolicy` (for example, `stripe2_adminpolicy`).

Under **Policy Builder**, select **Show manual editor**.

- **Syntax:** `allow group stripename_administrators to verb resource-type in compartment stripename_compartment`
- **Policy:** `allow group oci_stripe2_administrators to manage integration-instances in compartment stripe2_compartment`

This policy allows a user who is a member of the group in the policy to create an Oracle Integration instance (**integration-instance**) in the compartment named **stripe2\_compartment**.

## Provide Access to a Federated Stripe in the Oracle Cloud Infrastructure Console Group for Secondary Stripe Users

Perform additional steps to enable the secondary stripe administrator and all other secondary stripe users to see stripes under federation.

1. In Oracle Identity Cloud Service, create a group called `stripe2_federation_administrators`.
2. Add users to the group that you want to be able to see the federation and to create users and groups in the Oracle Cloud Infrastructure console in that stripe.
3. In the Oracle Cloud Infrastructure console, using the primary stripe user with the correct permission, create an Oracle Cloud Infrastructure group called `oci_stripe2_federation_administrators`.
4. Map the `stripe2_federation_administrators` and `oci_stripe2_federation_administrators` groups.
5. Using the following statement examples, define a policy that grants access to federated stripes.

Several of the examples show how to grant access to a specific federated stripe, by using a `where` clause that identifies the secondary stripe. You can get the federation's OCID from the federation view in the Oracle Cloud Infrastructure console.

| Allows secondary stripe administrators to....                             | Policy statement                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Create groups (use)                                                       | <pre>allow group oci_stripe2_federation_administrators to use groups in tenancy</pre>                                                                                                                                                                                                                                                                                                                                   |
| List the identity providers in the federation (inspect)                   | <pre>allow group oci_stripe2_federation_administrators to inspect identity-providers in tenancy</pre> <p>Note that if the secondary stripe admins are required to create groups, this policy is required when a <code>where</code> clause is included.</p>                                                                                                                                                              |
| Access a specific federated stripe (use)                                  | <pre>allow group oci_stripe2_federation_administrators to use identity-providers in tenancy where target.identity- provider.id="ocid1.saml2idp.oc1..aaaaaaaaaa..."</pre>                                                                                                                                                                                                                                                |
| Manage ALL or ONLY a specific secondary stripe identity provider (manage) | <ul style="list-style-type: none"> <li>• <b>ALL:</b> <pre>allow group oci_stripe2_federation_administrators to manage identity-providers in tenancy</pre> </li> <li>• <b>ONLY specific secondary stripe identity provider:</b> <pre>allow group oci_stripe2_federation_administrators to manage identity-providers in tenancy where target.identity-provider.id = "ocid1.saml2idp.oc1..aaaaaaaaaa..."</pre> </li> </ul> |

When you sign in as a user in the above Oracle Identity Cloud Service group, you can create users and groups in the Oracle Cloud Infrastructure console and assign permissions as you would in a primary stripe.

## Additional information about where clauses

Suppose you define a policy for a group (as in the example shown below) that uses the manage verb with a where clause restricting it to a specific identity provider (ocid).

Example policy:

```
allow group OCISecStripeAdmin to manage identity-providers in tenancy where
target.identity-provider.id='ocid1.sam12idp.ocl..aaaaaaaa...'
```

When a user from the group logs into the Oracle Cloud Infrastructure Console and navigates to the Federation page, the following message appears within the table: Authorization failed or requested resource not found.

Adding the following additional policy enables users in the group to navigate to the same page and see the identity providers. They can inspect both, but are only able to see the group mappings (read) of the allowed identity provider:

Additional example policy: allow group OCISecStripeAdmin to inspect identity-providers in tenancy

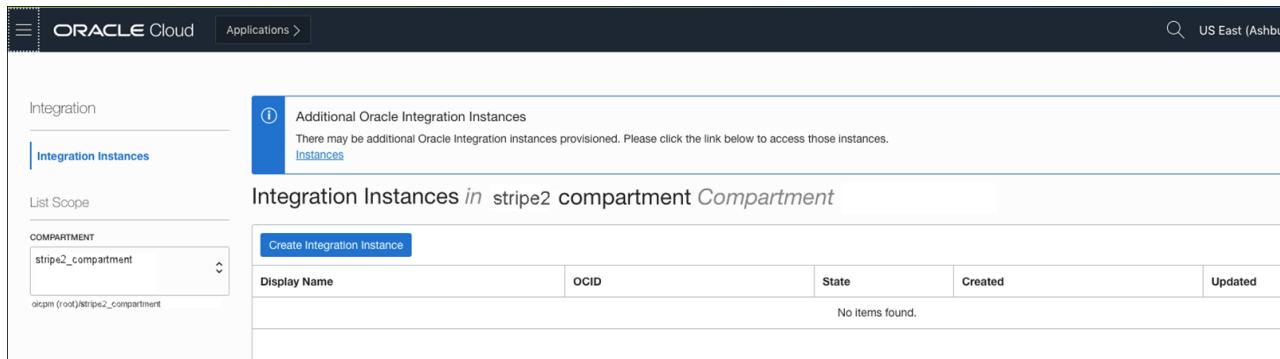
## Create Oracle Integration Instances in the Secondary Stripe Compartment

With federation and Oracle Cloud Infrastructure policies defined, federated users can sign into the Oracle Cloud Infrastructure Console and create Oracle Integration instances.

1. Sign in as a federated user from the secondary stripe.

Users will need to select the secondary stripe in the Identity Provider field (`idcs-secondary-stripe-service`, in this case).

2. Authorized administrators can create Oracle Integration instances in the specified compartment (`idcs-secondary-stripe-compartment`, in this case).



The screenshot shows the Oracle Cloud Infrastructure console with the following details:

- Header:** ORACLE Cloud Applications > US East (Ashbu)
- Left Sidebar:**
  - Integration
  - Integration Instances** (selected)
  - List Scope
  - COMPARTMENT: stripe2\_compartment
  - ocipm (root)@stripe2\_compartment
- Right Content Area:**
  - Additional Oracle Integration Instances:** There may be additional Oracle Integration instances provisioned. Please click the link below to access those instances. [Instances](#)
  - Integration Instances in stripe2 compartment Compartment:**
    - Create Integration Instance** button
    - Table header: Display Name, OCID, State, Created, Updated
    - Table body: No items found.

## Oracle Integration Service Roles

Oracle Integration predefined roles govern access to various Oracle Integration features.

For details on what you can do in each Oracle Integration feature by service role, see [Oracle Integration Roles and Privileges](#).

The following table lists the predefined roles available in Oracle Integration, and the general tasks that users assigned the roles can perform. You can assign one or more of these roles to Oracle Integration users and groups.

| Oracle Integration                                                                                                                                                                                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ServiceAdministrator                                                                                                                                                                                    | A user with the ServiceAdministrator role is a super user who can manage and administer the features provisioned in an Oracle Integration instance.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| ServiceDeveloper                                                                                                                                                                                        | A user with the ServiceDeveloper role can develop the artifacts specific to the features provisioned in an Oracle Integration instance. For example, in Integrations the user can create integrations, and in Processes the user can create process applications and decision models.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| ServiceMonitor                                                                                                                                                                                          | <p>A user with the ServiceMonitor role can monitor the features provisioned in an Oracle Integration instance. For example, the user can view instances and metrics, find out response times, and track whether instance creation completed successfully or failed.</p> <p>This role provides privileges for users with limited knowledge of Oracle Integration, but with high-level knowledge of monitoring it. This user role does not grant permissions to change anything.</p> <p>The ServiceMonitor role does not have any privileges in Insight, File Server, and Visual Builder.</p>                                                                                                                                                                                                                                                                                    |
| ServiceDeployer                                                                                                                                                                                         | <p>A user with the ServiceDeployer role can publish the artifacts developed in a feature.</p> <p>The ServiceDeployer role does not have any privileges in Integrations, Insight, File Server, B2B for Oracle Integration, and Visual Builder.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| ServiceUser                                                                                                                                                                                             | <p>A user with the ServiceUser role has privileges to utilize only the basic functionality of a feature such as access to the staged and published applications.</p> <p>For example, in Integrations the user can navigate to resource pages (such as integrations and connections) and view details, but can't edit or modify anything. The user can also run integrations and start process applications.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| ServiceEndUser<br><br>The ServiceEndUser role is available only for new instances created using version 22.2 or later. This role cannot be granted to existing instances created prior to version 22.2. | <p>A user with the ServiceEndUser role has the same privileges as the ServiceUser role, but can access only Processes and Insight features in Oracle Integration. The ServiceEndUser role does not have any privileges in Integrations, File Server, B2B for Oracle Integration, Visual Builder, adapters, recipes, or accelerators.</p> <p>In Processes, a user with the ServiceEndUser role can access the My Tasks page in the Processes runtime environment (Workspace) and also Processes runtime APIs and CCA components. This user cannot access the Administration UI in Processes runtime environment or the Processes design time environment.</p> <p>In Insight, a user with the ServiceEndUser role can view, create, manage, edit, and delete Insight dashboards through the Consoles page. This user does not have access to models through the Models page.</p> |
| ServiceInvoker                                                                                                                                                                                          | <p>A user with the ServiceInvoker role can invoke any integration flow in an Oracle Integration instance that is exposed through SOAP/REST APIs or a scheduled integration. See <a href="#">Run an Integration Flow</a>. A user with ServiceInvoker role cannot:</p> <ul style="list-style-type: none"> <li>• Navigate to the Oracle Integration user interface or perform any administrative actions in the user interface.</li> <li>• Invoke any of the documented Oracle Integration REST APIs. See <a href="#">About the REST APIs</a>.</li> </ul> <p>The ServiceInvoker role does not have any privileges in Processes, Insight, File Server, B2B for Oracle Integration, and Visual Builder.</p>                                                                                                                                                                         |
| ServiceViewer                                                                                                                                                                                           | <p>A user with the ServiceViewer role can navigate to all Integration resource pages (for example, integrations, connections, lookups, libraries, and so on) and view details. This user cannot edit any resources or navigate to the administrative setting pages.</p> <p>The ServiceViewer role does not have any privileges in Processes, Insight, File Server, and Visual Builder.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

In Oracle Integration, when you assign a role to a user, the user is granted that role for all Oracle Integration features provisioned on an instance. For example, when you assign the ServiceDeveloper role to a user for an instance provisioned with the Integrations, Processes, and Visual Builder feature set, the user gets developer permissions on each of these features. Further, each role grants different privileges for different features to the same user. Depending

on the feature the user is accessing, the user can perform different tasks. For example, a user assigned the ServiceDeveloper role can develop process applications in Processes, whereas the same user can design integrations in Integrations. Note that not all Oracle Integration predefined roles are available in all features.

For details on what you can do in each Oracle Integration feature by service role, see [Oracle Integration Roles and Privileges](#).

## Use the Service Integration Account with No Password Expiration

Oracle Integration provides a service integration account in which the password does not expire. The service integration account consists of a generic application role created with specific predefined rules. You must use this account to install the connectivity agent.

### About the Service Integration User Account

You can use the service integration user account only with the Basic Authentication security policy. Continuous use of this security policy by clients increases the performance load on the authentication service (Oracle Identity Cloud Service) because it must keep validating the same credentials repeatedly. The increased performance load is dependent on two factors.

- Repeated requests to the Oracle Identity Cloud Service server for password authenticator/asserter for the same basic authentication credentials.
- The Oracle Identity Cloud Service password policy requires accessing the ID store for each of the requests.

To reduce the performance load caused by repeated requests, you can use the service integration account without password expiration.

With Basic Authentication, you can use generic credentials: the client ID (that ends with `_BASICAUTH`) and the associated client secret. This section describes how to create these credentials.

### Task 1. Get the application ID of the Oracle Integration instance

If your tenancy uses identity domains, an identity domain administrator must perform this task. If your tenancy doesn't use identity domains, an Oracle Identity Cloud Service administrator must perform this task.

1. Navigate to the Oracle Cloud Services page.

Your steps depend on whether your tenancy uses identity domains.

- Complete the following tasks if your tenancy uses identity domains:
  - a. Open the Oracle Cloud Infrastructure Console.
  - b. Open the navigation menu and click **Identity & Security**.
  - c. Under **Identity**, click **Domains**.
  - d. In the table, select the name of the domain.  
or  
Below the table, select the default domain.
- Complete the following tasks if your tenancy doesn't use identity domains:
  - e. In the menu on the left, below Identity domain, select **Oracle Cloud Services**.

- a. Open Oracle Identity Cloud Service.
  - b. Open the navigation menu and click **Oracle Cloud Services**.
2. Find the Oracle Integration instance in the list.  
Instances are identified by their service instance IDs. If you're not sure of the service instance ID, sign in to Oracle Integration, open the About dialog box, and check the Service instance field. You can paste some or all of this value into the search box that appears above the table.
3. Click the **Name** of the service.
4. Next to the **Application ID** field, click **Copy**, and paste the value somewhere you can reference it later, such as a text file.

Use this value in place of the \${OIC\_APP\_ID} value in the commands on this page.

 **Note:**

For ease of use, Oracle recommends adding the parameters described in this section as environment variables on your system. For example:

```
export OIC_APP_ID=parameter_value
. . .
. . .
```

## Task 2. Create and Activate the Service Administrator Application

1. Navigate to the Applications page.

Your steps depend on whether your tenancy uses identity domains.

- If your tenancy uses identity domains: In the Oracle Cloud Infrastructure Console, in the left menu below Identity domain, select **Applications**.
- If your tenancy doesn't use identity domains: In Oracle Identity Cloud Service, open the navigation menu and click **Applications**.

2. Create and configure a confidential application.

Your steps depend on whether your tenancy uses identity domains.

- Perform the following steps if your tenancy uses identity domains:
  - a. On the Applications page, click **Add**.
  - b. In the Add application pop-up, select **Confidential Application**, then click **Launch workflow**.  
The Add Confidential Application wizard is displayed.
  - c. On the first page of the wizard, enter a value in the **Name** field, and click **Next**.
  - d. On the second page of the wizard, complete the following fields, and click **Next**:
    - **Client configuration:** Select **Configure this application as a client now**.  
Additional options appear on the page.
    - Below Authorization, select **Client credentials** and **Refresh token**.
    - Below Token issuance policy, select **Add app roles**.

- Below App roles, click **Add roles**. In the Add app roles panel, select **Identity Domain Administrator**, and click **Add**.
  - e. On the third page of the wizard, click **Finish**.
- Perform the following steps if your tenancy doesn't use identity domains:
  - a. On the Applications page, click **Add**.
  - b. In the Add application pop-up, select **Confidential Application**.  
The Add Confidential Application wizard is displayed.
  - c. On the first page of the wizard, enter a value in the **Name** field, and click **Next**.
  - d. On the second page of the wizard, complete the following fields, and click **Next**:
    - Select **Configure this application as a client now**.
    - In the Authorization section, next to Allowed Grant Types, select **Client credentials** and **Refresh token**.
    - In the Token Issuance Policy section, below **Grant the client access to Identity Cloud Service Admin APIs**, click **Add**.
    - In the Add App Role pop-up, select **Identity Domain Administrator**, and click **Add**.

 **Tip:**

Type identity in the search box above the table to find the role easily.

- e. Click **Next** until you reach the last page of the wizard, and then click **Finish**.

The application is created, and the application information page appears.

**3. Click **Activate**, then **Activate application**.**

If you don't activate the service administrator application, the following error appears when you configure the service integration application.

The OAuth Client app is inactive or the OAuth Client facet is not enabled for app clientId

**4. On the application information page, copy the following values and paste them somewhere you can reference it later, such as a text file:**

- **Application ID**: Use this value in place of the  `${SA_APP_ID}` value in the commands on this page.
- **Client ID** (scroll to the General Information section to find this field): Use this value in place of the  `${SA_CLIENT_ID}` value in the commands on this page.
- **Client secret** (scroll to the General Information section to find this field, and click **Show secret**): Use this value in place of the  `${SA_CLIENT_SECRET}` value in the commands on this page.

**Task 3. Configure the Service Integration Application**

1. In the left navigation pane, click **Oracle Cloud Services**.
2. Select your Oracle Integration instance.
3. On the **Details** tab, copy the **Application ID** value. You can also copy this value from the end of the browser URL.

## 4. Create the service integration application.

a. Get an access token to create an application (for this example, referred to as  `${SA_ACCESS_TOKEN}`).

- Use the following command to get the access token request.

In this command and other commands that contains the `IDCS_HOST` entry, replace `IDCS_HOST` with the value in the **Domain URL** field, which you find on Overview page and then the Domain information tab for the domain.

```
curl -X POST https://${IDCS_HOST}/oauth2/v1/token -u ${SA_CLIENT_ID}:${SA_CLIENT_SECRET}
-d
'grant_type=client_credentials&scope=urn%3Aopc%3Aidm%3A__myscopes__'
```

The access token is valid for one hour.

- Copy the access token response:

```
{
 "access_token": "eyJ4NXQjUzI1Nii6IlVFQ1RyX25Ram9XYk9.....XV-2ei4p
AUYY9aw66k_qL3b842qHw",
 "token_type": "Bearer",
 "expires_in": 3600
}
```

b. Create an application with the `_BASICAUTH` suffix using the above access token. For this example, `OICTEST_BASICAUTH` is used.
 **Note:**

Ensure that the entire command appears as a single line without breaks. You can use a tool such as Postman to ensure that the command is on a single line.

- Create an application request. Ensure that you replace `IDCS_HOST` with your Oracle Identity Cloud Service host value.

```
curl -X POST https://${IDCS_HOST}/admin/v1/Apps -H 'Authorization:
Bearer ${SA_ACCESS_TOKEN}'
-H 'Content-Type: application/json' -d '{
 "active": true,
 "allUrlSchemesAllowed": false,
 "allowAccessControl": false,
 "allowedGrants": [
 "client_credentials",
 "urn:ietf:params:oauth:grant-type:jwt-bearer"
],
 "attrRenderingMetadata": [
 {
 "name": "aliasApps",
 "visible": false
 }
],
 "basedOnTemplate": {
 "value": "CustomWebAppTemplateId"
 },
 "clientType": "confidential",
 "displayName": "OICTEST_BASICAUTH",
 "editableAttributes": [
 {
 "name": "allowedGrants"
 },
 {
 "name": "protectableSecondaryAudiences"
 },
 {
 "name": "asOPCService"
 },
 {
 "name": "accessTokenExpiry"
 },
 {
 "name": "linkingCallbackUrl"
 }
]
}'
```

```

 { "name": "isOAuthResource" },
 { "name": "appIcon" }, { "name": "clientType" }, { "name":
"refreshTokenExpiry" },
 { "name": "trustScope" }, { "name": "landingPageUrl" },
 { "name": "audience" },
 { "name": "samlServiceProvider" }, { "name":
"isLoginTarget" }, { "name": "redirectUris" },
 { "name": "allowedScopes" }, { "name": "tags" }, { "name":
"logoutUri" }, { "name":
"allowedOperations" }, { "name": "termsOfUse" }, { "name":
"serviceParams" }, { "name":
"certificates" }, { "name": "aliasApps" }, { "name":
"schemas" }, { "name": "isWebTierPolicy" },
 { "name": "trustPolicies" }, { "name":
"logoutPageUrl" }, { "name": "secondaryAudiences" },
 { "name": "displayName" }, { "name":
"serviceTypeURN" }, { "name": "icon" }, { "name":
"description" }, { "name": "isOAuthClient" }, { "name":
"allowedTags" }, { "name":
"showInMyApps" }, { "name": "isObligationCapable" },
 { "name": "isMobileTarget" }, { "name":
"allowOffline" }, { "name": "idpPolicy" }, { "name":
"appSignonPolicy" }, { "name":
"postLogoutRedirectUris" }, { "name": "isFormFill" },
 { "name": "loginMechanism" }, { "name":
"serviceTypeVersion" }, { "name": "errorPageUrl" },
 { "name": "signonPolicy" }, { "name":
"identityProviders" }, { "name": "isSamlServiceProvider" },
 { "name": "appThumbnail" },
 { "name": "loginPageUrl" }, { "name": "scopes" },
 { "name": "allowAccessControl" },
 { "name": "isKerberosRealm" }, { "name": "allUrlSchemesAllowed" },
 { "name": "urn:ietf:params:scim:schemas:
oracle:idcs:extension:samlServiceProvider:App:encryptionAlgorithm" },
 { "name": "urn:ietf:params:scim:
schemas:oracle:idcs:extension:samlServiceProvider:App:groupAssertion
Attributes" },
 { "name": "urn:ietf:params:scim:schemas:oracle:idcs:extension:samlServiceProvider:App:in
cludeSigningCertInSignature" },
 { "name":
"urn:ietf:params:scim:schemas:oracle:idcs:extension:samlServiceProvider:App:signResponseOrAssertion"
 },
 { "name": "urn:ietf:params:scim:schemas:oracle:idcs:extension:samlServiceProvider:App:
assertionConsumerUrl" },
 { "name": "urn:ietf:params:scim:schemas:oracle:idcs:extension:samlServiceProvider:
App:nameIdUserstoreAttribute" },
 { "name": "urn:ietf:params:scim:schemas:oracle:idcs:
extension:samlServiceProvider:App:logoutResponseUrl" },
 { "name": "urn:ietf:params:scim:schemas:oracle:
idcs:extension:samlServiceProvider:App:succinctId" },
 { "name": "urn:ietf:params:scim:schemas:oracle:
idcs:extension:samlServiceProvider:App:logoutRequestUrl" },
 { "name": "urn:ietf:params:scim:schemas:

```

```

oracle:idcs:extension:samlServiceProvider:App:partnerProviderId" },
 { "name": "urn:ietf:params:scim:
schemas:oracle:idcs:extension:samlServiceProvider:App:nameIdFormat"
}, { "name": "urn:ietf:params:
scim:schemas:oracle:idcs:extension:samlServiceProvider:App:logoutBin
ding" }, { "name": "urn:ietf:params
:scim:schemas:oracle:idcs:extension:samlServiceProvider:App:userAsse
rtionAttributes" }, { "name":
"urn:ietf:params:scim:schemas:oracle:idcs:extension:samlServiceProvider:App:signatureHashAlgorithm" },
{ "name":
"urn:ietf:params:scim:schemas:oracle:idcs:extension:samlServiceProvider:App:metadata" },
{ "name":
"urn:ietf:params:scim:schemas:oracle:idcs:extension:samlServiceProvider:App:encryptAssertion" },
 { "name":
"urn:ietf:params:scim:schemas:oracle:idcs:extension:samlServiceProvider:App:logoutEnabled" },
 { "name":
"urn:ietf:params:scim:schemas:oracle:idcs:extension:samlServiceProvider:
App:encryptionCertificate" }, { "name":
"urn:ietf:params:scim:schemas:oracle:idcs:
extension:samlServiceProvider:App:signingCertificate" },
{ "name": "urn:ietf:params:scim:schemas:
oracle:idcs:extension:samlServiceProvider:App:federationProtocol" },
 { "name": "urn:ietf:params:scim:
schemas:oracle:idcs:extension:webTierPolicy:App:webTierPolicyJson" }
, { "name": "urn:ietf:params:scim:
schemas:oracle:idcs:extension:managedapp:App:bundleConfigurationProp
erties" }, { "name": "urn:ietf:
params:scim:schemas:oracle:idcs:extension:managedapp:App:isAuthorita
tive" }, { "name": "urn:ietf:
params:scim:schemas:oracle:idcs:extension:managedapp:App:enableSync"
}, { "name": "urn:ietf:params:
scim:schemas:oracle:idcs:extension:managedapp:App:adminConsentGrante
d" }, { "name": "urn:ietf:params:
scim:schemas:oracle:idcs:extension:managedapp:App:connected" },
{ "name": "urn:ietf:params:scim:
schemas:oracle:idcs:extension:managedapp:App:flatFileBundleConfigura
tionProperties" }, { "name":
"urn:ietf:params:scim:schemas:oracle:idcs:extension:managedapp:App:t
hreeLeggedOAuthCredential" }, {
"name":
"urn:ietf:params:scim:schemas:oracle:idcs:extension:managedapp:App:b
undlePoolConfiguration" },
{ "name":
"urn:ietf:params:scim:schemas:oracle:idcs:extension:managedapp:App:f
latFileConnectorBundle" },
{ "name":
"urn:ietf:params:scim:schemas:oracle:idcs:extension:formFillAppTempl
ate:AppTemplate:revealPasswordOnForm" },
 { "name":
"urn:ietf:params:scim:schemas:oracle:idcs:extension:formFillAppTempl
ate:AppTemplate:userNameFormTemplate"
}

```

```

 }, { "name":
"urn:ietf:params:scim:schemas:oracle:idcs:extension:formFillAppTempl
ate:AppTemplate:userNameFormExpression" },
{ "name":
"urn:ietf:params:scim:schemas:oracle:idcs:extension:formFillAppTempl
ate:AppTemplate:formCredentialSharingGroupID" },
{ "name":
"urn:ietf:params:scim:schemas:oracle:idcs:extension:formFillAppTempl
ate:AppTemplate:formCredMethod" },
{ "name":
"urn:ietf:params:scim:schemas:oracle:idcs:extension:formFillAppTempl
ate:AppTemplate:syncFromTemplate" },
{ "name":
"urn:ietf:params:scim:schemas:oracle:idcs:extension:formFillAppTempl
ate:AppTemplate:configuration" },
{ "name":
"urn:ietf:params:scim:schemas:oracle:idcs:extension:formFillAppTempl
ate:AppTemplate:formFillUrlMatch" },
{ "name":
"urn:ietf:params:scim:schemas:oracle:idcs:extension:formFillAppTempl
ate:AppTemplate:formType" },
{ "name":
"urn:ietf:params:scim:schemas:oracle:idcs:extension:kerberosRealm:Ap
p:masterKey" }, { "name":
"urn:ietf:params:scim:schemas:oracle:idcs:extension:kerberosRealm:Ap
p:maxRenewableAge" }, { "name":
"urn:ietf:params:scim:schemas:oracle:idcs:extension:kerberosRealm:Ap
p:maxTicketLife" }, { "name":
"urn:ietf:params:scim:schemas:oracle:idcs:extension:kerberosRealm:Ap
p:supportedEncryptionSaltTypes" },
{ "name":
"urn:ietf:params:scim:schemas:oracle:idcs:extension:kerberosRealm:Ap
p:realmName" },
{ "name":
"urn:ietf:params:scim:schemas:oracle:idcs:extension:kerberosRealm:Ap
p:ticketFlags" },
{ "name":
"urn:ietf:params:scim:schemas:oracle:idcs:extension:kerberosRealm:Ap
p:defaultEncryptionSaltType" },
{ "name":
"urn:ietf:params:scim:schemas:oracle:idcs:extension:requestable:App:
requestable" },
{ "name":
"urn:ietf:params:scim:schemas:oracle:idcs:extension:formFillApp:App:
revealPasswordOnForm" },
{ "name":
"urn:ietf:params:scim:schemas:oracle:idcs:extension:formFillApp:App:
userNameFormExpression" },
{ "name":
"urn:ietf:params:scim:schemas:oracle:idcs:extension:formFillApp:App:
formType" },
{ "name":
"urn:ietf:params:scim:schemas:oracle:idcs:extension:formFillApp:App:
formCredMethod" },
{ "name":
"urn:ietf:params:scim:schemas:oracle:idcs:extension:formFillApp:App:

```

```

configuration" }, { "name":
"urn:ietf:params:scim:schemas:oracle:idcs:extension:formFillApp:App:
formFillUrlMatch" }, { "name":
"urn:ietf:params:scim:schemas:oracle:idcs:extension:formFillApp:App:
formCredentialSharingGroupID" },
{ "name":
"urn:ietf:params:scim:schemas:oracle:idcs:extension:formFillApp:App:
userNameFormTemplate" },
{ "name":
"urn:ietf:params:scim:schemas:oracle:idcs:extension:dbcs:App:domainA
pp" }, { "name": "active" },
{ "name": "grantedAppRoles" }, { "name": "userRoles" },
{ "name": "adminRoles" }, { "name": "clientSecret" }
], "infrastructure": false, "isAliasApp": false,
"isManagedApp": false, "isMobileTarget": false,
"isOAuthClient": true, "isOAuthResource": false, "isOPCService": false,
"isSamlServiceProvider": false, "isUnmanagedApp": false,
"isWebTierPolicy": false, "loginMechanism": "OIDC", "migrated": false,
"name": "OICTEST_BASICAUTH",
"showInMyApps": false, "trustScope": "Explicit",
"urn:ietf:params:scim:schemas:oracle:idcs:extension:requestable:App"
:
{
 "requestable": false
}, "schemas": [
"urn:ietf:params:scim:schemas:oracle:idcs:App",
"urn:ietf:params:scim:schemas:
oracle:idcs:extension:requestable:App"
]
}

```

- You receive an application response:

```

{
 "clientType": "confidential", "isAliasApp": false,
"meta": {
"created": "2019-04-01T07:51:47.025Z", "lastModified": "2019-04-01T07:51:47.025Z",
"resourceType": "App", "location": "https://${IDCS_HOST}/admin/v1/Apps/
0c228094b0f5456289b928f979800308", "active": true,
"isLoginTarget": true,
"idcsCreatedBy": { "display": "OIC_SI_TEST", "type": "App", "value": "5debb165fc6946708e2c1f27264fafb1", "$ref": "https://${IDCS_HOST}/admin/v1/Apps/
5debb165fc6946708e2c1f27264fafb1" }, "displayName": "OICTEST_BASICAUTH",
"showInMyApps": false, "isMobileTarget": false,
"allowOffline": false,
"isUnmanagedApp": false, "idcsLastModifiedBy": {
 "display": "OIC_SI_TEST", "type": "App", "value": "5debb165fc6946708e2c1f27264fafb1", "$ref": "https://${IDCS_HOST}/admin/v1/Apps/
5debb165fc6946708e2c1f27264fafb1" },
"isOPCService": false, "name": "OICTEST_BASICAUTH",
"isOAuthClient": true,
"isManagedApp": false, "isSamlServiceProvider": false,
"infrastructure": false,
}

```

```

"allUrlSchemesAllowed": false, "trustScope": "Explicit",
"id": "0c228094b0f5456289b928f979800308", "isWebTierPolicy": false,
"loginMechanism": "OIDC", "allowAccessControl": false, "isOAuthResource": false,
"migrated": false, "isKerberosRealm": false, "allowedGrants": [
 "client_credentials",
"urn:ietf:params:oauth:grant-type:jwt-bearer"],
"attrRenderingMetadata": [{
"name": "aliasApps", "visible": false
}], "basedOnTemplate": {
"value": "CustomWebAppTemplateId", "lastModified": "2018-05-31T22:35:08Z",
"$ref": "https://$IDCS_HOST/admin/v1/AppTemplates/CustomWebAppTemplateId" }, "schemas": [
"urn:ietf:params:scim:schemas:oracle:idcs:App"],
"clientSecret": "91ac1189-b2ca-4ccb-a049-bbc635927646" }

```

- c. Note the application ID (part of the `location` parameter above), client ID (the `name` parameter above), and client secret from the response (for this example, referred to as  `${SI_APP_ID}`,  `${SI_CLIENT_ID}`, and  `${SI_CLIENT_SECRET}`).
- d. Activate the application using the above access token.
  - Activate the application request:

```

curl -X PUT https://$IDCS_HOST/admin/v1/AppStatusChanger/$
{SI_APP_ID} -H
'Authorization: Bearer ${SA_ACCESS_TOKEN}' -H 'Content-Type:
application/json' -d
'{"schemas": [
"urn:ietf:params:scim:schemas:oracle:idcs:AppStatusChanger"], "id": "$
{SI_APP_ID}",
"active":true}'

```

## 5. Associate the service integration application.

- a. Identify the `AppRoleID` to be granted for the Oracle Integration application. To install the connectivity agent, you must assign the `ServiceAdministrator` role to the created application. Therefore, a search is performed for that role (for this example, referred to as  `${OIC_APP_ROLE_ID}`).
  - Get the application role ID request:

```

curl -X GET 'https://$IDCS_HOST/admin/v1/AppRoles?
attributes=groups,urn:ietf:params:
scim:schemas:oracle:idcs:extension:user:User:appRoles&filter=display
Name+co%22ServiceUser%22+
and+app.value+eq+$OIC_APP_ROLE_ID%22' -H 'Authorization: Bearer $
{SA_ACCESS_TOKEN}'

```

- You receive the application role ID response:

```

{
 "schemas": [
 "urn:ietf:params:scim:api:messages:2.0>ListResponse"
]
}

```

```

],
 "totalResults": 1,
 "Resources": [
 {
 "displayName": "ServiceAdministrator",
 "id": "20e22fd1eb2e43ac8645e105abca201",
 "app": {
 "value": "e0eea2c9fad42c09d33035ff41e8f57",
 "display": "OICSSA_oiccafdev7"
 }
 }
],
 "startIndex": 1,
 "itemsPerPage": 50
 }
}

```

b. Grant the service integration application with the above role. This attaches the application role to the service integration application you created.

- Grant the role request:

```

curl -X POST https://${IDCS_HOST}/admin/v1/Grants -H
'Authorization: Bearer ${SA_ACCESS_TOKEN}' -H 'Content-Type:
application/json' -d '{
 "app": {
 "value": "${OIC_APP_ID}"
 },
 "entitlement": {
 "attributeName": "appRoles",
 "attributeValue": "${OIC_APP_ROLE_ID}"
 },
 "grantMechanism": "ADMINISTRATOR_TO_APP",
 "grantee": {
 "value": "${SI_APP_ID}",
 "type": "App"
 },
 "schemas": ["urn:ietf:params:scim:schemas:oracle:idcs:Grant"]
}'

```

- The role response is granted:

```

{
 "app": {
 "value": "${OIC_APP_ID}",
 "$ref": "https://${IDCS_HOST}/admin/v1/Apps/${OIC_APP_ID}"
 },
 "entitlement": {
 "attributeName": "appRoles",
 "attributeValue": "${OIC_APP_ROLE_ID}"
 },
 "grantMechanism": "ADMINISTRATOR_TO_APP",
 "grantee": {
 "value": "${SI_APP_ID}",
 "type": "App",
 "$ref": "https://${IDCS_HOST}/admin/v1/Apps/${SI_APP_ID}"
 },
}

```

```

"schemas": [
 "urn:ietf:params:scim:schemas:oracle:idcs:Grant"
],
"id": "6832316983c545baa01e9a9488022fa7",
"isFulfilled": true,
"grantor": {
 "type": "App",
 "value": "${SA_APP_ID}",
 "$ref": "https://${IDCS_HOST}/admin/v1/Apps/${SA_APP_ID}"
},
"meta": {
 "created": "2019-04-01T08:00:33.277Z",
 "lastModified": "2019-04-01T08:00:33.277Z",
 "resourceType": "Grant",
 "location": "https://${IDCS_HOST}/admin/v1/Grants/6832316983c545baa01e9a9488022fa7"
},
"idcsCreatedBy": {
 "value": "${SA_APP_ID}",
 "type": "App",
 "display": "OIC_SI_TEST",
 "$ref": "https://${IDCS_HOST}/admin/v1/Apps/${SA_APP_ID}"
},
"idcsLastModifiedBy": {
 "value": "${SA_APP_ID}",
 "type": "App",
 "display": "OIC_SI_TEST",
 "$ref": "https://${IDCS_HOST}/admin/v1/Apps/${SA_APP_ID}"
}
}

```

## How to Use the Service Integration Credentials

Once setup is complete, use the credentials  **\${SI\_CLIENT\_ID}** (for the user name) and  **\${SI\_CLIENT\_SECRET}** (for the password) to install the connectivity agent or for any other authentications to an Oracle Integration endpoint as shown below.

Oracle Integration SOAP endpoint request sample:

```

curl -X POST https://${OIC_HOST}/ic/ws/integration/v1/flows/soap/FLOW/1.0/ -u ${SI_CLIENT_ID}:${SI_CLIENT_SECRET} -H 'Content-Type: text/xml; charset=UTF-8' -H 'SOAPAction: process' -d '<soapenv:Envelope xmlns:rp="http://xmlns.oracle.com/rp_WS_Basic_Authentication_APP/rp_WS_Basic_Authentication/rp_Basic_Authentication_WS" xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/">
<soapenv:Header>
<wsse:Security soapenv:mustUnderstand="1" xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd" xmlns:wsu="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd">
<wsu:Timestamp wsu:Id="TS-0BC1DE3F9C8F739DB815541392855881">
<wsu:Created>2019-04-01T00:00:00.000Z</wsu:Created>
<wsu:Expires>2019-04-02T00:00:00.000Z</wsu:Expires>

```

```
</wsu:Timestamp>
</wsse:Security>
</soapenv:Header>
<soapenv:Body>
 <rp:process>
 <rp:input>OICTEST</rp:input>
 </rp:process>
</soapenv:Body>
</soapenv:Envelope>'
```

# Create and Edit Oracle Integration Generation 2 Instances

Create and edit Oracle Integration Generation 2 instances in the Oracle Cloud Infrastructure Console.

 **Note:**

Oracle Integration Generation 2 will be discontinued on August 31, 2025. You must [upgrade](#) from Oracle Integration Generation 2 to our next generation of the Oracle Integration platform, Oracle Integration 3. The upgrade to Oracle Integration 3 delivers a fully managed, preconfigured business automation environment with improved performance. If you have any questions, file a service request.

 **Note:**

As a tenancy administrator, you have the permissions required to create and edit Oracle Integration instances. To allow other users to perform these tasks, you must complete the steps to set up users and groups for access to Oracle Integration. These steps differ depending on whether or not your cloud account uses identity domains. See [About Setting Up Users, Groups, and Policies](#).

**Topics:**

- [Create an Oracle Integration Instance](#)
- [Access an Oracle Integration Instance](#)
- [Edit the Edition, License Type, Message Packs, and Custom Endpoint of an Instance](#)
- [Increase the Number of Instance Message Packs from the Command Line](#)
- [View Instance Details](#)
- [Stop and Start an Oracle Integration Instance](#)
- [Move an Instance to a Different Compartment](#)
- [Delete an Instance](#)
- [Create an Access Token to Provision an Instance with the CLI, REST API, or SDKs](#)
- [Create an Oracle Integration Instance Using a Terraform Script](#)

# Create an Oracle Integration Instance

Create an Oracle Integration instance in a selected compartment.

## Note:

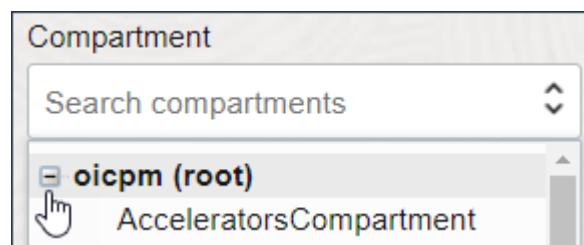
- Your Oracle Integration Generation 2 instance is associated with the IDCS instance to which you are logged in during instance creation. You cannot change this association after instance creation.
- The steps here apply to Oracle Integration Generation 2 and Oracle Integration for SaaS Generation 2. Differences in instance creation are noted. For more information about the SaaS version, see [Oracle Integration for Oracle SaaS](#).
- You cannot split a single instance into two parts (for example, into test and development parts). Instead, you must create separate instances for each part.

1. After [signing in to the Oracle Cloud Infrastructure Console](#), note your selected region.

Once created, instances are visible only in the region in which they were created. For information about regions, see [Regions and Availability Domains](#).



2. Open the navigation menu and click **Developer Services**. Under **Application Integration**, click **Integration**.
3. From the **Compartment** list, click through the hierarchy of compartments and select the one in which to create the instance. You may need to expand the + icon to find the compartment to use. Compartments can contain other compartments. It may take several minutes for the new compartment to appear after the policy has been created.



 **Note:**

Do NOT create your instance in the `root` or `ManagedCompartmentForPaaS` compartment.

The page is refreshed to show any existing instances in that compartment.

4. Click **Create Integration Instance**.
5. Enter the following details, and click **Create**:

| Field                    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Display Name</b>      | Enter the display name for the instance. Note that the display name becomes part of the URL for accessing the instance.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Consumption Model</b> | Lists consumption models available in this tenancy. Typically, one model is displayed, but multiple consumption models are listed if your tenancy is enabled for more than one. Available models include: <ul style="list-style-type: none"> <li>• Metered (Universal Credits)</li> <li>• Subscription (OIC4SaaS)</li> <li>• Oracle Integration Government</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Edition</b>           | Two editions are provided.<br>See <a href="#">Oracle Integration Editions</a> to see what's licensed in each edition.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>License Type</b>      | <b>Note:</b> If you are provisioning Oracle Integration for SaaS, this field is not shown. <ul style="list-style-type: none"> <li>• Select to create a new Oracle Integration license in the cloud. This provides you with packages of 5K messages per hour.</li> <li>• Select to bring an existing Oracle Fusion Middleware license to the cloud for use with Oracle Integration. This provides you with packages of 20K messages per hour. This option is also known as bring your own license (BYOL).</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Message Packs</b>     | The message pack options available for selection are based on the version of Oracle Integration instance you are creating. <ul style="list-style-type: none"> <li>• For Oracle Integration: Select the number of message packs. The total number of messages available per pack is based on the <b>License Type</b> option you selected. You can select up to 3 message packs if you bring an existing Oracle Fusion Middleware license (known as BYOL) to the cloud. You can select up to 12 message packs if you create a new Oracle Integration license in the cloud.</li> <li>• For Oracle Integration for SaaS: Select the number of message packs to use per month. Each message pack consists of one million messages. You can select up to 43 message packs.</li> </ul> <p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>• You can also specify the number of message packs using the command line option. This enables you to specify larger values than permitted by this dialog. See <a href="#">Increase the Number of Instance Message Packs from the Command Line</a>.</li> <li>• You are responsible for billing based on the message packs value you select.</li> </ul> |

| Field                        | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Access Token</b>          | If this field is displayed, you are creating an instance as a non-federated user. Sign in as a federated user and restart creating an instance.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Show Advanced Options</b> | <p><b>Custom Endpoint:</b> Configure this tab to use a custom endpoint URL for the instance. The custom hostname you want to map to the instance must already be registered on a DNS provider and its SSL certificate stored as a secret in an OCI Vault. See <a href="#">Configure a Custom Endpoint for an Instance</a>.</p> <ul style="list-style-type: none"> <li>• <b>Hostname:</b> Enter the custom hostname chosen for the instance.</li> <li>• <b>Certificate:</b> Provide the location of the hostname's certificate in your OCI tenancy. <ul style="list-style-type: none"> <li>– <b>Compartment:</b> Select the OCI compartment that contains your certificate vault.</li> <li>– <b>Vault:</b> Select the vault that contains the hostname's certificate.</li> <li>– <b>Secret:</b> Select the secret corresponding to the hostname's certificate.</li> </ul> </li> </ul> <p><b>Tags:</b> Enter a key and optional value. Tags enable you to track resources within your tenancy. See <a href="#">Resource Tags</a>.</p> |

- For Oracle Integration:  
Typically, the selected model is displayed after **Consumption Model**. If multiple consumption models are listed, choose the model you'd like used for this instance. Note that your dialog may differ, depending on options available for services purchased.
- For Oracle Integration for SaaS:  
Typically, the selected model is displayed after **Consumption Model**. If multiple consumption models are listed, choose the model you'd like used for this instance. Note that your dialog may differ, depending on options available for services purchased.

Instance creation takes some time. If you attempt to click the instance name and receive a 401: Authorization failed or a 404: Not Found error, but followed all the correct steps, instance creation has not completed. Wait a few more minutes.

6. When instance creation completes successfully, the instance shows as **Active** in the **State** column.

## Choose a License Type

Select a license type for your Oracle Integration instance.

**Note:** Choosing a license type applies when provisioning Oracle Integration only. It doesn't apply to Oracle Integration for SaaS.

- Select to create a new Oracle Integration license in the cloud. This provides you with packages of 5K messages per hour.
- Select to bring an existing Oracle Fusion Middleware license to the cloud for use with Oracle Integration. This provides you with packages of 20K messages per hour. This option is also known as bring your own license (BYOL).

## Choose a Message Pack Number

When creating or editing an instance, specify the number of messages to use.

The message pack options available for selection are based on the version of Oracle Integration instance you are creating or editing. You are responsible for billing based on the message packs value you select.

- For Oracle Integration: Select the number of message packs. The total number of messages available per pack is based on the **License Type** option you selected. You can select up to 3 message packs if you bring an existing Oracle Fusion Middleware license (BYOL) to the cloud. You can select up to 12 message packs if you create a new Oracle Integration license in the cloud.
- For Oracle Integration for SaaS: Select the number of message packs to use per month. Each message pack consists of one million messages. You can select up to 43 message packs.

 **Note:**

- Message pack updates can fail when maintenance and security patching are in progress.
- You can also specify the number of message packs using the command line option. This enables you to specify larger values than permitted by the user interface. See [Increase the Number of Instance Message Packs from the Command Line](#).

## Access an Oracle Integration Instance

Navigate to an Oracle Integration instance in the Oracle Cloud Infrastructure Console to open it.

 **Note:**

The steps described in this section assume that you have view permission to the compartment containing one or more Oracle Integration instances. For users without view (or greater) permission to the console, a URL to the Oracle Integration instance should be provided by the administrator.

 **Note:**

A user who creates an instance automatically has the ServiceAdministrator role assigned. All other users must have the appropriate role assigned for access. See:

- For new cloud accounts in regions updated to use identity domains: [Assign Oracle Integration Roles to Groups in an Identity Domain](#)
- For existing cloud accounts and new cloud accounts in regions not yet updated to use identity domains: [Assign Oracle Integration Roles to Groups](#)

1. Open the navigation menu and click **Developer Services**. Under **Application Integration**, click **Integration**.
2. If needed, select a compartment in the **Compartment** field.

The page is refreshed to show any existing instances in that compartment. If needed, select another region. Note that instances are visible only in the region in which they were created.

3. At the far right, click , and select **Service Console** to access the Oracle Integration login page.

If a message appears that access was denied, or the home page flashes, you don't have access to the Oracle Integration instance. See [Assign Oracle Integration Roles to Groups](#).

At this point, you are ready to:

- Learn about the features and capabilities of Oracle Integration. See [Oracle Integration](#).
- Assign service roles to users (such as Developer or Administrator) to allow them to work with the features of Oracle Integration. See [Assign Oracle Integration Roles to Groups](#).

## Edit the Edition, License Type, Message Packs, and Custom Endpoint of an Instance

You can edit the edition, license type, and number of message packs of an Oracle Integration Generation 2 instance. For Oracle Integration for SaaS Generation 2 instances, you can edit the edition and number of message packs. In addition, you can add (or update) a custom endpoint for Oracle Integration instances of both types. You cannot rename an instance. There is no instance downtime when you change the number of message packs.

1. In the **Name** column, click the instance to edit.
2. On the Integration Instance Details page, click **Edit**.  
The Edit Integration Instance dialog is displayed.
3. Update appropriate fields:

| Field         | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Edition       | <ul style="list-style-type: none"> <li>• <b>Standard:</b> Update to the Integration feature set. This option enables you to integrate SaaS and on-premises applications.</li> <li>• <b>Enterprise:</b> Update to the Integration and Process feature set. This option enables you to integrate SaaS and on-premises applications and automate business processes.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                            |
| License Type  | <p><b>Note:</b> If you are provisioning Oracle Integration for SaaS, this field is not shown.</p> <ul style="list-style-type: none"> <li>• Update to create a new Oracle Integration license in the cloud. This provides you with packages of 5K messages per hour.</li> <li>• Update to bring an existing Oracle Fusion Middleware (known as BYOL) license to the cloud for use with Oracle Integration. This provides you with packages of 20K messages per hour. This option is also known as Bring Your Own License (BYOL).</li> </ul>                                                                                                                                                                                                                                              |
| Message Packs | <p>The message pack options available for selection are based on the version of Oracle Integration you are installing.</p> <ul style="list-style-type: none"> <li>• For Oracle Integration installations: Edit the number of message packs. The total number of messages available per pack is based on the <b>License Type</b> option you selected. You can select up to 3 message packs if you bring an existing Oracle Fusion Middleware license to the cloud. You can select up to 12 message packs if you create a new Oracle Integration license in the cloud.</li> <li>• For Oracle Integration for SaaS installations: Edit the number of message packs to use per month. Each message pack consists of one million messages. You can select up to 43 message packs.</li> </ul> |
| <b>Notes:</b> | <ul style="list-style-type: none"> <li>• You can also specify the number of message packs using the command line option. This enables you to specify larger values than permitted by this dialog. See <a href="#">Increase the Number of Instance Message Packs from the Command Line</a>.</li> <li>• You are responsible for billing based on the message packs value you select.</li> <li>• After updating the number of message packs, it takes up to 24 hours for any additional resources to be added to the instance.</li> </ul>                                                                                                                                                                                                                                                  |

| Field                        | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Show Advanced Options</b> | <p><b>Custom Endpoint:</b> Configure this section to use a custom endpoint URL for the instance. The custom hostname you want to map to the instance must already be registered on a DNS provider and its SSL certificate stored as a secret in an OCI Vault. See <a href="#">Configure a Custom Endpoint for an Instance</a>.</p> <ul style="list-style-type: none"> <li>• <b>Hostname:</b> Enter the custom hostname chosen for the instance.</li> <li>• <b>Certificate:</b> Provide the location of the hostname's certificate in your OCI tenancy.             <ul style="list-style-type: none"> <li>– <b>Compartment:</b> Select the OCI compartment that contains your certificate vault.</li> <li>– <b>Vault:</b> Select the vault that contains the hostname's certificate.</li> <li>– <b>Secret:</b> Select the secret corresponding to the hostname's certificate.</li> </ul> </li> </ul> |

 **Note:**

You can also update or replace a custom endpoint that was previously associated with the instance. You can modify the hostname as well as the certificate details. However, to update the certificate details, you must have access permissions to the vault containing the required certificate.

4. Click **Save Changes**.

## Increase the Number of Instance Message Packs from the Command Line

You can increase the number of message packs used by your instance by executing a command from the Oracle Cloud Infrastructure command line (OCI CLI). The OCI CLI enables you to set higher message pack values than permitted by the user interface (Edit Integration Instance dialog).

The OCI CLI is part of the Cloud Shell. The Cloud Shell provides access to a pre-installed Linux shell with a pre-authenticated Oracle Cloud Infrastructure command line. See [Cloud Shell](#).

 **Note:**

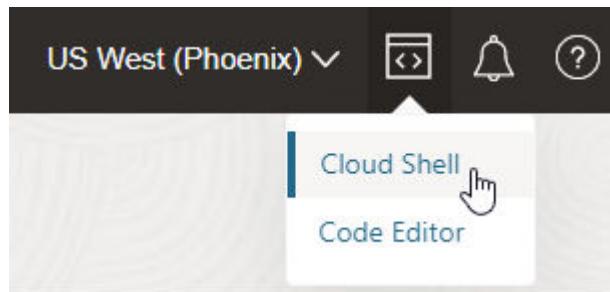
- After updating the number of message packs from the CLI, it takes up to 24 hours for any additional resources to be added to the instance.
- Changing the number of message packs impacts how you are billed.

The following steps provide an example of how to increase the number of message packs for your instance. The Cloud Shell supports a variety of features, tools, and utilities. You must also grant a specific IAM policy to the user requiring access to the Cloud Shell. See [Cloud Shell](#).

- Grant the following IAM policy to the group containing the user requiring access to the Cloud Shell. See [Set Up Users, Groups, and Policies](#).

```
allow group group_name to use cloud-shell in tenancy
```

- In the upper-right corner, click the **Developer Tools** icon, and select **Cloud Shell** to open the Cloud Shell.



The Cloud Shell drawer opens at the bottom of the screen. The Cloud Shell executes commands against the selected region in which you opened the Cloud Shell (for this example, Phoenix is the selected region).

Welcome to Oracle Cloud Shell.

Try the new file upload/download capability in Cloud Shell. Access this new feature from the Cloud Shell menu.

```
Your Cloud Shell machine comes with 5GB of storage for your home directory. Your Cloud Shell (machine and home directory) are located in: US East (Ashburn). You are using Cloud Shell in tenancy oicpm as an OCI Federated user oracleidentitycloudservice/my_login_name@example.com
```

Type `help` for more info.

```
my_login_name@cloudshell:~ (us-phoenix-1)$
```

- Enter the following command to increase the number of message packs.

For this example, the instance is using an existing Oracle Fusion Middleware license type brought to the cloud (BYOL) that is configured with 20K messages per pack (3 is the maximum value you can select for this license type in the Edit Integration Instance dialog). This example shows how to increase the value to 10.

```
oci integration integration-instance update --id OCID_value --message-packs 10
```

Where:

- id is the unique OCID identifier of your instance. This option is required. You get this value by clicking **Copy** in the **OCID** field on the details page for the instance.

- `--message-packs` is the number of allowed message packs to which to increase your instance. For this example, `10` is specified.

These are the minimum required options to specify. Additional command line options are also available. See [Update Oracle Integration instances](#).

The following tasks occur during command execution:

- You receive an immediate response with a work request ID. For example:

```
{
 "opc-work-request-id": "ocid1.integrationworkrequest.oc1.geography-
 region-1.vmaerdicjfhkgfyaqrkihl6weoxhg6dxktxpdhh5ln6yi2en52xr3bp1th4x"
}
```

View the response in the **Work Requests** section at the bottom of the details page for the instance.

- Configuration changes occur quickly and the **Work Requests** section shows this operation as completed. The new message pack number is visible on the details page for the instance. Note that the value does not automatically refresh. You may need to return to the page with the list of all integrations, then click the specific instance again to see the changes on the details page.
- After updating the number of message packs from the CLI, it takes up to 24 hours for any additional resources to be added to the instance.

## View Instance Details

You can view details about a provisioned instance and perform tasks such as accessing the instance login page to design integrations and processes, editing an instance, adding tags, deleting instances, and viewing custom endpoint details and instance life cycle activity.

1. Open the navigation menu and click **Developer Services**. Under **Application Integration**, click **Integration**.
2. Click a specific instance name. The Details page is displayed. The word **Active** is displayed beneath the green circle to indicate that this instance is running. If you are viewing an Oracle Integration for SaaS instance, the **License Type** field is not displayed.

The following table describes the key information shown on the instance details page:

| Field                                                                                                                                                                                                                                                                                   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Integration Instance Information tab</b>                                                                                                                                                                                                                                             | <ul style="list-style-type: none"> <li>Creation date</li> <li>Last updated date (for example, the last time started)</li> <li>Selected consumption (billable) model</li> <li>Edition (standard or enterprise)</li> <li>OCID value that uniquely identifies the instance, which can be shown in full and easily copied</li> <li>Service console URL, which can be shown in full and easily copied</li> <li>License type (either a new cloud license or an existing license brought over from Oracle Fusion Middleware). If you are viewing an Oracle Integration for SaaS instance, the <b>License Type</b> field is not displayed.</li> <li>Number of message packs and the quantity of messages in each pack</li> <li>Link for enabling File Server (cannot be undone)</li> </ul> <p><b>Note:</b> The IP address of your instance is not visible in the Oracle Cloud Infrastructure Console. If you need the outbound NAT address, file a service request with Oracle Support Services to obtain this value.</p> |
| <b>Custom Endpoint tab</b>                                                                                                                                                                                                                                                              | This tab is displayed if you have associated a custom endpoint with your instance. See <a href="#">Configure a Custom Endpoint for an Instance</a> . Click the tab to view the custom endpoint URL, certificate details, and the original URL of the instance.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <div style="border: 1px solid #ccc; padding: 10px; margin: 10px 0;"> <p> <b>Note:</b></p> <p>You can view the Certificate Secret Name only if you are granted the necessary permissions.</p> </div> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Service Console</b>                                                                                                                                                                                                                                                                  | <p>Click to access the login page. See <a href="#">Oracle Integration</a>.</p> <p><b>Note:</b> You can also access the login page from the main Oracle Cloud Infrastructure Console page for Oracle Integration. At the far right, click  for the specific instance, and select <b>Service Console</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Edit</b>                                                                                                                                                                                                                                                                             | Click to edit your settings. See <a href="#">Edit the Edition, License Type, Message Packs, and Custom Endpoint of an Instance</a> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Move Instance</b>                                                                                                                                                                                                                                                                    | Click to move the instance to a different compartment. This action can take some time to complete. See <a href="#">Move an Instance to a Different Compartment</a> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Add Tags</b>                                                                                                                                                                                                                                                                         | Click to add tags to the instance. You can use tags to search for and categorize your instances in your tenancy. See <a href="#">Resource Tags</a> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

| Field                | Description                                                                                                                                                        |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Metrics</b>       | Displays message metrics. See <a href="#">View Message Metrics</a> .                                                                                               |
| <b>Work Requests</b> | Lists instance life cycle activity, such as instance creation time, instance stop and start times, and so on.                                                      |
| <b>Add Tags</b> tab  | Click to add a tag.                                                                                                                                                |
| <b>More Actions</b>  | Contains options to stop, start, or delete the instance. See <a href="#">Stop and Start an Oracle Integration Instance</a> or <a href="#">Delete an Instance</a> . |

## Stop and Start an Oracle Integration Instance

You can stop and start Oracle Integration Generation 2 instances. After a stop request is initiated, the instance goes into a pausing state. During the pausing state, no new integrations and processes are started. In-flight integrations and processes continue until they either complete or reach a checkpoint. When the integrations and processes are no longer running, the instance goes into a completely paused state. During this state, Oracle Integration design time, settings, and monitoring capabilities are unavailable.

### Note:

Oracle recommends the following:

- Do not stop instances running in a production environment.
- Do not stop or start instances on a nightly basis. During routine maintenance patching, lifecycle operations are disabled. This may lead to a situation where the service instance cannot be started or stopped for several hours while the patching cycle completes.

1. Start or stop an instance in either of two ways:
  - a. On the Integration Instances page, go to the end of the row for the specific instance, and click . Note that an active instance is identified as **Active** and an inactive/stopped instance is identified as **Inactive** in the **State** column.
  - b. On the details page of a specific instance, click the **More Actions** menu.
2. Select the action to perform:
  - a. To stop your instance, select **Stop**, then select **Stop** again when prompted to confirm your selection.

The instance state changes to **Updating** during the pausing process. When complete, the state changes to **Inactive** in the **State** column.

This action causes the following to occur:

- For Oracle Integration users, billing is paused for the duration that the instance is paused. For Oracle Integration for SaaS users, billing is not impacted by pausing an instance.
- Integration endpoints are paused.
- Process instances are paused.
- Runtime is paused.

- Scheduled integrations do not execute.
- Database purging continues to run.
- REST APIs are unavailable for use. If you attempt to use the APIs while your instance is in a paused state, you receive a 409 error.
- Design time is not available for use. If you access the Oracle Cloud Infrastructure Console, it displays a page indicating the stopped state and asks you to start the instance for the console to become available.
- You cannot stop an instance if patching is in progress.

b. To resume your instance, select **Start**, then select **Start** again when prompted to confirm your selection.

 **Note:**

- You cannot start an instance when maintenance and security patching are in progress.
- If you stop your instance for more than 24 hours, the connectivity agent shuts down. You need to manually restart the connectivity agent when you restart your instance. See *Restart the Agent* in *Using Integrations in Oracle Integration Generation 2*.

The instance state changes to **Updating** during the resumption. When complete, the state changes to **Active** in the **State** column.

 **Note:**

You can use the REST APIs to stop and start an instance. See [Oracle Integration API](#). Oracle Integration APIs are available in the left navigation pane.

## Move an Instance to a Different Compartment

You can move an instance to a different compartment.

 **Note:**

Moving an instance can potentially change who has access to the instance. For example, if user A has the manage or read permission for one compartment and you move the instance to another compartment, they lose access. Ensure that the user has the necessary permissions for the compartment to which to move the instance.

 **Note:**

Moving an instance affects access within the Oracle Cloud Infrastructure Console Console only (view or manage permissions). Access to an Oracle Integration instance does not change.

You can move an instance in either of two ways:

From the main Oracle Cloud Infrastructure Console page for Oracle Integration.

1. Identify the instance to move.
2. At the far right, click , and select **Move Instance**.

From the details page for an existing Oracle Integration instance.

1. Click a specific instance name in the Oracle Cloud Infrastructure Console. The Details page is displayed.
2. Click **Move Instance**.
3. Select the compartment to which to move the instance, then click **Move Resource**.  
The move can take several minutes to complete. When done, the instance is displayed in the new compartment.

## Delete an Instance

You can delete an Oracle Integration instance.

 **Note:**

Deleting an Oracle Integration instance cannot be undone. This action permanently removes all design-time and runtime data.

- Choose where to delete the instance:
  - Delete the instance from the main Oracle Cloud Infrastructure Console for Oracle Integration.
    1. Open the navigation menu and click **Developer Services**. Under **Application Integration**, click **Integration**.
    2. Identify the instance to delete.
    3. At the far right, click , and select **Delete**.
  - Delete the instance from the details page for an existing Oracle Integration instance in the Oracle Cloud Infrastructure Console.
    1. Open the navigation menu and click **Developer Services**. Under **Application Integration**, click **Integration**.
    2. Click the name of the instance to delete.
    3. In the toolbar, click **Delete**.
    4. When prompted to confirm your selection, click **Yes**.

## Create an Access Token to Provision an Instance with the CLI, REST API, or SDKs

Before you can provision an Oracle Integration instance as a user with the command line interface (CLI), REST API, or any of the SDKs (Java and non-Java), you must create an

application and generate an access token. You specify the access token when provisioning the instance.

For information on how to create an instance with the CLI, REST API, and Java SDKs, see:

- [OCI CLI Command Reference](#)
- [Oracle Integration API](#)
- [Java SDK](#)

**Topics:**

- [Create the Application](#)
- [Generate the Access Token](#)

## Create the Application

Before you can provision an Oracle Integration instance as a user, you must first create an application.

 **Note:**

You can skip this section if you have already created the application.

1. Sign in as the tenant administrator to the Oracle Cloud Infrastructure Console.
2. Open the Oracle Cloud Infrastructure navigation menu and click **Identity & Security**. Under **Identity**, click **Federation**.
3. Click the **OracleIdentityCloudService** link.
4. Click the link in the **Oracle Identity Cloud Service Console** field to access the console.
5. From the  menu in the upper left, select **Applications**.
6. Click **Add**.
7. Click **Confidential Application**.  
This starts the Add Confidential Application Wizard.
8. Enter a name (for this example, PSO-AT-Gen-App is provided) and optional description, and click **Next**.
9. Select **Configure this application as a client now** and provide the following details for client authorization:
  - **Allowed Grant Types:** Resource Owner Client Credentials, JWT Assertion
  - **Allowed Operations:** Introspect
10. Under **Grant the client access to Identity Cloud Service Admin APIs**, click **+ Add**.  
The Add App Role dialog is displayed.
11. Select **Identity Domain Administrator**, then click **Add**.
12. Click **Next** to access the next page in the wizard.

13. Select **Configure this application as a resource server now.**
14. Provide the following details, and click **Next**.
  - **Access Token Expiration:** 3,600 seconds.
  - **Is Refresh Token Allowed:** Select the check box.
  - **Refresh Token Expiration:** 604,800 seconds.
  - **Primary Audience:** For this example, <https://pso-at-gen-app.com/> is provided (the primary recipient where the token is processed).
15. Under **Scopes**, click **Add**.
16. In the **Scope** field, enter a value (for this example, psoatgenapp).
17. In the **Display Name** field, enter a value.
18. Leave the **Requires Consent** check box unselected, then click **Add**.
19. Click **Next** to go to the next page in the wizard.
20. Select **Skip for later**, then click **Next**.
21. Leave **Enforce Grants as Authorization** unselected, then click **Finish**.

The application is created.

22. Click **Activate**, then click to confirm that you want to activate the application.

The application (named **PSO-AT-Gen-App** for this example) is created and is ready to use to generate the access token for the users.

## Generate the Access Token

Before you can provision an Oracle Integration instance as a user, you must create an access token.

 **Note:**

The access token is only valid for one hour.

### Generate the Access Token from the Oracle Cloud Infrastructure Console

1. Sign in as the tenant administrator to the Oracle Cloud Infrastructure Console.
2. Open the navigation menu and click **Identity & Security**, then **Federation**.
3. Click the **OracleIdentityCloudService** link.
4. Click the link in the **Oracle Identity Cloud Service Console** field to access the console.
5. From the menu in the upper left, select **Applications**.
6. Scroll down and click the application you created (for this example, named **PSO-AT-Gen-App**).
7. Select **Customized Scopes**.
8. Select **Invokes Identity Cloud Service APIs**, then specify **Identity Domain Administrator**.
9. Click **Download Token** and save the file.

The `tokens.tok` file contains the access token with the attribute name **app\_access\_token**.

```
cat tokens.tok

{"app_access_token":"eyJ4NXQjUzI."}
```

10. Provide the part of the access token *between* the quotes to the user to use for provisioning an instance. Do *not* provide the part labeled `app_access_token`.

#### Generate the Access Token from the CLI or an API

You can also generate the access token from the CLI or an API. For example:

```
IDCS_AT_PWD=$(curl "${CURL_FLAGS}" -u
"$IDCS_CLIENT_ID:$IDCS_CLIENT_SECRET" $IDCS_URL/oauth2/v1/token -d
"grant_type=password&scope=urn:opc:idm:_myscopes_&username=$
{IDCS_USERNAME}&password=${IDCS_PASSWORD}" | jq -r ".access_token")
```

## Create an Oracle Integration Instance Using a Terraform Script

You can provision an Oracle Integration instance using a terraform script. Terraform is an infrastructure-as-code software tool that you can use in Oracle Cloud Infrastructure.

Details about using terraform in Oracle Cloud Infrastructure are provided. See [Getting Started](#).

An example is provided for provisioning Oracle Integration with a terraform script. See [Terraform Registry](#).

# Manage Oracle Integration Generation 2 Instances

Oracle manages instances, including performing database management, upgrading instances to the next version, installing patches, and more. You can perform these management tasks in Oracle Integration.

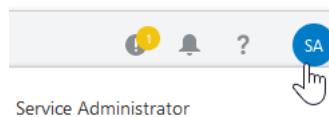
## Topics:

- [Obtain the NAT Gateway IP Address of the Oracle Integration Instance](#)
- [Enable Announcements for Oracle Integration](#)
- [Set Data Retention for Runtime Instances](#)
- [Configure the Instance Object Storage Bucket](#)
- [Export and Import Design-Time Metadata Between Instances](#)
- [Manage Integrations and Errors](#)
- [Upload an SSL Certificate](#)
- [Manage Integration and Process Instance History](#)
- [Set Instance Quotas on Compartments](#)
- [Configure a Custom Endpoint for an Instance](#)
- [Restrict Access to an Instance](#)
- [Configure Email Authentication Settings for SPF and DKIM](#)
- [Capture the Activity Stream of Integrations in Oracle Cloud Infrastructure Console](#)
- [Preserve Your Instance Data](#)
- [Move Oracle Integration Instances to a Different Region](#)
- [Rename a Tenancy](#)

## Obtain the NAT Gateway IP Address of the Oracle Integration Instance

You can obtain the NAT Gateway IP address (outbound IP address) of your Oracle Integration instance from the **About** menu. The outbound IP address is required to allowlist the instance. This feature eliminates the need to file a service request to obtain the outbound IP address.

1. Go to the **About** menu in Oracle Integration. This menu is *not* available in the Oracle Cloud Infrastructure Console. You can access Oracle Integration from the URL listed in the **Service console URL** field on the details page of your Oracle Integration instance. See [View Instance Details](#).



About

Sign Out

**2. Select **About**.**

The outbound IP address is displayed.

A screenshot of the 'About' screen for an Oracle Integration instance. At the top, there is a blue network icon followed by the text 'ORACLE Integration'. Below this, a table provides instance details:

|                                |                    |
|--------------------------------|--------------------|
| Version:                       | 22.3.2             |
| Service Instance:              | oic                |
| Identity Domain:               | idcs-              |
| Service Type:                  | Oracle Integration |
| Outbound IP:                   | 192.               |
| Bring Your Own License (BYOL): | false              |
| Number Of Message Packs:       | 1                  |

**3. Copy the **Outbound IP** value.**

**4. Use this value to allowlist the instance. See [Restrict Access to an Instance](#).**

## Enable Announcements for Oracle Integration

As an administrator, create a policy that sets your tenancy to display system announcements to Oracle Integration users, giving them timely, important information about service status. This is a one time action that applies to all Oracle Integration instances in the tenancy.

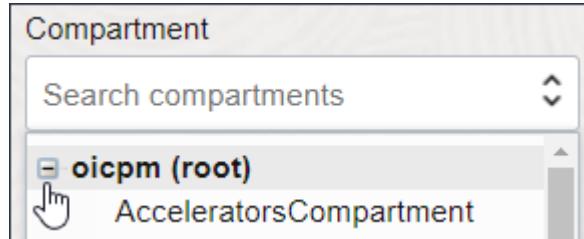
### How do announcements work?

- **For administrators:** Administrators can view announcements in the Oracle Cloud Infrastructure console by clicking **Announcements** at the top of the screen. The icon shows a green dot when there are new announcements to view. Oracle Cloud Infrastructure and Oracle Integration announcements are displayed in this window.  
For information about console announcements, the types of information they contain, and viewing options, see [Console Announcements](#). Also see this topic for information about managing email delivery of announcements. Note that Oracle sends announcements to the default tenancy administrator email address on record. If you want to change the default tenancy administrator email address on record, contact [Oracle Support](#).
- **For users:** After the policy described below is set, Oracle Integration users click **Announcements** at the top of their screen to view an announcements window listing past and ongoing announcements related to their Oracle Integration instance. Announcements are refreshed

every hour. See View Oracle Integration Announcements in *Getting Started with Oracle Integration Generation 2*.

To set the Oracle Integration announcements policy:

1. In the Oracle Cloud Infrastructure console, select **Identity**, then **Policies**.
2. From the **Compartment** list, select the root compartment.



The announcements policy must be created at the root compartment.

3. Click **Create Policy**.
4. In the Create Policy window, enter a name (for example, `AnnouncementsPolicy`) and a description.
5. Complete the policy's **Statements** field, entering the following statements.

Under **Policy Builder**, choose **Show manual editor**.

```
allow service integration to {ANNOUNCEMENT_LIST} in tenancy
allow service integration to {ANNOUNCEMENT_READ} in tenancy
```

6. Click **Create**.

The policy statements are validated and syntax errors are displayed.

7. Go to Oracle Integration and verify that announcements are now displaying in the announcements window.

## Set Data Retention for Runtime Instances

Specify how long to keep Oracle Integration historical data under standard or low space conditions and whether data is purged when low space is reached. You can also perform an immediate manual purge if needed.

### Note:

Several settings on this page, including **Purge When Low Space Reached** and **Perform Manual Purge**, affect Process runtime instances as well as Integration and Insight data. To set Process data retention, see the **Purge Retention** field described in Schedule Instances Archive and Purge in *Using Processes in Oracle Integration Generation 2*.

1. Display data retention settings.
  - In the Oracle Integration navigation pane, select **Settings**, then **Data Retention**.
  - Alternately, if your instance goes into quiesced mode due to lack of space, a message appears with a button directing you to this screen to adjust data retention settings.

The Data Retention screen is displayed. Insight settings appear only when Insight is enabled.

**Data Retention**

Control how Oracle Integration retains your historical data. Runtime instance data is purged to free up space for the newer data.

- Use **Standard Settings** to define retention for Integration and Insight data.
- Use **Warning (Low Space) Settings** to define alternate retention settings for Integration, Process, and Insight data when database space reaches a warning state.
- Use **Manual Purge** to immediately purge Integration, Process, and Insight data.

When the database space reaches a critical state, the system rejects incoming requests and stops all instances from running until more space becomes available.

**Data Retention Status**

Good

**Standard Settings**

Define data retention for Integration and Insight runtime data. Every day at midnight, data older than this retention period is purged.

| Integration                    | Insight                                    |
|--------------------------------|--------------------------------------------|
| Time Unit: Days                | Time Unit: Days                            |
| Keep Successful Instances *: 4 | Keep Completed Business Transactions *: 90 |
| Keep Faulted Instances *: 4    | Keep Active Business Transactions *: 75    |

**Warning (Low Space) Settings**

When the database space reaches a warning state, these more aggressive settings are used. **Recommended:** Set lower than Standard Settings.

Purge When Low Space Reached

| Integration                    | Insight                                    |
|--------------------------------|--------------------------------------------|
| Time Unit: Days                | Time Unit: Days                            |
| Keep Successful Instances *: 3 | Keep Completed Business Transactions *: 75 |
| Keep Faulted Instances *: 3    | Keep Active Business Transactions *: 60    |

**Manual Purge**

Immediately purge Integration, Process, and Insight data. This is a one time action and **cannot be undone**. Automated purges continue to run.

**Perform Manual Purge**

- Under **Data Retention Status**, view your Oracle Integration instance's data retention status at any time.

You'll see one of these statuses:

- **Good:** Indicates that Oracle Integration is retaining instances according to selected standard settings, and space is currently available.
- **Warning:** Indicates that warning (low space) settings are in effect.
- **Critical:** Indicates that space is critical. Until more space becomes available, Oracle Integration rejects incoming requests and stops all processes and integrations from running.

3. Under **Standard Settings**, specify how long to retain Integration instances (left) and Insight business transactions (right).
  - In the **Time Unit** fields, specify a time unit (days or hours) for the Keep settings below.
  - Specify standard **Integration** retention:
    - Specify a time unit (days or hours) to keep *successful* Integration instances, meaning those that are waiting, running, completed successfully, or with a recoverable fault.
    - Specify how long to keep *faulted* Integration instances, meaning those that have faulted without the possibility of recovery. You can choose to keep the faulted instances data around longer to attempt fault recoveries.
  - Specify standard **Insight** retention:
    - Specify a time unit (days or hours) to keep *completed* Insight business transactions, meaning those that are successful or failed.
    - Specify how long to keep *active* Insight business transactions, meaning those that are healthy or recoverable.
4. Under **Warning (Low Space) Settings**, specify how long to retain Integration instances (left) and Insight business transactions (right). You must select warning settings lower than your standard settings.
  - The **Purge When Low Space Reached** field determines whether Integration, Process, and Insight runtime data is automatically purged without reclaiming database space.  
Note that when this field is selected and low space is reached, **Process runtime instances are also deleted**.
  - In the **Time Unit** fields, specify a time unit (days or hours) for the Keep settings below.
  - Specify low space **Integration** retention:
    - Specify a time unit (days or hours) to keep *successful* Integration instances, meaning those that are waiting, running, completed successfully, or with a recoverable fault, under low space conditions.
    - Specify how long to keep *faulted* Integration instances, meaning those that have faulted without the possibility of recovery, under low space conditions. You can choose to keep the faulted instances data around longer to attempt fault recoveries.
  - Specify low space **Insight** retention:
    - Specify a time unit (days or hours) to keep *completed* Insight business transactions, meaning those that are successful or failed, under low space conditions.
    - Specify how long to keep *active* Insight business transactions, meaning those that are healthy or recoverable, under low space conditions.

5. If needed, click **Perform Manual Purge** to perform a manual purge of all Integration, Process, and Insight runtime data.

Clicking the purge button opens a side pane, where you specify:

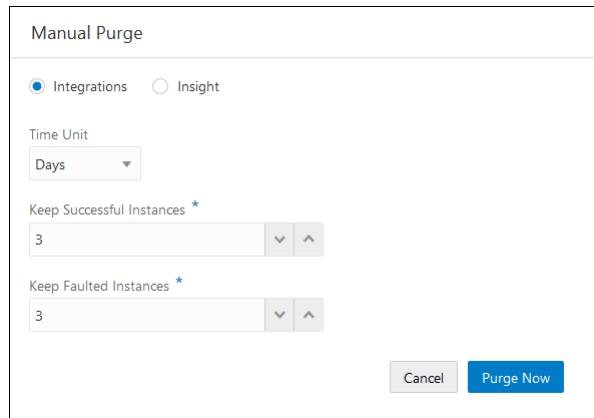
- Whether to purge Integration (and Process) or Insight runtime data
- Time Unit (Days)
- Number of items to purge

For example, if your usage is very high, you may choose to purge all successful instances within one hour of completion. Instance data older than the retention values specified is purged immediately when you click **Purge Now**.

 **Note:**

Use this option with care. When Integrations is selected, it immediately purges older Integration and Process data. When Insight is selected, it immediately purges older Insight data. This is a one-off procedure and cannot be undone.

Automated purges continue to run. To purge Insight data for a single model, see *Purge Integration Insight Data for a Model* in *Using Integration Insight in Oracle Integration Generation 2*.



6. At any point, click **Revert** to restore all data retention settings to their default values.
7. Click **Save**.

## Configure the Instance Object Storage Bucket

You must specify the Swift URL location and username and password credentials of your existing object storage bucket instance before you can create export and import archives of design-time metadata on the Import/Export page.

To complete the fields on this page, an object storage bucket instance must already exist. Otherwise, you must create a new instance. See Step 3: Create an Object Storage Bucket and Construct the Storage URL (If Not Using the Application Migration Service).

1. On the Home page, select **Settings > Storage**.

**Instance Storage**

Provide the location and credentials for your instance bucket which will be used to stage Import and Export operations.

|             |                                                                                      |
|-------------|--------------------------------------------------------------------------------------|
| Name *      | <input type="text" value="My Storage Area"/>                                         |
| Swift URL * | <input type="text" value="Storage URL, http://oraclecloud.com/v1/paasdevoic/swift"/> |
| User *      | <input type="text" value="User"/>                                                    |
| Password *  | <input type="text" value="*****"/>                                                   |

2. Enter the following details.

| Element          | Description                                                                                                                                                 |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Name</b>      | Enter the name of the object storage bucket.                                                                                                                |
| <b>Swift URL</b> | Enter the object storage bucket Swift URL. For example:<br><br><code>https://swiftobjectstorage.us-ashburn-1.oraclecloud.com/v1/paasdevoic/cloneRepo</code> |
|                  | See Step 3: Create an Object Storage Bucket and Construct the Storage URL (If Not Using the Application Migration Service).                                 |
| <b>User</b>      | Specify the object storage bucket user name.<br>See Step 2: Create a User and Group and Add Policies.                                                       |
| <b>Password</b>  | Specify the password.                                                                                                                                       |

3. Click **Save**. You can now export and import archives of design-time metadata on the Import/Export page.

## Export and Import Design-Time Metadata Between Instances

You can export and import archives of integration and process design-time metadata between instances. This feature can be useful if you want to take a snapshot of a production environment and try to recreate a problem in a different environment, move metadata from an instance in one region to an instance in another region, perform manual archives, or automate

your environment to archive daily to a repository such as Git. You can also export Oracle Integration archives and import them into Oracle Integration Generation 2.

 **Note:**

- Ensure that you first configure the Swift URL location and username and password credentials of the object storage bucket instance to which to export an archive of your design-time metadata on the Instance Storage page. See [Configure the Instance Object Storage Bucket](#).
- You cannot pick specific integrations to export. All integrations in the service instance are exported.

- [Create an Export Job](#)
- [Create an Import Job](#)

## Create an Export Job

You create an export job that consists of an archive file of design-time metadata that you want to export to the object storage bucket you configured on the Instance Storage page.

1. On the Home page, select **Settings > Import/Export** in the navigation pane. The Import/Export page is displayed with the status of any import and export jobs.

| Import/Export                                                                                                                              |                        |            |                      |  |
|--------------------------------------------------------------------------------------------------------------------------------------------|------------------------|------------|----------------------|--|
| <input type="button" value="Import"/> <input type="button" value="Export"/>                                                                |                        |            |                      |  |
| <input type="button" value="Q"/> <input type="button" value="H"/> 8 Import/Export Jobs <input type="button" value="Q"/>                    |                        |            |                      |  |
| Name                                                                                                                                       | Status                 | Duration   | Start Time           |  |
|  Import to Instance slc12btr.us.oracle2inst03.zip       | <span>Completed</span> | 30 minutes | 1/12/2020 9:58:50 PM |  |
|  Export of Instance slc12btr.us.oracle test for         | <span>Completed</span> | 6 minutes  | 1/10/2020 7:39:08 AM |  |
|  Export of Instance slc12btr.us.oracle Test desc        | <span>Completed</span> | 8 minutes  | 1/9/2020 6:50:46 AM  |  |
|  Import to Instance slc12btr.us.oracle this is a sample | <span>Completed</span> | 7 minutes  | 1/9/2020 1:51:51 AM  |  |

2. Click **Export** to create a job. A job consists of an archive file of design-time metadata that you want to export to the object storage bucket you configured on the Instance Storage page. If you have not configured an object storage bucket, you are prompted to click **Configure Now**.
3. Complete the following fields.

| Element                          | Description                                                                                                                                                                                                                                                                                  |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Job Name</b>                  | Enter a unique job name or accept the default value.                                                                                                                                                                                                                                         |
| <b>Export security artifacts</b> | Select the check box to export the following security artifacts with your job: <ul style="list-style-type: none"> <li>• Security policies</li> <li>• Security credentials (for connections)</li> <li>• Customer certificates</li> <li>• Application role memberships in Processes</li> </ul> |
| <b>Description</b>               | Enter an optional description that describes the export job.                                                                                                                                                                                                                                 |

### Create Export Job

*Start a job to export the current instance to an archive file in your allocated storage area.*

Instance Storage [SampleConnection](#)

Job Name \*

My Export of Instance example.mycompany.com 3-4-2020 12:15

Export security artifacts

Description

Add a description

**Start Export Job**

#### 4. Click **Start Export Job**.

A message is displayed in the banner at the top of the page.

Export job has been successfully started.

#### 5. View the status of export job creation and click the **refresh** icon periodically to view progress. You can click the job name to view more specific job details.

### Import/Export

5 Import/Export Jobs

| Name                                                       | Status   | Duration  | Start Time           |
|------------------------------------------------------------|----------|-----------|----------------------|
| My Export of Instance example.mycompany.com 3-4-2020 12:15 | Starting | 2 seconds | 3/4/2020 12:20:18 PM |

When the export job completes successfully, **Completed** is displayed in the **Status** field.

#### 6. Click



to view details about a job.

### Job Summary

#### Description

Job Type  
EXPORT

Security Artifact  
Yes

#### Archive Name

My Export of Instance example.mycompany.com 3-4-2020 12:15.zip

### Components

#### Component Name

Integration

#### Component Name

Process

#### Status

COMPLETE

#### Status

COMPLETE

#### Number of Total Resources

450

#### Number of Total Resources

0

7. If export archive creation does not complete successfully, click  to download a report about the export job.

## Create an Import Job

You create a job to import the exported archive job from the object storage bucket instance into the new instance.

1. Sign in to the instance in which to import the exported archive of design-time metadata.
2. On the Home page, select **Settings > Import/Export**.
3. Click **Import** to create a job to import the exported archive job from the object storage bucket instance into the new instance.
4. Complete the following fields.

| Element                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Archive Filename</b> | Select the archive to import into the instance.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Import Mode</b>      | <p>Select the import mode:</p> <ul style="list-style-type: none"> <li>• <b>Import:</b> Imports all integrations in the archive. You can also select <b>Activate</b> and <b>Start Schedules</b> to activate all integrations and start all schedules during this same import session or during a separate session at a later time. Selecting those options separately enables you to first update any configuration properties in the imported integrations (for example, modify any necessary configuration or security properties on the Connections page for each integration).</li> <li>• <b>Activate:</b> Activates all integrations imported with the <b>Import</b> option during the same session or during a separate session. You can also select <b>Start Schedules</b> to start any integration schedules.</li> <li>• <b>Start Schedules:</b> Starts integration schedules during the same session in which you selected <b>Import</b> and <b>Activate</b> or during a separate session.</li> </ul> |

| Element                          | Description                                                                                                              |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| <b>Import security artifacts</b> | Select this check box if you previously selected <b>Export security artifacts</b> when creating your export archive job. |
| <b>Job Name</b>                  | Enter a unique job name or accept the default value.                                                                     |
| <b>Description</b>               | Enter an optional description that describes the import job.                                                             |

### Create Import Job

*Start a job to import a saved archive in to the current instance from your allocated storage area.*

Instance Storage [SampleConnection](#)

Archive Filename

My Export of Instance example.mycompany.com 3-4-2020...

Import Mode

Import

Import security artifacts

Start Schedules

Job Name

My Import to Instance example.mycompany2.com 3-4-2020 16:15

Description

Add a description

**Start Import Job**

- Click **Start Import Job** to start the job to import the archive from the object storage bucket instance into the new Oracle Integration instance.

A message is displayed in the banner at the top of the page.

Import job has been successfully started.

- View the status of import job creation and click the **refresh** icon periodically to view progress.

When the import job completes successfully, **Completed** is displayed in the **Status** field.

- Click



to view details about the job.

| <b>Job Summary</b>                    |                                                                |
|---------------------------------------|----------------------------------------------------------------|
| <b>Description</b>                    |                                                                |
| ---                                   |                                                                |
| <b>Job Type</b>                       | IMPORT                                                         |
| <b>Import Mode</b>                    |                                                                |
| Import                                |                                                                |
| <b>Components</b>                     |                                                                |
| <b>Component Name</b>                 | Integration                                                    |
| <b>Status</b>                         | COMPLETE                                                       |
| <b>Number of Total Resources</b>      | 558                                                            |
| <b>Number of Resources Imported</b>   | 447                                                            |
| <b>Number of Resource to Activate</b> | 0                                                              |
| <b>Number of Resource Activated</b>   | 0                                                              |
| <b>Security Artifact</b>              | Yes                                                            |
| <b>Archive Name</b>                   | My Export of Instance example.mycompany.com 3-4-2020 12:15.zip |
| <b>Component Name</b>                 | Process                                                        |
| <b>Status</b>                         | COMPLETE                                                       |
| <b>Number of Total Resources</b>      | 0                                                              |
| <b>Number of Resources Imported</b>   | 0                                                              |
| <b>Number of Resource to Activate</b> | 0                                                              |
| <b>Number of Resource Activated</b>   | 0                                                              |

8. If the import archive is not successful, click  to download a report about the import job.
9. Browse the pages and note that the design-time metadata you exported is now visible. For example, for Integrations, look for integrations, connections, lookups, and more. For Processes, look for process applications and decision models.

 **Note:**

Your archive file resides in the object storage bucket until you delete it.

## Manage Integrations and Errors

You can manage integration and process errors in Oracle Integration.

Activate the service in Oracle Integration when the integration is ready to go live and you can deactivate an active Integration. You can modify or clone the integration. Delete an integration that is no longer needed. See Manage Integrations in *Using Integrations in Oracle Integration Generation 2*.

You can manage errors from the Errors pages in Oracle Integration at the integration level, connection level, or specific integration instance level. See Manage Errors in *Using Integrations in Oracle Integration Generation 2*.

## 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.

For Process, use this page to manage runtime security certificates for message protection. Upload, update, or delete certificates as needed. In Process applications, certificates are used to validate external web service connections for an application when message security is applied. If an external endpoint requires a specific certificate, request the certificate and upload it into Oracle Integration. An expired certificate results in a process instance error.

To upload an SSL certificate:

1. In the left navigation pane, click **Home > Settings > Certificates**.

All certificates currently uploaded to the trust store are displayed in the Certificates dialog. The



link enables you to filter by name, certificate expiration date, status, type, category, and installation method (user-installed or system-installed). Certificates installed by the system cannot be deleted.

| Certificates                                        |       |          |            |
|-----------------------------------------------------|-------|----------|------------|
| Upload                                              |       |          |            |
| 6 Certificates                                      |       |          |            |
| Installed By: User                                  |       |          |            |
| Name                                                | Type  | Category | Status     |
| mykey3 <span>EXPIRES IN 1 MONTHS</span>             | X.509 | Identity | Configured |
| mykey2 <span>EXPIRED</span>                         | X.509 | Identity | Configured |
| recert1586867745048 <span>EXPIRES IN 4 YEARS</span> | X.509 | Trust    | Configured |
| recert1586863610817 <span>EXPIRES IN 4 YEARS</span> | X.509 | Trust    | Configured |
| recert1586857607511 <span>EXPIRES IN 4 YEARS</span> | X.509 | Trust    | Configured |
| recert1586857416600 <span>EXPIRES IN 4 YEARS</span> | X.509 | Trust    | Configured |

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

#### X.509 (SSL transport)

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

#### Note:

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

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

### SAML (Authentication & Authorization)

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

### PGP (Encryption & Decryption)

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

- c. Click **Upload**.

## Manage Integration and Process Instance History

You can determine when to purge the data in your database. You can also view the notification and quiesced thresholds for your database and the percentage of the database that has been used.

For integration instance data, set retention and purging settings. See Set Data Retention for Runtime Instances.

Process instance history is automatically purged periodically, based on settings in Oracle Integration. See Archive and Purge Data in *Using Processes in Oracle Integration Generation 2*.

## Set Instance Quotas on Compartments

You can set limits on the number of Oracle Integration Generation 2 instances that can be created in a compartment.

1. Open the navigation menu and click **Identity & Security**. Under **Identity**, click **Policies**.

2. Click **Create Policy**.
3. In the Create Policy window, enter a name (for example, `instanceCreationQuota`) and a description. Under **Policy Builder**, choose **Show manual editor**.
4. Complete the **Policy Statements** field. As an example, to set a quota limit of 10 instances for the compartment named `MyCompartment`, enter the following statement:

```
Set integration quota instance-count to 10 in compartment MyCompartment
```

Where:

- `integration`: Is the family name for Oracle Integration.
- `instance-count`: Is the quota name.

5. Click **Create**.

The policy statement is validated and any syntax errors are displayed.

## Configure a Custom Endpoint for an Instance

You can map a custom endpoint to an Oracle Integration instance and use it to access the instance instead of the original URL generated in the Oracle Cloud Infrastructure Console.

You can create a custom hostname with your chosen domain (for example, `mycustom.example.org`) for your Oracle Integration instance.

 **Note:**

Associating a custom endpoint with your Oracle Integration instance doesn't affect the original instance URL. You'll be able to access your instance using the custom endpoint URL as well as the original instance URL.

Perform the following configuration tasks to successfully use a custom endpoint URL for your Oracle Integration instance:

 **Note:**

These instructions assume you have direct access to an Oracle Integration instance. If you are using the instance behind a WAF or an API Gateway, skip the certificate-related instructions provided here (from Step 3 onwards) and follow the WAF or API gateway certificate instructions instead. See [WAF Certificates](#) or [Setting Up Custom Domains and TLS Certificates for API Gateways](#).

1. Choose a custom hostname for your instance and register it at a DNS provider.
2. Obtain an SSL certificate from a certificate authority (CA) for your hostname.
3. In your OCI tenancy, select a compartment and create an OCI Vault to store the certificate. See [Working with Compartments](#), [Overview of Vault](#), and [Create a New Vault](#).

4. Store the certificate as a secret in the OCI Vault. See [Create a New Secret](#). Use the following certificate format:

```
{
 "key": "-----BEGIN PRIVATE KEY-----\n...-----END PRIVATE KEY-----\n",
 "cert": "-----BEGIN CERTIFICATE-----\n...-----END CERTIFICATE-----\n",
 "intermediates": [
 "-----BEGIN CERTIFICATE-----\n...-----END CERTIFICATE-----\n",
 "-----BEGIN CERTIFICATE-----\n...-----END CERTIFICATE-----\n"
],
 "passphrase": "<private key password if encrypted key is provided>"
}
```

#### Note:

- To avoid manual errors, you can also convert your PEM certificate into a single line containing "\n", as expected, with the following awk commands. For the leaf certificate:

```
awk -v RS= '{gsub(/\n/, "\\\n")}{1}' <cert_pem_file>
```

For each intermediate/root certificate:

```
awk -v RS= '{gsub(/\n/, "\\\n")}{1}'
<each_intermediate_cert_pem_file>
```

For the private key:

```
awk -v RS= '{gsub(/\n/, "\\\n")}{1}' <private_key_pem_file>
```

- The **Latest** version of the secret is used when you associate a custom endpoint with your instance either through the create instance or edit instance operation. For information on secret versions, see [Secret Versions and Rotation States](#).
- If you use a hostname certificate whose certificate authority (CA) is not in the Oracle Integration trust store, you must also upload the certificate to your Oracle Integration instance; otherwise, an exception is thrown in the scenarios the instance calls itself.

Note the following certificate requirements:

- If the certificate has more than one root/intermediate certificate, each certificate must be specified as a separate element in an `intermediates` array.
- Always ensure that the final root CA is specified as the last element in the array. For example, if there are three intermediate certificates for the leaf certificate, the certificate that issued the leaf certificate should go as the `intermediates[0]` element, the certificate that issued the `intermediates[0]` certificate should go in the `intermediates[1]` element, and the certificate that issued the `intermediates[1]` certificate should go in the `intermediates[2]` element.

- The `passphrase` attribute is optional and does not need to be specified if the private key is not encrypted.
- If using an encrypted private key, the following format is required (PKCS1 is supported):

```
-----BEGIN RSA PRIVATE KEY-----
Proc-Type: 4,ENCRYPTED
-----END RSA PRIVATE KEY-----
```

A JSON file with an encrypted private key looks as follows:

```
{
 "key": "-----BEGIN RSA PRIVATE KEY-----\nProc-Type: 4,ENCRYPTED\n....\n-----END RSA PRIVATE KEY-----",
 ...
 ...
 "passphrase": "<passphrase to decrypt the key>"
}
```

A JSON file with an unencrypted private key looks as follows:

```
{
 "key": "-----BEGIN RSA PRIVATE KEY-----
\nvRXUK08v31bw2rnDLw+vjuX2i8ujHWs\n....\n-----END RSA PRIVATE KEY-----",
 ...
 ...
}
```

- If your private key is in PKCS8 format, you must convert it to PKCS1 format:

```
openssl rsa -in <input_pkcs8_encrypted_private_key> -out
<converted_encrypted_private_key_file_name> -aes256
```

#### 5. Create an Identity and Access Management (IAM) policy to:

- Allow the integration service to read the version and contents of the secret.
- Allow the admin group to access the secret (or create a new secret), while creating or updating an Oracle Integration instance with a custom endpoint.

For the policy statement syntax, see [The OCI Policy to Manage Secrets](#) and [CreatePolicy API Request](#).

6. Create an integration instance and map the custom endpoint details to it. See [Create an Oracle Integration Instance](#).
7. You can also edit an existing Oracle Integration instance and map a custom endpoint to it. See [Edit the Edition, License Type, Message Packs, and Custom Endpoint of an Instance](#).
8. Finally, update the custom endpoint DNS record to the original instance hostname. As a best practice, update the CNAME of the DNS record with the hostname of the original instance endpoint.

#### Conditional Post-Configuration Tasks:

- If you are using three-legged OAuth with third-party identity providers (such as Google, Facebook, etc.), update the redirect URL with the custom hostname in your identity provider (IdP) application. If the custom hostname for your Oracle Integration instance is

mycustom.example.org, your redirect URL must be, for example, `https://mycustom.example.org/icsapis/agent/oauth/callback`.

After updating the redirect URL in the IdP application, you must reacquire the access token by providing consent on the connection page.

- If you had created integration flows prior to mapping a custom endpoint to your instance, you must deactivate and re-activate all those integrations to regenerate the WSDLs.

 **Note:**

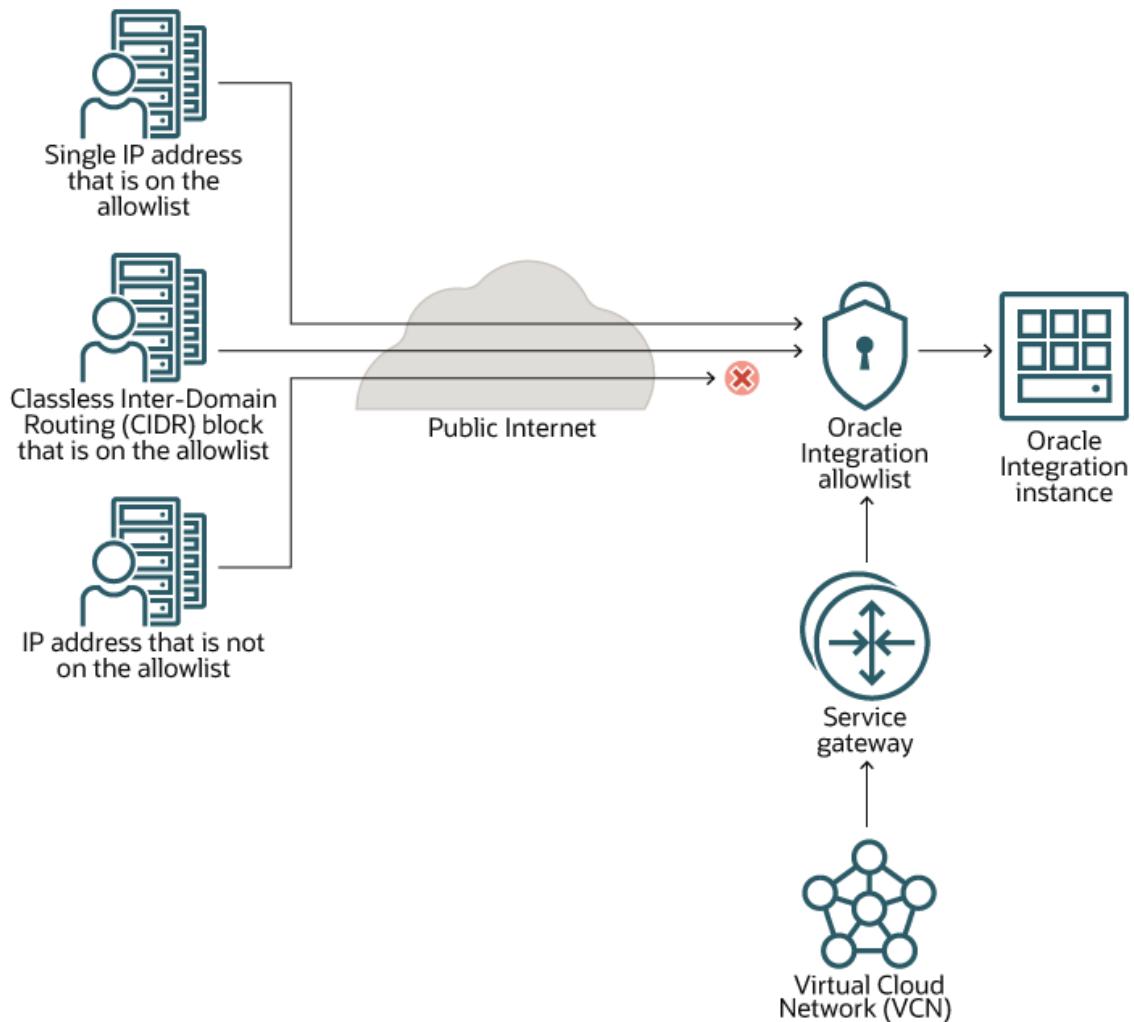
If you're using the Oracle NetSuite Adapter, note that the adapter's TBA Authorization Flow security policy won't work with custom endpoints for Oracle Integration.

## Restrict Access to an Instance

Restrict the networks that have access to your Oracle Integration instance by configuring an allowlist (formerly a whitelist). Only users from the specific IP addresses, Classless Inter-Domain Routing (CIDR) blocks, and virtual cloud networks that you specify can access the Oracle Integration instance.

For the Oracle Integration instance, configure the allowlist when you create the instance or after creating the instance.

**Option 1 for Configuring Allowlists: Restrict Access to Oracle Integration Using the Self-service Allowlist Capabilities**



In this scenario, you restrict access to Oracle Integration using an allowlist. The allowlist restricts access based on the following parameters:

- Single IP address
- Classless Inter-Domain Routing (CIDR) block (that is, an IP address range)
- Virtual Cloud Network Oracle Cloud ID (VCN OCID)

Additionally, your organization might have a service gateway. The service gateway lets your virtual cloud network (VCN) privately access Oracle Integration without exposing the data to the public internet.

Only the specified IP addresses and VCN OCIDs can access Oracle Integration. Users and systems accessing Oracle Integration from listed VCNs have full access.

### Advantages

- Easy setup! You can configure your allowlist in just a few minutes, without having to create a custom endpoint.
- All traffic is supported, including REST, SOAP, and other internet traffic.

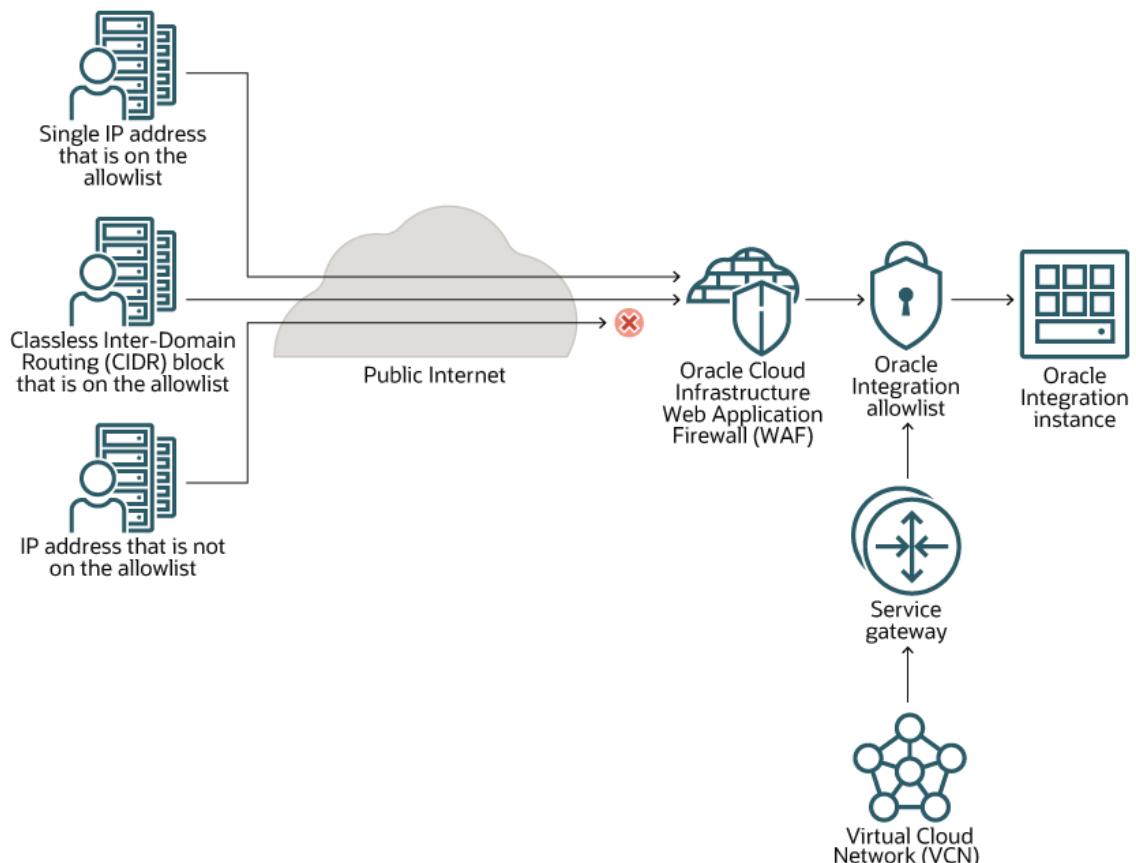
## Disadvantages

- The rules allow for all-or-nothing access and don't allow for more nuanced control. For instance, all traffic for a particular IP address or range is allowed, even if someone using an allowed IP address passes SQL as a command line parameter.
- You're limited to 15 access rules. However, a CIDR block counts as only 1 entry, so you might not need more than 15 rules.

## Tasks to Complete for this Scenario

1. Add your organization's VCN OCID to the allowlist. The VCN must be in the same region as Oracle Integration and should have a service gateway. When you add the VCN OCID to the allowlist, all resources on the VCN can access Oracle Integration.
2. For all partner networks and applications, add their IP addresses or address ranges to the allowlist. You need all the IP addresses for all applications and systems that require access to Oracle Integration. Make sure you consider all partner systems and SaaS applications when compiling the list. For example, if a CRM platform requires access, you must add the individual or range of IP addresses for the platform. When you add the IP addresses or address ranges to the allowlist, you grant full access to the user interface and integrations for your network.
3. Enable loopback so that Oracle Integration can call itself. For example, enabling loopback allows Oracle Integration to call its own REST APIs.

## Option 2 for Configuring Allowlists: Restrict Access to Oracle Integration Using the Oracle Cloud Infrastructure Web Application Firewall (WAF)



This scenario is the most powerful configuration option for allowlisting, allowing you to create sophisticated rules. In this scenario, you restrict access to Oracle Integration using Oracle Cloud Infrastructure Web Application Firewall (WAF).

### How Each Item Controls Access

The allowlist lets the following entities access Oracle Integration:

- WAF
- Virtual Cloud Network Oracle Cloud ID (VCN OCID)

As a result, all internet traffic is routed to WAF, which restricts access based on:

- Single IP address
- Classless Inter-Domain Routing (CIDR) block (that is, an IP address range)
- Virtual Cloud Network Oracle Cloud ID (VCN OCID)
- Additional rules that you define

If your organization has a service gateway, the service gateway lets your virtual cloud network (VCN) privately access Oracle Integration without exposing the data to the public internet.

### Advantages

- WAF allows you to create sophisticated rules for your allowlist. For instance:
  - If someone tries to pass SQL as a command line parameter, you can disallow the request.
  - You can restrict access based on location using geo-blocking.
- For more information, see [Managing WAF Policies](#) for Oracle Cloud Infrastructure Web Application Firewall.
- All traffic is supported, including REST, SOAP, and other internet traffic.
- The limitation of 15 allowlist rules doesn't apply to this scenario.

### Disadvantages

- This option is more complex, time consuming, and error prone than the self-service allowlist on its own.
- You must create a custom endpoint for WAF, requiring a server certificate and a DNS entry.

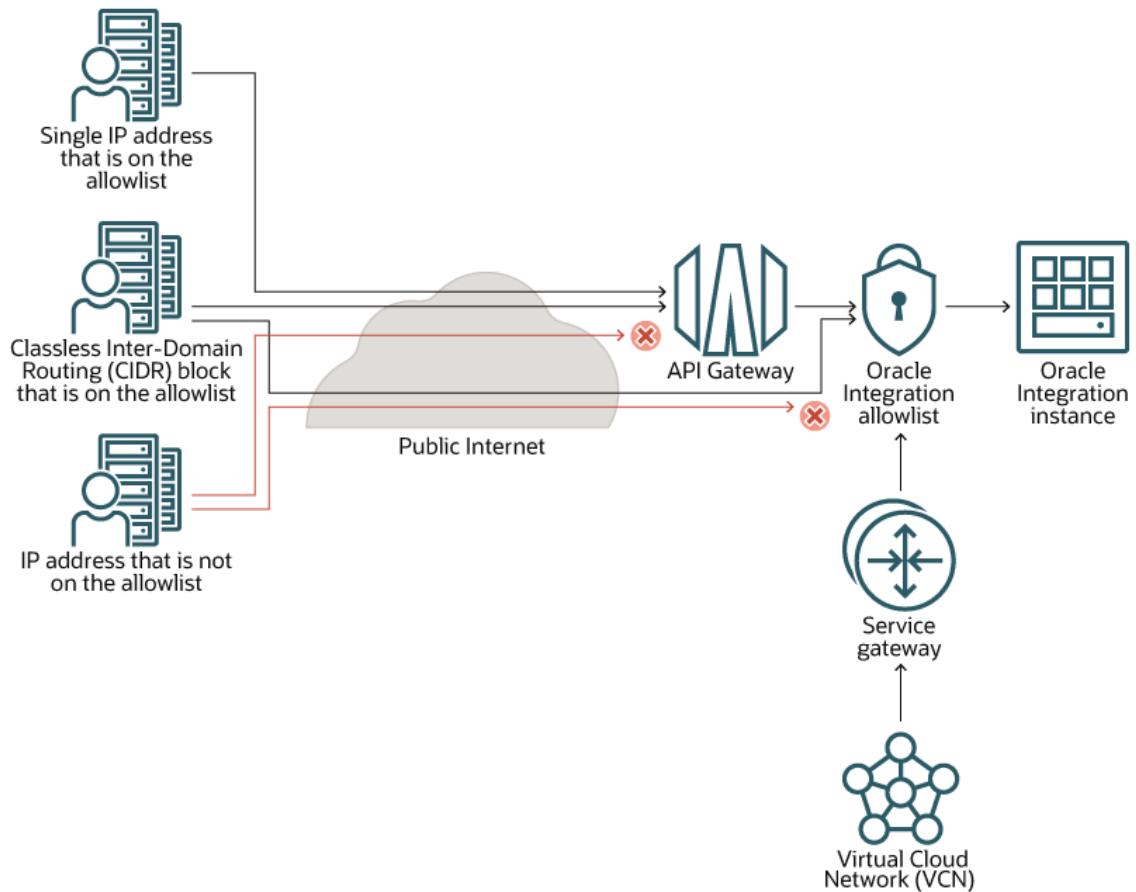
### Tasks to Complete for this Scenario

1. Configure WAF according to your organization's requirements.  
See [Overview of Web Application Firewall](#) for Oracle Cloud Infrastructure Web Application Firewall.
2. Configure a custom endpoint for Oracle Integration.  
See [Configure a Custom Endpoint for an Instance](#).
3. Add the IP address(es) for WAF to the allowlist.  
If your organization has Oracle Integration in multiple regions, each region has its own WAF. You must add the IP addresses for all WAFs to the allowlist.
4. Add your organization's VCN OCID to the allowlist. The VCN must be in the same region as Oracle Integration and should have a service gateway.  
When the VCN OCID is on the allowlist, your virtual cloud network bypasses WAF.

 **Note:**

You don't need to enable loopback when you use WAF to restrict access to Oracle Integration.

**Option 3 for Configuring Allowlists: Restrict Access to Oracle Integration Using the API Gateway**



In this scenario, you restrict access to Oracle Integration using the API Gateway and an allowlist.

If all traffic to Oracle Integration is in the form of REST API calls, this setup suits your needs. However, if you have traffic in the form of non-REST API calls, this scenario might not be ideal. You have traffic in the form of non-REST calls if your organization supports any of the following situations:

- Users working in the Oracle Integration user interface, including using Visual Builder and the Processes feature
- Users working in the Oracle Cloud Infrastructure Console user interface
- SOAP calls

If you support any non-REST calls, you must use the Oracle Integration allowlist to manage this access. Here's why: API Gateway doesn't let you add IP addresses to an allowlist.

**How Each Item Controls Access**

- All REST traffic from the internet is routed to API Gateway.

For details about how access is restricted, see [Overview of API Gateway](#) for API Gateway.

- The allowlist lets the following entities access Oracle Integration:
  - API Gateway VCN
  - Service gateway, if your organization has one
  - REST and SOAP requests

 **Note:**

If you need Visual Builder and Processes access, this pattern allows for bypassing the API Gateway.

If your organization has a service gateway, the service gateway lets your virtual cloud network (VCN) privately access Oracle Integration without exposing the data to the public internet.

### Advantages

- API Gateway allows you to create more nuanced rules than the self-service allowlist. See [Adding Request Policies and Response Policies to API Deployment Specifications](#) for API Gateway.
- The limitation of 15 allowlist rules doesn't apply to REST API calls.

### Disadvantages

- If your organization uses File Server, you can't restrict access using the API Gateway. You'd have to allow direct access to File Server.
- This option is more complex, time consuming, and error prone than the self-service allowlist on its own.
- If you don't configure everything exactly as required, users experience access issues. For instance, users can't access the Processes feature, and only people on the internal network can access Visual Builder.
- For any non-REST calls to Oracle Integration, you must provide direct access using the Oracle Integration allowlist. You're limited to 15 access rules for this allowlist.

### Tasks to Complete for this Scenario

 **Note:**

You must complete these steps by hand and use the correct format, or users experience access issues.

1. Configure API Gateway according to your organization's requirements. See the [API Gateway documentation](#).
2. Add your organization's VCN OCID to the allowlist. The VCN must be in the same region as Oracle Integration.  
When the VCN OCID is on the allowlist, your virtual cloud network bypasses the API Gateway
3. Add API Gateway to the allowlist.
4. Enable loopback so that Oracle Integration can call itself.  
For example, enabling loopback allows Oracle Integration to call its own REST APIs.

## REST API for Allowlisting

You can also use the REST API for creating and modifying allowlists. See [/integrationInstances/{integrationInstanceId}/actions/changeNetworkEndpoint](#).

### Prerequisites for Creating an Allowlist for Oracle Integration

When creating your allowlist, you must include all applications that require access to your instance. Here's the information you need.

 **Note:**

These tasks are required for Oracle Integration.

### Get the Outbound IP Addresses for Applications That Are Event Sources

You must add all event sources, such as Oracle Fusion Applications ERP events, to the allowlist. To do so, you must get the outbound IP address of the applications. Contact the application providers to get the IP addresses.

### Get the Public IP Addresses for Oracle SaaS Applications That Make HTTPS Calls to Oracle Integration

Oracle SaaS applications can make HTTPS calls to Oracle Integration depending on the design of the integration. Go to the **About** menu in Oracle Integration to get the public IP address of your SaaS instance to add to the allowlist in Oracle Integration. See [Obtain the NAT Gateway IP Address of the Oracle Integration Instance](#).

Some examples:

- Integrations using SaaS adapter connections for trigger and callbacks
- When the connectivity agent is used with an adapter that does polling, such as for database polling and invoking
- When the connectivity agent is used to communicate with Oracle Integration

For a list of external IP addresses by data center that you can add to your allowlist for web service calls initiated by Oracle Cloud Applications, see the support note [ID 1903739.1: IP Whitelist for Web Service Calls Initiated by Oracle Cloud Applications](#).

## Configure an Allowlist for Your Instance

Your allowlist can contain up to 15 rules for HTTPS connections to the Oracle Integration instance. The allowlist restrictions that you create are in addition to the standard authorization mechanisms, such as user credentials, which are always in place.

1. Sign in to the Oracle Cloud Infrastructure Console.
2. In the **Display Name** column, click the instance to edit.
3. On the Integration Instance Details page, below Resources in the lower left, select **Network Access**.
4. Below the Network Access header, click **Edit**.

The Network Access dialog is displayed. If your list is empty, the first blank allowlist rule is added for you.

5. Complete the fields at the top of the dialog:

- **Restrict Network Access:** Select this option to be able to add allow list rules and to apply the rules. When this option is selected, only users from networks that meet the configured settings are allowed to access the integration instance. When this option is not selected, there are no allowlist rules and there are no network restrictions to access your instance.

 **Caution:**

If you deselect **Restrict Network Access** after configuring allowlist rules, all configured allowlist rules are deleted.

- **Enable Loopback:** Select this option to allow the integration to call itself.

 **Note:**

If you enable loopback, any Oracle Integration instance in your region can call your instance.

Loopback is required for certain calls. You must enable loopback for the following scenarios:

- To invoke an Oracle Integration API from within an integration. Use a REST connection to call the API.
- To call your integration from *another* Oracle Integration instance.

6. Configure your allowlist rules.

- To add a rule, click **Add Rule**, located below the last rule in the list. You might need to scroll down to see the button.
- In the **Type** field, select the type of rule to configure.
  - **IP Address/CIDR Block:** Configure access from an IP address or an IP address range.
  - **Virtual Cloud Network:** Configure access from a specific virtual cloud network. To display a list of networks in other compartments, click **Change Compartment**. In addition to a specific virtual cloud network, you can specify an IP address or IP address range within the virtual cloud network.
  - **Virtual Cloud Network OCID:** Provide access to an Oracle Cloud ID (OCID) of the virtual cloud network. For information about the OCID format see [Resource Identifiers](#).

7. After adding all the desired rules to the allowlist, click **Save Changes**.

The work request is submitted and the changes go into effect when the instance status changes to **Active**. In the instance details, under **Integration Instance Information**, you'll also notice **Network Access: Restricted**.

# Configure Email Authentication Settings for SPF and DKIM

Configure email authentication settings for SPF and DKIM for integrations and processes. Apply these settings to your domain, then verify their configuration.

A simple yet effective way to validate emails, avoid spoofing, and reduce fraud attacks is configuring SPF and DKIM. Depending on email infra security, you may need to configure SPF and DKIM.

- Sender Policy Framework (SPF) lets domain owners identify servers they have approved to send emails on behalf of their domain. In Oracle Integration's case, domain owners need to approve OCI as an approved sender and to add a record for it in their domain.
- DomainKeys Identified Mail (DKIM) authenticates emails through a pair of cryptographic keys: a public key published in a Domain Name System TXT record, and a private key encrypted in a signature affixed to outgoing messages. The keys are generated by the email service provider.

Follow these steps to configure settings for SPF and DKIM. Also see [An Advanced Guide to OIC Notification via Emails](#).

## 1. Configure SPF (Sender Policy Framework).

Add an SPF record to the domain of the `from` address to include the Oracle Cloud Infrastructure email delivery domain.

Use the format below for the SPF record. The SPF record must identify the continent key of the Oracle Integration instance, as shown in the examples below.

```
v=spf1 include:<continentkey>.oracleemaildelivery.com ~all
```

| Sending Region                  | Example SPF Format                                                                                                               |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| America                         | v=spf1 include:rp.oracleemaildelivery.com ~all                                                                                   |
| Asia/Pacific                    | v=spf1 include:ap.rp.oracleemaildelivery.com ~all                                                                                |
| Europe                          | v=spf1 include:eu.rp.oracleemaildelivery.com ~all                                                                                |
| All Commercial Regions          | v=spf1 include:rp.oracleemaildelivery.com<br>include:ap.rp.oracleemaildelivery.com<br>include:eu.rp.oracleemaildelivery.com ~all |
| United Kingdom Government Cloud | v=spf1 include:rp.oraclegovemaildelivery.uk ~all                                                                                 |

In earlier Oracle Integration instances, sender verification was supported by adding the standard record `include:spf_c.oraclecloud.com` to the domain of the `from` address.

## 2. Configure DKIM (DomainKeys Identified Mail).

To configure DKIM keys for Oracle Integration Generation 2 instances, please log a Service Request in My Oracle Support. Include the following details:

- selector name
- key size
- `from` address that will be used to send emails

Oracle provides you with the details to add the CNAME DNS record for your domain. The instructions to add the DNS record depend on your domain provider. The CNAME contains the location of the public key.

For example, for a selector name of `me-yyz-20200502`, a sending domain of `mail.example.com`, and an email region code of `yyz`, the CNAME looks like this:

```
me-yyz-20200502._domainkey.mail.example.com IN CNAME me-yyz-20200502.mail.example.com.dkim.yyz1.oracleemaildelivery.com
```

Once the DNS is updated, update the service request, and Oracle will activate the DKIM settings for your domain.

3. In Oracle Integration, configure approved senders and confirm SPF and DKIM configuration.
  - a. From the navigation pane, select **Settings**, then **Integrations**, then **Notifications**. The Notifications screen is displayed.
  - b. In the **Senders** section, click `+` to add approved senders, and complete the following fields.

| Field                  | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Email Address</b>   | Enter your domain email address as the <b>from</b> address. You must set SPF and DKIM if using your own domain email address.                                                                                                                                                                                                                                                                                                                                                           |
| <b>Approval Status</b> | Indicates email address approval. Green indicates the address is approved. Yellow indicates the address is not yet approved.<br>Email address approval is based on your version of Oracle Integration. In Oracle Integration, a verification email is sent. You must click the verification link you receive in the email. Upon successful verification, status is changed to green. In Oracle Integration Generation 2, the email is automatically approved when you add the email ID. |
| <b>SPF Status</b>      | This field verifies configuration for the Sender Policy Framework (SPF) for the sender email addresses. The status should be <i>Configured</i> .                                                                                                                                                                                                                                                                                                                                        |
| <b>Confirm DKIM</b>    | Check this field to confirm DKIM configuration for the sender.                                                                                                                                                                                                                                                                                                                                                                                                                          |

- c. Click **Save**.

For information about email notifications in integrations, see Sending Service Failure Alerts, System Status Reports, and Integration Error Reports by Notification Emails in *Using Integrations in Oracle Integration Generation 2*. Also see Send Notification Emails During Stages of the Integration with a Notification Action in *Using Integrations in Oracle Integration Generation 2*.

For information about email notifications in processes, see Enable Email Notifications in *Using Processes in Oracle Integration Generation 2*.

## Troubleshoot Oracle Cloud Infrastructure Notification Email Configuration to Ensure Proper Delivery

Follow these recommendations to correctly configure and use the default `from` address and suppression list. These recommendations help you to avoid email delivery issues.

### Default From Address

- Don't use `no-reply@oracle.com` as the `from` address.
- Don't use the oracle domain.

- Change the `from` address from `no-reply@oracle.com` to `no-reply@mail.integration.region.ocp.oraclecloud.com`.  
The `region` attribute is provided by Oracle Integration.
- Change the `from` address in your integrations from `no-reply@oracle.com` to `no-reply@mail.integration.region.ocp.oraclecloud.com`.  
The `region` attribute is provided by Oracle Integration.

### Suppression List

- Add `To` addresses to the suppression list for a number of reasons:
  - As of now, the `recipient` address when a hard bounce occurs (emails go undelivered for permanent reasons), when a soft bounce occurs (emails go undelivered for temporary reasons), and when a large number of emails are received are some of the reasons to add the `To` address to the suppression list.
- If DomainKeys Identified Mail (DKIM) and Sender Policy Framework (SPF) are not configured for the `from` address domain, the likelihood of having a bounce or messages being silently dropped by the receiving infrastructure is higher.
- You can remove email addresses from the suppression list. See Remove Email Addresses from the Suppression List in *Using Integrations in Oracle Integration Generation 2*.

## Capture the Activity Stream of Integrations in Oracle Cloud Infrastructure Console

You can use the public logging service capabilities of Oracle Cloud Infrastructure to collect and manage the activity stream (`ics-flow` log file) of integrations. When logging is enabled, a file called `activity-stream-json.log` that includes a subset of each line of messages in the `ics-flow` log file is created and pushed to Oracle Cloud Infrastructure for analysis.

See [Service Logs](#).

By default, thirty days of activity stream, customer-facing logs can be persisted. Up to six months of data can be stored in the Oracle Cloud Infrastructure Console. There are additional ways to store data for longer periods of time such as using a service connector hub, in which the log can be sent to your object storage or outside of Oracle Cloud Infrastructure. You can also disable logging, as necessary.

The Oracle Cloud Infrastructure logging service provides a highly scalable and fully managed logging environment. See [Logging Overview](#).

You can also still access the same activity stream details from the monitoring section of Oracle Integration. See [View the Dashboard](#) in *Using Integrations in Oracle Integration Generation 2*.

The following steps describe how to create a log group and enable the log from the main logging service page in Oracle Cloud Infrastructure. If you want, you can also create a log group and enable the log from the Oracle Integration instance details page. Select **Log** in the left navigation pane, click the **Enable Log** icon in the table, and complete the fields in the dialog box that is displayed.

1. Open the navigation menu and click **Logging**.
2. Under **Logging** in the left navigation pane, click **Log Groups**.
3. From the **Compartment** list, select the compartment to use.
4. Click **Create Log Group**.

5. Enter a log group name, optional description, tag, and click **Create**.
6. Under **Resources**, click **Logs**.
7. Click **Enable service log**.

The Enable Resource Log dialog is displayed.

8. Enter the following details.

| Field                       | Description                                                                          |
|-----------------------------|--------------------------------------------------------------------------------------|
| <b>Resource Compartment</b> | Select a resource compartment if you want to change the one you previously selected. |
| <b>Service</b>              | Select <b>Integration</b> (the identifier for Oracle Integration).                   |
| <b>Resource</b>             | Select the Oracle Integration instance.                                              |
| <b>Log Category</b>         | Select <b>Activity Stream</b> .                                                      |
| <b>Log Name</b>             | Enter a log name.                                                                    |

9. Click **Enable Log**.

The details page for the log is displayed. The **Status** field indicates that the log creation is in progress. Once log creation is complete and activated, you can perform tasks such as disabling the log (it is automatically enabled), editing the log name, changing the log group, adding tags, and deleting the log.

You can also and take actions on your logs by creating rules to export your contents.

10. In the **Explore Log** section, sort and filter logs by the time.
11. Click **Explore with Log Search** to perform specific searches and analyze logs. See [Searching Logs](#).

## Preserve Your Instance Data

You can preserve your Oracle Integration instance data.

If you want to preserve individual integrations, there are several methods. Once exported, you can store the integrations in your own source control repository or preserve them using whatever method you want.

- Preserve individual integrations. See [Export and Import Design-Time Metadata Between Instances](#).
- Group your integrations into a package. When you import or export the package to or from Oracle Integration, all integrations in that package are imported or exported. See [Manage Packages](#) in *Using Integrations in Oracle Integration Generation 2*.
- Available APIs:
  - [Packages REST Endpoints](#)
  - [Integrations REST Endpoints](#) (to import and export individual integrations)

See [Oracle and Customer Responsibilities in Oracle Integration Generation 2](#).

# Move Oracle Integration Instances to a Different Region

You can move your Oracle Integration instances to a different region. If you are considering this type of move, here are some best practices to ensure the move is smooth.

## Note:

You cannot move an Oracle Integration instance from one tenancy to another tenancy within the same region, but you can export/import integrations across tenancies with appropriate permissions for object storage or explicit transfer of the export file.

- Use a custom endpoint for your Oracle Integration instances. See [Configure a Custom Endpoint for an Instance](#). Ensure all clients are using the new custom endpoint.
- Export and import design-time metadata to move the existing configuration to the new instance in the new region. See [Export and Import Design-Time Metadata Between Instances](#).
- Do as much verification in the new region as possible. However, do not start polling or schedules to avoid duplicate processing.
- Configure the same custom endpoint for the new instance, but do *not* update the DNS Canonical Name (CNAME) at this time.
- When all verification in the new region is complete and all non-polling integrations are activated, switch the custom endpoint CNAME to point to the new Oracle Integration instance hostname.
- Deactivate the polling integrations and stop the schedules in the old instance.
- Activate the polling integrations and start the schedules in the new instance.
- If using File Server, a load balancer is probably required in each region and hostname. The load balancer performs port mapping because there is no guarantee that the File Server port number matches across instances. This is a great opportunity to use a standard SFTP port for external clients, along with a hostname. Once the load balancer is set up in each region and verified to be working, you can switch the hostname to the new region load balancer when you are ready to move traffic to the new File Server.
- These best practices can be used to move to a new stripe. However, both instances cannot be active at the same time and the original instance must be deleted.

# Rename a Tenancy

You can rename the tenancy that includes your service instance. The name change does *not* impact the following:

- Your service instance.
- Other Oracle Integration resources.

For example, if the tenancy name in your URL was `global-chips` prior to tenancy renaming, the original name continues to be used unchanged:

`https://myoic-global-chips-px.integration.ocp.oraclecloud.com/ic/home`

See [Renaming a Tenancy and Cloud Account](#).

If your service instance needs to use the new tenancy name, you must perform the following steps:

1. Provision a new service instance in the renamed tenancy.
2. Clone (create) and export archives of the integration design-time metadata from the original service instance.
3. Import the archives into the new service instance.

See [Export and Import Design-Time Metadata Between Instances](#) in *Provisioning and Administering Oracle Integration Generation 2*.

# Monitor Oracle Integration Generation 2 Instances

Monitor your Oracle Integration instance and its features.

## Monitor Features:

- Monitor Integrations in *Using Integrations in Oracle Integration Generation 2*
- Monitor and Adjust Processes in *Using Processes in Oracle Integration Generation 2*
- Work with Consoles and Dashboards in Insight in *Using Integration Insight in Oracle Integration*

## Topics:

- [View Message Metrics](#)
- [Monitor Billable Messages](#)
- [Calculate Requests Per Second](#)

## View Message Metrics

You can view charts that show the total number of Integration message requests received, message requests that succeeded, and message requests that failed for each instance in Oracle Integration. You can also view charts that show adapter inbound processing and outbound message invocation times and adapter inbound and outbound requests.

Use the metrics data to monitor resources associated with Oracle Integration along with the endpoints (that is, applications) being integrated with Oracle Integration. Monitoring can help detect anomalies and bottlenecks occurring within the Oracle Integration instances and/or within the connected applications.

- [Access Monitoring Metrics](#)
- [View Message Request Metrics](#)
- [View Endpoint Metrics](#)

Oracle Integration uses the Oracle Cloud Infrastructure Monitoring service. The Oracle Cloud Infrastructure Monitoring service enables you to actively and passively monitor your cloud resources using the metrics and alarms features. See [Monitoring Overview](#).

### Access Monitoring Metrics

1. Ensure you have permission to view message metrics for the compartment.
  - If you are an administrator with manage access, you can automatically view message metrics for the compartment. For manage access, you must be part of an Oracle Cloud Infrastructure group assigned a `manage` policy.
  - If you are an administrator with read only access, you must be part of an Oracle Cloud Infrastructure group assigned a `read metrics` policy.

For example:

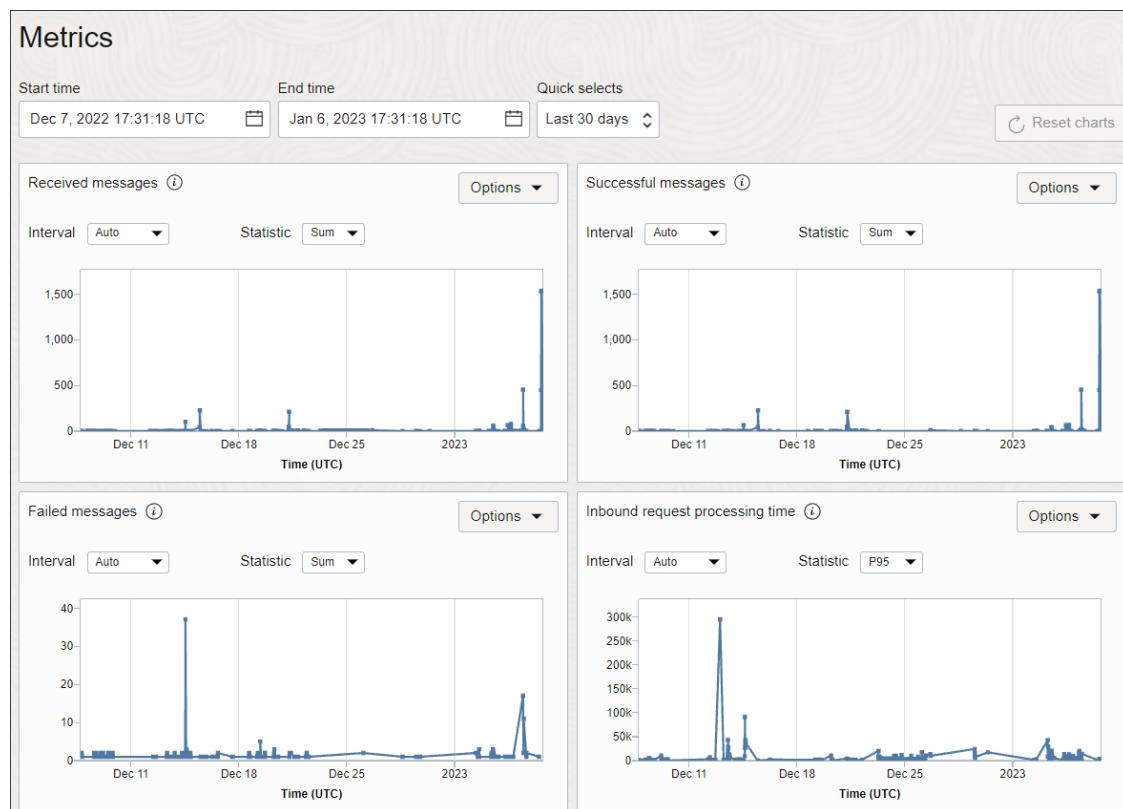
- **Syntax:** allow group *group\_name* to verb *resource-type* in compartment *compartment-name*
- **Policy:** allow group *oci-integration-admins* to read metrics in compartment *OICPMCompartmet*

See [Set Up Users, Groups, and Policies](#).

2. Open the navigation menu and click **Developer Services**. Under **Application Integration**, click **Integration**.
3. Select an instance in the Oracle Cloud Infrastructure Console. A **Metrics** section shows seven graphs with default values.

### View Message Request Metrics

You can view charts showing the number of message requests the instance has received, the number of message requests that completed successfully, and the number of message requests that did not complete successfully are displayed.



1. Change the message metrics displayed for each chart, if needed. Metric counts occur every five minutes.  
**Start Time** and **End Time** are selected at the top of each chart. Change these values to select a different time period.
2. Change the **Interval** and **Statistic** fields for each chart to change the metrics displayed.
3. Click **Options** on the top right of each chart to navigate to the Metrics Explorer to create custom dashboards and alerts. For more information about monitoring in Oracle Cloud Infrastructure, see [Viewing Default Metric Charts](#).

## View Endpoint Metrics

You can configure and view metrics charts that show adapter inbound request processing times, outbound request invocation times, adapter inbound request numbers, and adapter outbound request numbers.

Endpoint metrics include the following dimensions that are available for selection in the Metrics Explorer:

- `resourceId`: Represents the OCID of the integration instance.
- `integrationFlowIdentifier`: Represents the integration receiving an incoming request or sending an outgoing request. The dimension includes both the identifier and the version.
- `adapterIdentifier`: Represents the adapter (internal name) that is either used as a trigger for receiving or as an invoke for sending the request to the external system.
- `inboundProcessingEndpointInformation`: Represents the functional request received from the client.
- `inboundProcessingResponseStatus`: Represents the status sent by the trigger to the external client.
- `outboundInvocationEndpointInformation`: Represents the functional request made to the external system.
- `outboundInvocationResponseStatus`: Represents the status received from the external system.

The metrics listed in the following tables are automatically available for selection for any instance you create.

The `inboundProcessingEndpointInformation` or `outboundInvocationEndpointInformation` dimension provides a concise summary of the adapter trigger or invoke configurations. For example, the `inboundProcessingEndpointInformation` dimension can look for 'Receive Incident Created notification from ServiceNow' for an integration that is triggered when an incident is created in the ServiceNow application. On the invoke side, the `outboundInvocationEndpointInformation` dimension can look for 'Create Account in Salesforce.com' if the invoke activity in the integration is configured to create an Account object in Salesforce.com.

The following table describes the available metrics and dimensions. The Commonly Used Statistics in Metrics Explorer column provides the following information.

- Mean: Average processing time (latency) taken for incoming requests received during the time interval and average invocation time taken by outbound requests sent during the time interval.
- Min: Minimum processing time (latency) taken for incoming requests received during the time interval and minimum invocation time taken by outbound requests sent during the time interval.
- Max: Maximum invocation time taken by outbound requests sent during the time interval and maximum processing time (latency) taken for incoming requests received during the time interval.
- P50: Maximum invocation time (latency) taken by 50% of outbound requests sent during the time interval and maximum processing time (latency) taken by 50% of incoming requests received during the time interval.
- P90: Maximum invocation time (latency) taken by 90% of outbound requests sent during the time interval and maximum processing time (latency) taken by 90% of incoming requests received during the time interval.

- P95: Maximum invocation time (latency) taken by 95% of outbound requests sent during the time interval and maximum processing time (latency) taken by 95% of incoming requests received during the time interval.
- P99: Maximum invocation time (latency) taken by 99% of outbound requests sent during the time interval and maximum processing time (latency) taken by 99% of incoming requests received during the time interval.
- Count: Total number of requests received during the time interval and total number of outbound requests made during the time interval.

| Metric Name in Metrics Explorer | Unit                     | Description                                                                                                                                                                                                                                                                                                                                                                                                    | Dimension Name in Metrics Explorer                                                                                                                                                                                            | Commonly Used Statistics in Metrics Explorer                                                                                                       |
|---------------------------------|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| InboundRequestProcessingTime    | Duration in milliseconds | <p>The time taken for processing inbound requests. In case of synchronous requests, it is the total time taken for processing a request and sending the response. In case of fire-and-forget inbound requests, it is the time taken to persist the request and send the acknowledgement.</p> <p>This metric captures the time elapsed (in milliseconds) by the trigger in processing the incoming request.</p> | <ul style="list-style-type: none"> <li>• resourceid</li> <li>• integrationFlowIdentifier</li> <li>• adapterIdentifier</li> <li>• inboundProcessingEndpointInformation</li> <li>• inboundProcessingResponseStatus</li> </ul>   | <ul style="list-style-type: none"> <li>• Mean</li> <li>• Min</li> <li>• Max</li> <li>• P50</li> <li>• P90</li> <li>• P95</li> <li>• P99</li> </ul> |
| OutboundRequestInvocationTime   | Duration in milliseconds | <p>This metric captures the time (in milliseconds) spent by the adapter during the invocation of the target endpoint.</p>                                                                                                                                                                                                                                                                                      | <ul style="list-style-type: none"> <li>• resourceid</li> <li>• integrationFlowIdentifier</li> <li>• adapterIdentifier</li> <li>• outboundInvocationEndpointInformation</li> <li>• outboundInvocationResponseStatus</li> </ul> | <ul style="list-style-type: none"> <li>• Mean</li> <li>• Min</li> <li>• Max</li> <li>• P50</li> <li>• P90</li> <li>• P95</li> <li>• P99</li> </ul> |

| Metric Name in Metrics Explorer | Unit  | Description                                                                                                                                                                                                                                                                                                                                                                  | Dimension Name in Metrics Explorer                                                                                                                                                                                  | Commonly Used Statistics in Metrics Explorer |
|---------------------------------|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
| NumberOfInboundRequests         | count | <p>This metric captures the number of requests received by Oracle Integration using any adapter-specific trigger connection. This metric includes the HTTPs requests posted to Oracle Integration and the messages polled by adapters such as Oracle Advanced Queuing (AQ) Adapter, IBM MQ Series JMS Adapter, Apache Kafka Adapter, Oracle Database Adapter, and so on.</p> | <ul style="list-style-type: none"> <li>resourceid</li> <li>integrationFlowIdentifier</li> <li>adapterIdentifier</li> <li>inboundProcessingEndpointInformation</li> <li>inboundProcessingResponseStatus</li> </ul>   | Count                                        |
| NumberOfOutboundRequests        | count | <p>This metric captures the number of outbound requests sent by the adapter as part of the invoke activity in Oracle Integration.</p>                                                                                                                                                                                                                                        | <ul style="list-style-type: none"> <li>resourceid</li> <li>integrationFlowIdentifier</li> <li>adapterIdentifier</li> <li>outboundInvocationEndpointInformation</li> <li>outboundInvocationResponseStatus</li> </ul> | Count                                        |

The following table describes how each adapter maps to its dimension value in the Metrics Explorer.

| Dimension Value in Metrics Explorer | Adapter Display Name                     | Inbound Processing Event Information<br>Naming Conventions in Dimension Value Field                                                                             | Outbound Invocation Endpoint Information<br>Naming Conventions in Dimension Value Field                                                                                                                                                                                                |
|-------------------------------------|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| adobeesign                          | Adobe eSign Adapter                      | N/A                                                                                                                                                             | <ul style="list-style-type: none"> <li>Retrieve status of agreement from Adobe eSign</li> <li>Upload a document in Adobe eSign</li> <li>Retrieve IDs of agreement from Adobe eSign</li> <li>Retrieve URL of the document from Adobe eSign</li> </ul>                                   |
| adwdatabase                         | Oracle Autonomous Data Warehouse Adapter | <ul style="list-style-type: none"> <li>New row is inserted into &lt;table name&gt; in Oracle ADW</li> </ul>                                                     | <ul style="list-style-type: none"> <li>Insert rows into &lt;table name&gt; in Oracle ADW</li> <li>Merge rows into &lt;table name&gt; in Oracle ADW</li> <li>Update rows into &lt;table name&gt; in Oracle ADW</li> </ul>                                                               |
| apachekafka                         | Apache Kafka Adapter                     | <ul style="list-style-type: none"> <li>Consume latest message from Topic: [TopicName=&lt;Topic&gt;,Partitions={&lt;Partitions&gt;}]] in Apache Kafka</li> </ul> | <ul style="list-style-type: none"> <li>Produce message(JSON) in Topic: [TopicName=&lt;Topic&gt;,Partitions={&lt;Partitions&gt;}]] using Apache Kafka</li> <li>Consume latest message from Topic: [TopicName=&lt;Topic&gt;,Partitions={&lt;Partitions&gt;}]] in Apache Kafka</li> </ul> |
| aq                                  | Oracle Advanced Queuing (AQ) Adapter     | <ul style="list-style-type: none"> <li>Consume &lt;message type&gt; message from Queue: &lt;queue name&gt; in Oracle Advanced Queueing (AQ)</li> </ul>          | <ul style="list-style-type: none"> <li>Produce &lt;message type&gt; message in Queue: &lt;queue name&gt; using Oracle Advanced Queueing (AQ)</li> </ul>                                                                                                                                |

| Dimension Value in Metrics Explorer | Adapter Display Name                             | Inbound Processing Event Information<br>Naming Conventions in Dimension Value Field                           | Outbound Invocation Endpoint Information<br>Naming Conventions in Dimension Value Field                                                                                                                                                                                                                                                                                                    |
|-------------------------------------|--------------------------------------------------|---------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ariba                               | SAP Ariba Adapter                                | <ul style="list-style-type: none"> <li>Receive notification from &lt;operation name&gt; from Ariba</li> </ul> | <ul style="list-style-type: none"> <li>Create &lt;business object&gt; in SAP Ariba</li> <li>Bulk upload for the task - &lt;task name&gt; &lt;Data Mode: Master/Transactional, Operation Mode: Incremental/Full&gt; in SAP Ariba</li> <li>Bulk extract for the task - &lt;task name&gt; &lt;Data Mode: Master/Transactional, Operation Mode: Incremental/Full&gt; from SAP Ariba</li> </ul> |
| as2adapter                          | AS2 Adapter                                      | N/A                                                                                                           | N/A                                                                                                                                                                                                                                                                                                                                                                                        |
| atpdatabase                         | Oracle Autonomous Transaction Processing Adapter | <ul style="list-style-type: none"> <li>New row is inserted into &lt;table name&gt; in Oracle ATP</li> </ul>   | <ul style="list-style-type: none"> <li>insert rows into &lt;table name&gt; in Oracle ATP</li> <li>Merge rows into &lt;table name&gt; in Oracle ATP</li> <li>Update rows into &lt;table name&gt; in Oracle ATP</li> </ul>                                                                                                                                                                   |
| aarpa                               | Automation Anywhere Adapter                      | N/A                                                                                                           | N/A                                                                                                                                                                                                                                                                                                                                                                                        |
| bbtranslationadapter                | EDI Translate Action                             | N/A                                                                                                           | <ul style="list-style-type: none"> <li>B2B EDI Translation</li> </ul>                                                                                                                                                                                                                                                                                                                      |
| box                                 | Box Adapter                                      | N/A                                                                                                           | N/A                                                                                                                                                                                                                                                                                                                                                                                        |

| Dimension Value in Metrics Explorer | Adapter Display Name                  | Inbound Processing Event Information Naming Conventions in Dimension Value Field                                   | Outbound Invocation Endpoint Information Naming Conventions in Dimension Value Field                                                                                                                                                                                                                                                                                                                                                                         |
|-------------------------------------|---------------------------------------|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| concur                              | SAP Concur Adapter                    | NA                                                                                                                 | <ul style="list-style-type: none"> <li>• Create/Update/Delete/Retrieve &lt;business object&gt; in SAP Concur.</li> <li>• Extracts reports of available data objects in SAP Concur.</li> <li>• Manage payment batches and retrieve their batch files in SAP Concur.</li> <li>• Get status for the Job in Concur</li> <li>• Download file from Concur application</li> <li>• Bulk data extract request for AP/GL Extract V.3.04 submitted in Concur</li> </ul> |
| cpq                                 | Oracle CPQ Cloud Adapter              | N/A                                                                                                                | N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| database                            | Oracle Database Adapter               | <ul style="list-style-type: none"> <li>• New row is inserted into &lt;table name&gt; in Oracle Database</li> </ul> | <ul style="list-style-type: none"> <li>• Insert rows into &lt;table name&gt; in Oracle Database</li> <li>• Merge rows into &lt;table name&gt; in Oracle Database</li> <li>• Update rows into &lt;table name&gt; in Oracle Database</li> </ul>                                                                                                                                                                                                                |
| dbaasdatabase                       | Oracle Database Cloud Service Adapter | <ul style="list-style-type: none"> <li>• New row is inserted into &lt;table name&gt; in DBCS</li> </ul>            | <ul style="list-style-type: none"> <li>• Insert rows into &lt;table name&gt; in DBCS</li> <li>• Merge rows into &lt;table name&gt; in DBCS</li> <li>• Update rows into &lt;table name&gt; in DBCS</li> </ul>                                                                                                                                                                                                                                                 |
| db2database                         | IBM DB2 Adapter                       | <ul style="list-style-type: none"> <li>• New row is inserted into &lt;table name&gt; in DB2</li> </ul>             | <ul style="list-style-type: none"> <li>• Insert rows into &lt;table name&gt; in DB2</li> <li>• Merge rows into &lt;table name&gt; in DB2</li> <li>• Update rows into &lt;table name&gt; in DB2</li> </ul>                                                                                                                                                                                                                                                    |

| Dimension Value in Metrics Explorer | Adapter Display Name                                   | Inbound Processing Event Information Naming Conventions in Dimension Value Field                                                                                                                                                                                                                                                                                                   | Outbound Invocation Endpoint Information Naming Conventions in Dimension Value Field                                                                                                                                                                                                                                                           |
|-------------------------------------|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| docsign                             | DocuSign Adapter                                       | N/A                                                                                                                                                                                                                                                                                                                                                                                | <ul style="list-style-type: none"> <li>• Create and send an envelope in DocuSign</li> <li>• Send an envelope created from an existing template in DocuSign</li> <li>• Get status changes of an envelope from DocuSign</li> </ul>                                                                                                               |
| ebay                                | eBay Marketplace Adapter                               | N/A                                                                                                                                                                                                                                                                                                                                                                                | <ul style="list-style-type: none"> <li>• Get Single Record: &lt;Entity_NAME&gt;s from eBay</li> <li>• Get List of Records: &lt;Entity_NAME&gt;s from eBay</li> <li>• Create a Record: &lt;Entity_NAME&gt; in eBay</li> <li>• Update a Record: &lt;Entity_NAME&gt; in eBay</li> <li>• Delete a Record: &lt;Entity_NAME&gt; from eBay</li> </ul> |
| ebusiness                           | Oracle E-Business Suite Adapter                        | N/A                                                                                                                                                                                                                                                                                                                                                                                | N/A                                                                                                                                                                                                                                                                                                                                            |
| eloqua                              | Oracle Eloqua Cloud Adapter                            | N/A                                                                                                                                                                                                                                                                                                                                                                                | N/A                                                                                                                                                                                                                                                                                                                                            |
| epm                                 | Oracle Enterprise Performance Management Cloud Adapter | N/A                                                                                                                                                                                                                                                                                                                                                                                | N/A                                                                                                                                                                                                                                                                                                                                            |
| erp                                 | Oracle ERP Cloud Adapter                               | <ul style="list-style-type: none"> <li>• Receive notification for business event &lt;event name&gt; from ERP Cloud</li> <li>• Receive Status of ERP Import Job from ERP Cloud</li> <li>• Receive notification for business event OIC_MAT_349_FSC_M_PARENT from ERP Cloud</li> <li>• Request Object Account from ERP Cloud</li> <li>• Request Object Item from ERP Cloud</li> </ul> | <ul style="list-style-type: none"> <li>• Get ESS Job Status in ERP Cloud</li> <li>• Submit Contract For Approval in ERP Cloud</li> <li>• Bulk Import of data into ERP Cloud using FBDI Job: &lt;Job Name&gt;</li> <li>• Upload File to UCM in ERP Cloud</li> </ul>                                                                             |
| eventbrite                          | Eventbrite Adapter                                     | N/A                                                                                                                                                                                                                                                                                                                                                                                | N/A                                                                                                                                                                                                                                                                                                                                            |

| Dimension Value in Metrics Explorer | Adapter Display Name             | Inbound Processing Event Information<br>Naming Conventions in Dimension Value Field                                                                                                                                                                         | Outbound Invocation Endpoint Information<br>Naming Conventions in Dimension Value Field                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------------|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| facebook<br>file                    | Facebook Adapter<br>File Adapter | N/A<br><ul style="list-style-type: none"> <li>• Read file from server</li> <li>• Read and delete file from server</li> <li>• Read file recursively in directory from server</li> <li>• Read file recursively in directory and delete from server</li> </ul> | N/A<br><ul style="list-style-type: none"> <li>• Read file from Server</li> <li>• Write file &lt;FileName&gt; in directory &lt;DirName&gt;</li> <li>• Listing file with minimum age &lt;N&gt; seconds, maximum files in response &lt;M&gt; Recursive &lt;True False&gt;</li> <li>• Move file with Overwrite option &lt;True False&gt;</li> <li>• Delete file in Server</li> <li>• Download file in Oracle Integration from agent</li> </ul>                                                                                                                |
| ftp                                 | FTP Adapter                      | NA                                                                                                                                                                                                                                                          | <ul style="list-style-type: none"> <li>• Read file from FTP Server in (binary ASCII) format</li> <li>• Write	append) file to FTP Server in (binary ASCII) format</li> <li>• (Encrypt decrypt Sign\Verify) and Write file to FTP Server</li> <li>• List (Recursive) files from FTP Server</li> <li>• Move (Overwrite) files from FTP Server</li> <li>• Delete file in FTP Server</li> <li>• Download file from FTP Server in (binary ASCII) format</li> <li>• Download and (unzip decrypt Verify) file from FTP Server in (binary ASCII) format</li> </ul> |
| gmail                               | Gmail Adapter                    | N/A                                                                                                                                                                                                                                                         | <ul style="list-style-type: none"> <li>• Get email attachment from Gmail</li> <li>• List emails from Gmail</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                     |

| Dimension Value in Metrics Explorer | Adapter Display Name                    | Inbound Processing Event Information<br>Naming Conventions in Dimension Value Field                                                                                                                    | Outbound Invocation Endpoint Information<br>Naming Conventions in Dimension Value Field                                                                                                                                                                                                                                               |
|-------------------------------------|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| googlecalendar                      | Google Calendar Adapter                 | N/A                                                                                                                                                                                                    | N/A                                                                                                                                                                                                                                                                                                                                   |
| googletask                          | Google Task Adapter                     | N/A                                                                                                                                                                                                    | N/A                                                                                                                                                                                                                                                                                                                                   |
| hcm                                 | Oracle HCM Cloud Adapter                | Receive <business object> from Client                                                                                                                                                                  | <ul style="list-style-type: none"> <li>&lt;verb&gt; &lt;business object / noun&gt; in HCM Cloud</li> <li>&lt;verb&gt; &lt;rest resource&gt; from HCM Cloud</li> <li>Subscribe &lt;atom feed&gt; from HCM Cloud</li> <li>Download bulk extract &lt;extract name&gt; from HCM Cloud</li> <li>Upload File to UCM in HCM Cloud</li> </ul> |
| hybriscommerce                      | SAP Commerce Cloud (Hybris) Adapter     | N/A                                                                                                                                                                                                    | <ul style="list-style-type: none"> <li>Query/ Create/ Update / Delete &lt;business object&gt; in SAP Commerce Cloud</li> </ul>                                                                                                                                                                                                        |
| jdeeone                             | Oracle JD Edwards EnterpriseOne Adapter | N/A                                                                                                                                                                                                    | <ul style="list-style-type: none"> <li>Call JD Edwards SOAP Service &lt;SOAP Service&gt; : &lt;Operation&gt;</li> </ul>                                                                                                                                                                                                               |
| jms                                 | Oracle WebLogic JMS Adapter             | <ul style="list-style-type: none"> <li>Consume message from Queue: &lt;queue name&gt; in Oracle Weblogic JMS</li> <li>Consume message from Topic: &lt;topic name&gt; in Oracle Weblogic JMS</li> </ul> | <ul style="list-style-type: none"> <li>Produce message in Queue: &lt;queue name&gt; using Oracle Weblogic JMS</li> <li>Produce message in Topic: &lt;topic name&gt; using Oracle Weblogic JMS</li> </ul>                                                                                                                              |
| linkedin                            | LinkedIn Adapter                        | N/A                                                                                                                                                                                                    | N/A                                                                                                                                                                                                                                                                                                                                   |
| mailchimp                           | MailChimp Adapter                       | N/A                                                                                                                                                                                                    | N/A                                                                                                                                                                                                                                                                                                                                   |
| Marketo                             | Marketo Adapter                         | N/A                                                                                                                                                                                                    | <ul style="list-style-type: none"> <li>Create Or Update Lead in Marketo</li> <li>Import Lead in Marketo</li> </ul>                                                                                                                                                                                                                    |
| microsoftcalendar                   | Microsoft Calendar Adapter              | N/A                                                                                                                                                                                                    | N/A                                                                                                                                                                                                                                                                                                                                   |
| microsoftcontact                    | Microsoft Contact Adapter               | N/A                                                                                                                                                                                                    | N/A                                                                                                                                                                                                                                                                                                                                   |
| microsoftemail                      | Microsoft Email Adapter                 | N/A                                                                                                                                                                                                    | N/A                                                                                                                                                                                                                                                                                                                                   |

| Dimension Value in Metrics Explorer | Adapter Display Name                                  | Inbound Processing Event Information<br>Naming Conventions in Dimension Value Field                                                                                                                                  | Outbound Invocation Endpoint Information<br>Naming Conventions in Dimension Value Field                                                                                                                                                                                                 |
|-------------------------------------|-------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| mqjms                               | IBM MQ Series JMS Adapter                             | <ul style="list-style-type: none"> <li>Consume message from Queue: &lt;queue name&gt; in MQSeries JMS</li> </ul>                                                                                                     | <ul style="list-style-type: none"> <li>Produce message (Persistent) in Queue: &lt;Queue Name&gt; using MQSeries JMS</li> </ul>                                                                                                                                                          |
| mysqldatabase                       | MySQL Adapter                                         | <ul style="list-style-type: none"> <li>New row is inserted into &lt;table name&gt; in MySQL DB</li> </ul>                                                                                                            | <ul style="list-style-type: none"> <li>Insert rows into &lt;table name&gt; in MySQL DB</li> <li>Merge rows into &lt;table name&gt; in MySQL DB</li> <li>Update rows into &lt;table name&gt; in MySQL DB</li> </ul>                                                                      |
| netsuite                            | Oracle NetSuite Adapter                               | N/A                                                                                                                                                                                                                  | <ul style="list-style-type: none"> <li>Update Superseded Items in NetSuite</li> <li>Update EBS Item Details in NetSuite</li> <li>Add Invoice to NetSuite</li> <li>Search &lt;search&gt; in NetSuite</li> </ul>                                                                          |
| ocistreaming                        | Oracle Cloud Infrastructure Streaming Service Adapter | N/A                                                                                                                                                                                                                  | <ul style="list-style-type: none"> <li>Message produced to: Sales-SP with Partition/s: &lt;Partitions&gt; of MessageType &lt;Message Type&gt;</li> </ul>                                                                                                                                |
| ofsccloudadapter                    | Oracle Field Service Adapter                          | <ul style="list-style-type: none"> <li>Receive &lt;event-name&gt; notification from Oracle Field Service Cloud or</li> <li>Receive &lt;event1, event2...&gt; notification from Oracle Field Service Cloud</li> </ul> | <ul style="list-style-type: none"> <li>Get &lt;resource-name&gt; in Oracle Field Service Cloud</li> <li>Get &lt;resource-name&gt; &lt;sub-resource-name&gt; in Oracle Field Service Cloud</li> <li>&lt;custom-action&gt; &lt;resource-name&gt; in Oracle Field Service Cloud</li> </ul> |
| oms                                 | Oracle Messaging Cloud Service Adapter                | N/A                                                                                                                                                                                                                  | N/A                                                                                                                                                                                                                                                                                     |
| rest                                | REST Adapter                                          | <ul style="list-style-type: none"> <li>Trigger Oracle Integration REST Integration: &lt;HTTP verb&gt; &lt;resource path&gt;</li> </ul>                                                                               | <ul style="list-style-type: none"> <li>Call External REST API: &lt;verb&gt; &lt;relative-path&gt;</li> <li>Call &lt;App-name&gt;: &lt;verb&gt; &lt;relative-path&gt;</li> <li>Call Oracle Integration REST Integration: &lt;integration flow &gt;</li> </ul>                            |

| Dimension Value in Metrics Explorer | Adapter Display Name                                                           | Inbound Processing Event Information<br>Naming Conventions in Dimension Value Field                                                                                                                | Outbound Invocation Endpoint Information<br>Naming Conventions in Dimension Value Field                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------------|--------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| rest_opa                            | Oracle Intelligent Advisor Adapter (formerly Oracle Policy Automation) Adapter | <ul style="list-style-type: none"> <li>Receive \${load/save} request for &lt;interview&gt; from Intelligent Advisor</li> </ul>                                                                     | <ul style="list-style-type: none"> <li>Send assessment request for &lt;interview&gt; to Intelligent Advisor.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| rest_oraclecommerceclo<br>ud        | Oracle Commerce Cloud Adapter                                                  | N/A                                                                                                                                                                                                | N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| responsys                           | Oracle Responsys Adapter                                                       | N/A                                                                                                                                                                                                | N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| rightnow                            | Oracle Service Cloud (RightNow) Adapter                                        | <ul style="list-style-type: none"> <li>Receive &lt;event name&gt; Notification from Oracle Service Cloud</li> <li>Receive &lt;object name&gt; (Oracle Service Cloud Object) from Client</li> </ul> | <ul style="list-style-type: none"> <li>Query &lt;object name&gt; objects from Oracle Service Cloud</li> <li>Query CSV records for &lt;object name&gt; from Oracle Service Cloud</li> <li>Get file attachment from Oracle Service Cloud</li> <li>Invoke Batch Operation in Oracle Service Cloud</li> <li>Get &lt;object name&gt; from Oracle Service Cloud</li> <li>Create &lt;object name&gt; in Oracle Service Cloud</li> <li>Update &lt;object name&gt; in Oracle Service Cloud</li> <li>Destroy &lt;object name&gt; in Oracle Service Cloud</li> </ul> |
| oracleutilities                     | Oracle Utilities Adapter                                                       | <ul style="list-style-type: none"> <li>&lt;Description of the business object from the service catalog&gt; in Oracle Utilities</li> </ul>                                                          | <ul style="list-style-type: none"> <li>&lt;Description of the service from the service catalog&gt; in Oracle Utilities</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                         |

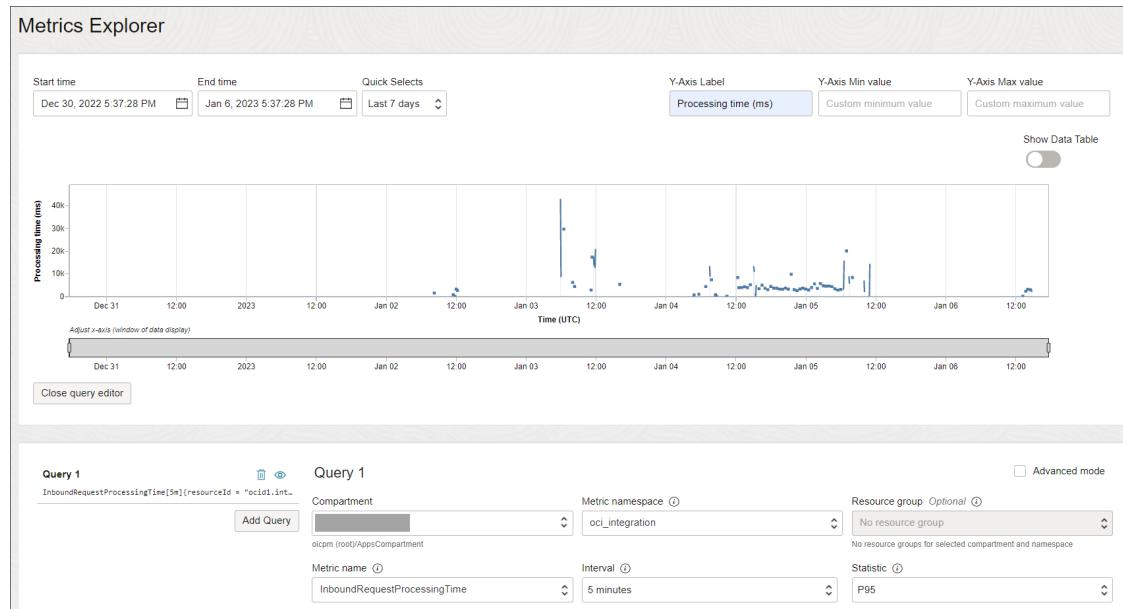
| Dimension Value in Metrics Explorer | Adapter Display Name                                                  | Inbound Processing Event Information Naming Conventions in Dimension Value Field                                                                                                                                                                                                                                                    | Outbound Invocation Endpoint Information Naming Conventions in Dimension Value Field                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------------|-----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| osc                                 | Oracle Engagement Cloud Adapter (formerly Oracle Sales Cloud) Adapter | <ul style="list-style-type: none"> <li>Request object &lt;object name &gt; from Engagement Cloud</li> <li>Request Object Account from Engagement Cloud</li> <li>Receive notification for business event FoundationParties_Person_Created from Engagement Cloud</li> <li>Request Object Opportunity from Engagement Cloud</li> </ul> | <ul style="list-style-type: none"> <li>Create Opportunity in Engagement Cloud</li> <li>Create ICS Sales Custom Obj CO in Engagement Cloud</li> </ul>                                                                                                                                                                                                                                                                                                                                   |
| logistics                           | Oracle Logistics Adapter                                              | N/A                                                                                                                                                                                                                                                                                                                                 | N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| paypal                              | PayPal Adapter                                                        | <ul style="list-style-type: none"> <li>Receive &lt;business object event&gt; notification from PayPal</li> </ul>                                                                                                                                                                                                                    | <ul style="list-style-type: none"> <li>For Query : &lt;operation&gt;from PayPal</li> <li>For Create/Update/ Delete:&lt;operation&gt; in PayPal</li> </ul>                                                                                                                                                                                                                                                                                                                              |
| salesforce                          | Salesforce Adapter                                                    | <ul style="list-style-type: none"> <li>Receive &lt;business object&gt; notifications from Salesforce.com</li> </ul>                                                                                                                                                                                                                 | <ul style="list-style-type: none"> <li>Create Account in <a href="#">Salesforce.com</a></li> </ul>                                                                                                                                                                                                                                                                                                                                                                                     |
| sap                                 | SAP Adapter                                                           | <ul style="list-style-type: none"> <li>Receive &lt;business object&gt; from SAP</li> </ul>                                                                                                                                                                                                                                          | <ul style="list-style-type: none"> <li>Invoke &lt;business object&gt; from SAP</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                              |
| saps4hana                           | SAP S/4HANA Cloud Adapter                                             | N/A                                                                                                                                                                                                                                                                                                                                 | <ul style="list-style-type: none"> <li>GET : Get specific item from the collection&lt;Entity_NAME&gt; from SAP S/4HANA</li> <li>GET : GetAll entities in the collections of &lt;Entity_NAME&gt; from SAP S/4HANA</li> <li>POST : Create new item in the collection &lt;Entity_NAME&gt; from SAP S/4HANA</li> <li>PATCH : Update new item in the collection &lt;Entity_NAME&gt; from SAP S/4HANA</li> <li>DELETE : Delete specific entity in the collection from SAP S/4HANA</li> </ul> |

| Dimension Value in Metrics Explorer | Adapter Display Name                                                                | Inbound Processing Event Information<br>Naming Conventions in Dimension Value Field                                                                        | Outbound Invocation Endpoint Information<br>Naming Conventions in Dimension Value Field                                                                                                                                                    |
|-------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| servicenow                          | ServiceNow Adapter                                                                  | <ul style="list-style-type: none"> <li>Receive &lt;business object&gt; notifications from ServiceNow</li> </ul>                                            | <ul style="list-style-type: none"> <li>For Query : &lt;operation&gt;from ServiceNow</li> <li>For Create/Update/Delete:&lt;operation&gt; in ServiceNow</li> <li>Upload Attachment to ServiceNow</li> </ul>                                  |
| shopify                             | Shopify Adapter                                                                     | <ul style="list-style-type: none"> <li>Receive &lt;business object event&gt; from Shopify</li> </ul>                                                       | <ul style="list-style-type: none"> <li>For Query : &lt;&lt;operationName&gt;&gt; from Shopify</li> <li>For Create/Update/Delete:&lt;&lt;operation Name&gt;&gt; in Shopify</li> </ul>                                                       |
| siebel                              | Oracle Siebel Adapter                                                               | N/A                                                                                                                                                        | <ul style="list-style-type: none"> <li>Call Siebel SOAP Service OS FS Get Stock Oracle Integration &lt;Service&gt;:&lt;Operation&gt;</li> </ul>                                                                                            |
| slack                               | Slack Adapter                                                                       | N/A                                                                                                                                                        | N/A                                                                                                                                                                                                                                        |
| SOAAdapter                          | Oracle SOA Suite Adapter (includes Oracle Service Bus and Oracle SOA Cloud Service) | N.A.                                                                                                                                                       | Call a << REST / SOAP >> service on a << SOA Composite / Service Bus project >>                                                                                                                                                            |
| soap                                | SOAP Adapter                                                                        | <ul style="list-style-type: none"> <li>Trigger Oracle Integration SOAP Integration for the interface &lt;Port Type&gt; : &lt;operation name&gt;</li> </ul> | <ul style="list-style-type: none"> <li>Call External SOAP API &lt;Port Type&gt; : &lt;operation-name&gt;</li> </ul>                                                                                                                        |
| sqlserverdatabase                   | Microsoft SQL Server Adapter                                                        | <ul style="list-style-type: none"> <li>New row is inserted into &lt;table name&gt; in MS SQL Server DB</li> </ul>                                          | <ul style="list-style-type: none"> <li>Insert rows into &lt;table name&gt; in MS SQL Server DB</li> <li>Merge rows into &lt;table name&gt; in MS SQL Server DB</li> <li>Update rows into &lt;table name&gt; in MS SQL Server DB</li> </ul> |

| Dimension Value in Metrics Explorer | Adapter Display Name                               | Inbound Processing Event Information<br>Naming Conventions in Dimension Value Field                                                          | Outbound Invocation Endpoint Information<br>Naming Conventions in Dimension Value Field                                                                                                                                                                                                                                                                                                   |
|-------------------------------------|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Successfactors                      | SAP SuccessFactors Adapter                         | <ul style="list-style-type: none"> <li>• Receive &lt;&gt;operationName&gt;&gt; &lt;&gt;BusinessObject&gt;&gt; from SuccessFactors</li> </ul> | <ul style="list-style-type: none"> <li>• Query data from SuccessFactors using SFQL query</li> <li>• Create &lt;&gt;BusinessObject&gt;&gt; in SuccessFactors</li> <li>• Update &lt;&gt;BusinessObject&gt;&gt; in SuccessFactors</li> <li>• Delete &lt;&gt;BusinessObject&gt;&gt; in SuccessFactors</li> <li>• Create or update &lt;&gt;BusinessObject&gt;&gt; in SuccessFactors</li> </ul> |
| sugarcrm                            | SugarCRM Adapter                                   | N/A                                                                                                                                          | <ul style="list-style-type: none"> <li>• For Query(Retrieve single/list of Records) : &lt;&gt;operation&gt;from SugarCRM</li> <li>• For Create/Update/ Delete:&lt;&gt;operation&gt; in SugarCRM</li> </ul>                                                                                                                                                                                |
| surveymonkey                        | SurveyMonkey Adapter                               | N/A                                                                                                                                          | N/A                                                                                                                                                                                                                                                                                                                                                                                       |
| otac                                | Oracle Talent Acquisition Cloud (Taleo EE) Adapter | N/A                                                                                                                                          | <ul style="list-style-type: none"> <li>• Get request status from Oracle Talent Acquisition Cloud (Taleo EE)</li> <li>• Get request status from Oracle Talent Acquisition Cloud (Taleo EE)</li> </ul>                                                                                                                                                                                      |
| trello                              | Trello Adapter                                     | N/A                                                                                                                                          | N/A                                                                                                                                                                                                                                                                                                                                                                                       |
| twilio                              | Twilio Adapter                                     | N/A                                                                                                                                          | N/A                                                                                                                                                                                                                                                                                                                                                                                       |
| twitter                             | Twitter Adapter                                    | N/A                                                                                                                                          | N/A                                                                                                                                                                                                                                                                                                                                                                                       |
| uipathrpa                           | UiPath Robotic Process Automation Adapter          | N/A                                                                                                                                          | N/A                                                                                                                                                                                                                                                                                                                                                                                       |
| workday                             | Workday Adapter                                    | N/A                                                                                                                                          | <ul style="list-style-type: none"> <li>• Create, Update, Delete, and Import records in Workday</li> <li>• Extract bulk data from workday</li> </ul>                                                                                                                                                                                                                                       |

| Dimension Value in Metrics Explorer | Adapter Display Name | Inbound Processing Event Information Naming Conventions in Dimension Value Field | Outbound Invocation Endpoint Information Naming Conventions in Dimension Value Field                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------------------------|----------------------|----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| zendesk                             | Zendesk Adapter      | N/A                                                                              | <ul style="list-style-type: none"> <li>Get Single Record: Get &lt;Entity_NAME&gt; from Zendesk</li> <li>Get List of Records: Get &lt;Entity_NAME&gt;s from Zendesk</li> <li>Create a Record: Create &lt;Entity_NAME&gt; in Zendesk</li> <li>Update a Record: Update &lt;Entity_NAME&gt; in Zendesk</li> <li>Update multiple Records: Update &lt;Entity_NAME&gt;s in Zendesk</li> <li>Update multiple Records in batches: Update &lt;Entity_NAME&gt;s in batches in Zendesk</li> <li>Search multiple Records: Search &lt;Entity_NAME&gt;s in Zendesk</li> <li>Delete a Record: Delete &lt;Entity_NAME&gt; from Zendesk</li> <li>Create or Update a Record: Create or Update &lt;Entity_NAME&gt; in Zendesk</li> <li>Upload an Attachment: Upload Attachment in Zendesk</li> <li>Redact Attachment: Redact Comment Attachment in Zendesk</li> </ul> |

The following example of an endpoint metrics chart is provided. The chart shows adapter inbound request processing times. A metrics namespace is provided that is a container for message metrics. The namespace identifies the service sending the metrics. The namespace for message metrics is `oci_integration`.



The following adapters do not publish inboundProcessingEndpointInformation and outboundInvocationEndpointInformation dimensions in the Metrics Explorer.

- Google Task Adapter
- Microsoft Contact Adapter
- Automation Anywhere Adapter
- Slack Adapter
- Oracle Responsys Adapter
- Oracle Commerce Cloud Adapter
- Oracle CPQ Cloud Adapter
- Oracle Eloqua Cloud Adapter
- Oracle Logistics Adapter
- AS2 Adapter
- UiPath Robotic Process Automation Adapter
- Oracle Messaging Cloud Service Adapter
- Oracle E-Business Suite Adapter

## Monitor Billable Messages

As an administrator, you can monitor the number of billable messages consumed in a selected Oracle Integration or Oracle Integration for SaaS instance.

### Oracle Integration consumption models

The type of license you choose determines how message packs are defined and metered. The Usage Metrics page is different for Oracle Integration versus Oracle Integration for SaaS.

- **For Oracle Integration:**

- **BYOL:** For Bring Your Own License users, one message pack is defined as 20,000 messages per hour. You can select up to 3 message packs if you bring an existing Oracle Fusion Middleware license to the cloud.
- **Non-BYOL:** For these license types, one message pack is defined as 5,000 messages per hour. You can select up to 12 message packs if you create a new Oracle Integration license in the cloud.
- **For Oracle Integration for SaaS**, usage is tracked on a monthly basis in packs of one million messages per month, which keeps costs predictable even when you have unpredictable hourly volumes. Usage is reported monthly instead of hourly. You can select up to 43 message packs.

### Oracle Integration features included

Usage metrics cover the following features.

#### Note:

Visual Builder message consumption is not included in Oracle Integration usage metrics.

| Oracle Integration Feature | Usage                                                                                                                                                                                                                                                                                                                                               |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Integration                | For details on how Integration billable messages are calculated, see <a href="#">About Integrations Usage</a> .                                                                                                                                                                                                                                     |
| Process                    | Process metering tracks the number of concurrent, unique users interacting within a 1 hour interval. Sizing is based on concurrent users, which are converted to message packs. One Process user/hour is equivalent to 400 messages/hour.<br>For details on how Process billable messages are calculated, see <a href="#">About Process Usage</a> . |
| Integration Insight        | Each business transaction in Insight counts as one message.                                                                                                                                                                                                                                                                                         |
| File Server                | There is no extra cost associated with File Server. When using the FTP adapter to write files in File Server in Oracle Integration, the standard pricing applicable to the FTP adapter applies. Any file read or write over 50KB is considered a message. For example, 110KB is considered 3 messages (50KB each).                                  |

#### Note:

Internal calls within the same Oracle Integration instance aren't counted as messages. See each usage section to understand how messages are counted when features are used together.

### Viewing usage metrics

1. On the Home page, select **Monitoring** in the navigation pane, then **Usage Metrics**.  
The Usage Metrics page is displayed.

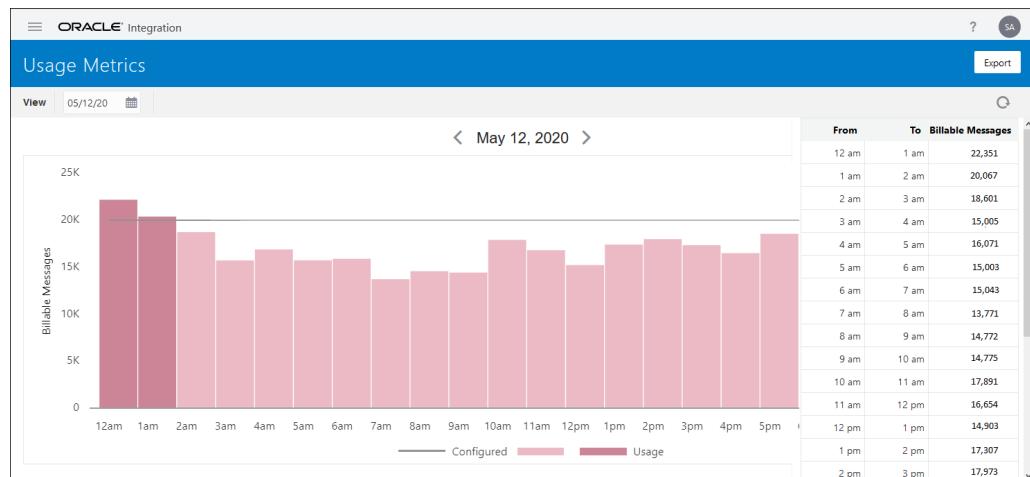
 **Note:**

Data metrics are displayed using UTC standard time.

- **For Oracle Integration**

The Usage Metrics page shows the total messages used during each hour of a selected day. In the example illustration below, the blue **Configured** 5K line shows that the Oracle Integration instance was configured for 5,000 messages per hour during provisioning. Values below the configured usage are shown in light pink and values above it are shown in dark pink.

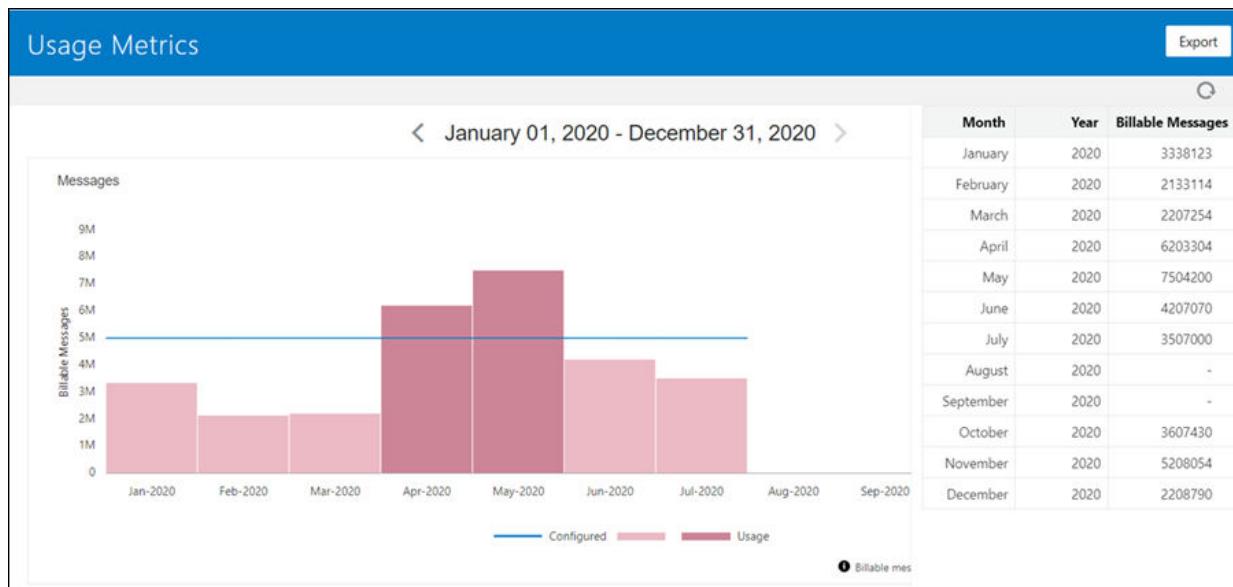
- To view messages consumed on a different date, select a date using the View calendar.
- Hover the cursor over an hour time period to view its approximate message consumption.
- Click  in the upper right of the screen to expand a table that lists each hour and its billable messages for the selected day.



- **For Oracle Integration for SaaS**

The Usage Metrics page for SaaS shows the total messages used during each month. In the example illustration below, the blue **Configured** 5M line shows that the Oracle Integration for SaaS instance was configured for 5 million messages per month during provisioning. Values below the configured usage are shown in light pink and values above it are shown in dark pink.

- To view messages consumed during a different timeframe, select another timeframe using the View calendar.
- Hover the cursor over a month time period to view its approximate message consumption.
- Click  in the upper right of the screen to expand a table that lists each month and its billable messages.



2. Export usage metrics to a CSV file, if needed.
  - a. Click **Export**.
  - b. In the Export Usage Metrics dialog, select a start date and end date and click **Export**.  
Each hour is depicted as a record. A maximum of 1000 hours of information (shown as lines in the CSV file) can be exported.
  - c. Use your browser's download list to access the CSV file.

The exported file shows columns for the date, configured messages, and total messages consumed.

| A  | B                   | C          |       |
|----|---------------------|------------|-------|
| 1  | DATETIME            | Configured | Total |
| 2  | 2019-12-09T00:00:00 | 5000       | 5393  |
| 3  | 2019-12-09T01:00:00 | 5000       | 8710  |
| 4  | 2019-12-09T02:00:00 | 5000       | 8860  |
| 5  | 2019-12-09T03:00:00 | 5000       | 6797  |
| 6  | 2019-12-09T04:00:00 | 5000       | 6420  |
| 7  | 2019-12-09T05:00:00 | 5000       | 6057  |
| 8  | 2019-12-09T06:00:00 | 5000       | 6840  |
| 9  | 2019-12-09T07:00:00 | 5000       | 8880  |
| 10 | 2019-12-09T08:00:00 | 5000       | 8940  |
| 11 | 2019-12-09T09:00:00 | 5000       | 8956  |
| 12 | 2019-12-09T10:00:00 | 5000       | 8874  |
| 13 | 2019-12-09T11:00:00 | 5000       | 9160  |
| 14 | 2019-12-09T12:00:00 | 5000       | 8660  |
| 15 | 2019-12-09T13:00:00 | 5000       | 9100  |
| 16 | 2019-12-09T14:00:00 | 5000       | 8970  |
| 17 | 2019-12-09T15:00:00 | 5000       | 9040  |
| 18 | 2019-12-09T16:00:00 | 5000       | 8970  |
| 19 | 2019-12-09T17:00:00 | 5000       | 8960  |
| 20 | 2019-12-09T18:00:00 | 5000       | 8976  |
| 21 | 2019-12-09T19:00:00 | 5000       | 8894  |
| 22 | 2019-12-09T20:00:00 | 5000       | 8990  |
| 23 | 2019-12-09T21:00:00 | 5000       | 8960  |
| 24 | 2019-12-09T22:00:00 | 5000       | 8410  |
| 25 | 2019-12-09T23:00:00 | 5000       | 8630  |

3. If needed, change the Oracle Integration instance's configured message packs. See [Edit the Edition, License Type, Message Packs, and Custom Endpoint of an Instance](#).

## About Integrations Usage

When creating Oracle Integration instances, administrators specify the number of message packs they plan to use for per instance.

### Rules for tracking Integration billed messages

Follow these rules to determine how message consumption is calculated.

| Number | Rule     | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1      | Trigger  | Each trigger activity is counted in increments of 50KB. For example, an inbound message payload of 30KB is counted as one message, a payload of 70KB is counted as two messages, and so on.                                                                                                                                                                                                                                                                                                                     |
| 2      | Invoke   | Invoke requests don't count as messages and invoke responses with a payload below 50KB are also not counted. However, the response message is considered in multiples of 50KB when it exceeds 50KB.                                                                                                                                                                                                                                                                                                             |
| 3      | File     | For file based scheduled flows where there are incoming files into integrations, each file is converted into a billed message (in multiples of 50KB) only when the size is greater than 50KB.                                                                                                                                                                                                                                                                                                                   |
| 4      | Internal | Internal calls within the same Oracle Integration instance aren't counted as messages. For example, the following aren't counted: <ul style="list-style-type: none"> <li>• Process to Integration</li> <li>• Visual Builder to Integration</li> <li>• Integration to Integration</li> </ul> Calling another Oracle Integration instance does incur messages in the target Oracle Integration instance, and, depending on the response size, may also incur messages in the calling Oracle Integration instance. |

### Integration Usage Examples

This table shows by example how message billing is calculated and the rules that apply.

| Integration Type     | Scenario/Flow                                                                                                                                                                    | Billing Message Calculation                                                  | Rules That Apply |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|------------------|
| Sync/Async (Trigger) | <ol style="list-style-type: none"> <li>1. Eloqua inbound with 40KB payload.</li> <li>2. Data transformation.</li> <li>3. External invoke to push data to Sales Cloud.</li> </ol> | Payload size is considered at trigger.<br>$\text{ceil}(40/50) = 1$ message   | #1 (Trigger)     |
| Sync/Async (Trigger) | <ol style="list-style-type: none"> <li>1. REST inbound with 120KB payload.</li> <li>2. Data transformation.</li> <li>3. External invoke to push data to Logfire.</li> </ol>      | Payload size is considered at trigger.<br>$\text{ceil}(120/50) = 3$ messages | #1 (Trigger)     |

| Integration Type     | Scenario/Flow                                                                                                                                                                                                                                                                                                                | Billing Message Calculation                                                                                                                                                                                                                            | Rules That Apply                         |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| Sync/Async (Trigger) | <ol style="list-style-type: none"> <li>1. SOAP inbound with 70KB payload.</li> <li>2. Download files in a loop.</li> <li>3. 3 files downloaded of sizes 20KB, 170KB, and 40KB, respectively.</li> <li>4. Data transformation/enrichment.</li> <li>5. External invoke to push data to an external system via REST.</li> </ol> | <p>Payload size is considered at trigger. Any subsequent response greater than 50KB is also tracked.</p> <p>In this scenario, only files greater than 50KB are considered.</p> $\text{ceil}(70/50) + \text{ceil}(170/50) = 2 + 4 = 6 \text{ messages}$ | #1 (Trigger)<br>#3 (File)                |
| Sync/Async (Trigger) | <ol style="list-style-type: none"> <li>1. Database adapter pulling in 20KB data and 2 rows.</li> <li>2. For each row, 1 outbound REST invoke is made, which results in 20KB data for each invoke.</li> <li>3. Data enrichment/transformation.</li> <li>4. FTP to an external location.</li> </ol>                            | <p>Payload size is considered at trigger. Any subsequent response greater than 50KB is also tracked.</p> $\text{ceil}(20/50) = 1 \text{ message}$                                                                                                      | #1 (Trigger)                             |
| Sync/Async (Trigger) | <ol style="list-style-type: none"> <li>1. SOAP inbound with 10KB payload.</li> <li>2. Download files in a loop. Two files downloaded of sizes 20KB and 70KB, respectively.</li> <li>3. External invoke to get further data via REST adapter. Returns 100KB data.</li> <li>4. FTP to an external location.</li> </ol>         | <p>Payload size is considered at trigger. Any subsequent response greater than 50KB is also tracked.</p> $\text{ceil}(10/50) + \text{ceil}(70/50) + \text{ceil}(100/50) = 1 + 2 + 2 = 5 \text{ messages}$                                              | #1 (Trigger)<br>#2 (Invoke)<br>#3 (File) |
| Sync/Async (Trigger) | <ol style="list-style-type: none"> <li>1. Simple REST GET request with template parameters without payload.</li> <li>2. Call to Oracle Fusion Cloud B2C Service to get contact details. Returns a response of 40KB.</li> <li>3. Return the contact data.</li> </ol>                                                          | <p>Payload size is considered at trigger. Any subsequent response greater than 50KB is also tracked.</p> <p>Since the trigger is just a GET request with no payload, it's considered 1 billed message.</p> <p>1 message</p>                            | #1 (Trigger)                             |

| Integration Type | Scenario/Flow                                                                                                                                                                                                                                                                                                                                                      | Billing Message Calculation                                                                                                      | Rules That Apply |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|------------------|
| Scheduled flow   | <ol style="list-style-type: none"> <li>1. Scheduled trigger.</li> <li>2. Download files in a loop. Three files downloaded of sizes 20KB, 170KB, and 40KB, respectively.</li> <li>3. Data transformation.</li> <li>4. External invoke to transfer data which results in 10 bytes of response.</li> </ol>                                                            | Each invoke/file is considered in multiples of 50KB when response data is more than 50KB.<br>$\text{ceil}(170/50) = 4$ messages  | #3 (File)        |
| Scheduled flow   | <ol style="list-style-type: none"> <li>1. Scheduled trigger.</li> <li>2. Database adapter pulling in 30KB data and 10 rows.</li> <li>3. Data transformation.</li> <li>4. External invoke to transfer data which results in 5 bytes of response.</li> </ol>                                                                                                         | Each invoke/file is considered in multiples of 50KB when response data is more than 50KB.<br>Not counted.                        | None             |
| Scheduled flow   | <ol style="list-style-type: none"> <li>1. Scheduled trigger.</li> <li>2. External SOAP invoke to get data via BIP reports. Returns 130KB data.</li> <li>3. External invoke to get further data via REST adapter. Returns 10KB data.</li> <li>4. Data transformation.</li> <li>5. External invoke to transfer data which results in 5 bytes of response.</li> </ol> | Each invoke/file is considered in multiples of 50KB when response data is more than 50KB.<br>$\text{floor}(130/50) = 2$ messages | #3 (File)        |
| Scheduled flow   | <ol style="list-style-type: none"> <li>1. Scheduled trigger.</li> <li>2. Download files in a loop. Two files downloaded of sizes 20KB and 40KB, respectively.</li> <li>3. External invoke to get further data via REST adapter. Returns 100KB data.</li> <li>4. FTP to an external location.</li> </ol>                                                            | Each invoke/file is considered in multiples of 50KB when response data is more than 50KB.<br>$\text{ceil}(100/50) = 2$ messages  | #2 (Invoke)      |

| Integration Type       | Scenario/Flow                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Billing Message Calculation                                                                                                                                                                                 | Rules That Apply              |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| Scheduled flow         | <ol style="list-style-type: none"> <li>1. Scheduled trigger.</li> <li>2. External invoke to get data via REST adapter. Returns 10KB data.</li> <li>3. Data transformation.</li> <li>4. External REST invoke to transfer data which results in 500 bytes of response.</li> </ol>                                                                                                                                                                                                                                                                                                                                                          | <p>Each invoke/file is considered in multiples of 50KB when response data is more than 50KB.</p> <p>Not counted.</p>                                                                                        | #4 (Internal)<br>None counted |
| Child Integration flow | <ol style="list-style-type: none"> <li>1. A parent Integration flow calls a child Integration flow via REST in a loop.</li> <li>2. The child Integration flow sends a notification email with the information passed from a parent flow.</li> <li>3. Child flow execution completes.</li> </ol>                                                                                                                                                                                                                                                                                                                                          | <p>Integration child flow invoke is waived from metering.</p> <p>Not counted. Note that the parent may count.</p>                                                                                           | #4 (Internal)<br>None counted |
| Child Integration flow | <ol style="list-style-type: none"> <li>1. Parent Integration flow downloads a CSV file via the FTP adapter. The CSV contains 5 rows.</li> <li>2. Each row in the CSV file calls a child Integration child flow. <ol style="list-style-type: none"> <li>a. The child Integration flow reads a orderid passed as an input.</li> <li>b. Invokes a request to Oracle Fusion Cloud B2C Service to get data about the order. Each invoke returns 70KB data.</li> <li>c. Data transformation in child flow.</li> <li>d. Pushes the data via an FTP adapter to write it to a file.</li> <li>e. Child execution completes.</li> </ol> </li> </ol> | <p>Integration child flow invokes are waived from metering. Any subsequent response is metered.</p> <p>Each child = <math>\text{ceil}(70/50) = 2</math> messages</p> <p>Note that the parent may count.</p> | #2 (Invoke)                   |

| Integration Type | Scenario/Flow                                                                                                                                                                                                                                                                 | Billing Message Calculation                                                                                                                                                          | Rules That Apply            |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| Pub/Sub Flows    | <ol style="list-style-type: none"> <li>1. Single publisher flow with REST trigger as 30 KB payload.</li> <li>2. Single subscriber to the above which processes data and sends it to an external service.</li> </ol>                                                           | <p>Pub counts as 1 message.<br/>Sub is waived on trigger.</p>                                                                                                                        | #1 (Trigger)                |
| Pub/Sub Flows    | <ol style="list-style-type: none"> <li>1. Single publisher flow with REST trigger as 30KB payload.</li> <li>2. Single subscriber to the above which processes data.</li> <li>3. Sub flow calls OSC to get a response back as 70KB.</li> <li>4. Sub flow completes.</li> </ol> | <p>Pub counts as 1 message.<br/>Sub trigger is waived. However, the invoke is metered when the response is greater than 50KB. So the sub flow in this case counts as 2 messages.</p> | #1 (Trigger)<br>#2 (Invoke) |

## About Process Usage

When creating Oracle Integration instances, administrators specify the number of message packs they plan to use for per instance.

### Process message metering

Process metering tracks the number of concurrent, **unique** users **interacting** within a 1 hour interval. Sizing is based on concurrent users, which are converted to message packs. One Process user/hour is equivalent to 400 messages/hour.

- If you have 1,000 messages per hour and 10 distinct users, these would count as 1,000 integration messages +  $(400)*10$  users = 5,000, so 1 message pack of 5,000 messages per hour.
- Another way to visualize Process sizing: 5,000 message packs per hour equate to 12.5 distinct concurrent users performing tasks.

### What's counted?

A logged in user is counted for a minimum of one hour when performing any write operations that update a task or process instance, which includes:

- Updating or processing tasks (approve/reject a task, add an attachment/comment, re-assign, or request for information)
- Creating process instances

Within each hour of use, a distinct user can perform an unlimited number of write operations.

Oracle Integration has a 1 message pack minimum charge per hour to keep the system available, even with no usage. Note that you can turn off your Oracle Integration instance for billing purposes, but no instances are processed while the instance is stopped.

### What's NOT counted?

This count doesn't include:

- Logged in users performing read-only only (query or read) operations.
- Integrations triggered from the process (integrations are waived).

### Process Usage Examples

This table shows by example how message billing is calculated and the rules that apply.

| Scenario Type                        | Scenario                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Billing Message Calculation                                                                                                                                                                                                                                             |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Process Workspace                    | <p>Between 9am and 10am, 20 employees access Workspace. Within the one hour timeframe:</p> <ul style="list-style-type: none"> <li>• 5 users (user1 through user5) create a total of 100 new process instances.</li> <li>• 10 other users (user6 through user15) process different tasks created by user1 through user5, and complete them.</li> <li>• The remaining 5 users (user16 through user20) only check the task and process instance status, but do not perform any update/write operations.</li> </ul>                                                                                                                   | The 9am-10 am hour block reports 15 concurrent users (5 created new instances and 10 processed tasks).                                                                                                                                                                  |
| Process Workspace and mobile app     | <p>Between 10 and 11am, 10 users access Workspace and 5 access the Oracle Process Mobile app. Within the one hour timeframe:</p> <ul style="list-style-type: none"> <li>• 10 users (user1 through user10) create new process instances and also approve at least 1 task total.</li> <li>• 5 users (user11 through user15) log into the mobile app: 3 of them create new instances, and the other 2 perform only read-only operations.</li> </ul>                                                                                                                                                                                  | The 10am-11am hour block reports 13 concurrent users (10 workspace users plus 3 mobile users performed update/write operations, while 2 mobile users did not perform any update/write operations).                                                                      |
| Process Workspace and Visual Builder | <p>Between 11am and 12pm, 5 users access Oracle Integration from a Visual Builder application and 5 other users access Workspace.</p> <ul style="list-style-type: none"> <li>• 2 of the 5 Visual Builder users access Visual Builder, and interact with a Visual Builder app that in turn triggers execution of an API that creates new process instances and processes tasks.</li> <li>• The other 3 Visual Builder users access the Visual Builder app and read and access task and process instance status.</li> <li>• The 5 users access Workspace and approve a minimum of 1 task each within the hour timeframe.</li> </ul> | The 11am-12pm hour block reports 7 concurrent users (2 Visual Builder users and 5 Workspace users performed update/write operations). This result does not include the Visual Builder concurrent user licenses. Visual Builder concurrent users are metered separately. |

## Calculate Requests Per Second

If a synchronous integration keeps timing out or is taking longer than usual to complete, the integration might be trying to process too many requests. Knowing the requests that your instance processes in a second helps you design synchronous integrations that deliver the fast responses that you need.

The requests-per-second calculation helps you determine the *approximate* number of concurrent requests that your system can receive from client applications. For example, when

a mobile application calls Oracle Integration, how many concurrent requests from the mobile app can your instance process?

This calculation is specifically for synchronous integrations, for which Oracle Integration waits for a response from the target service. If you have an integration that completes a large task and needs a long time to run, Oracle recommends creating an asynchronous integration instead.

 **Note:**

- Generally, the words "message" and "request" are synonymous. However, when you're working with large payloads, you might consume more than one message per request. This change impacts your calculations. See [Monitor Billable Messages](#).

The calculations in this section assume that every request is 50 KB or smaller.

- This calculation is typically called TPS, or transactions per second. TPS doesn't apply directly to Oracle Integration for two reasons:
  - Oracle Integration processes requests, rather than transactions.
  - Sizing in Oracle Integration is based on the hourly consumption of messages, rather than the per-second consumption.

The Oracle Integration equivalent to TPS is requests per second, which is your concurrency.

1. Determine the approximate number of requests that an instance can process in one minute.
  - a. Determine the number of message packs that you purchased per hour for the instance.

For this example, we'll say that you have an Oracle Integration license and purchased **4 packs**.
  - b. Multiply the number of message packs by the number of messages in the message pack (5,000 messages for non-BYOL customers, and 20,000 messages for BYOL customers).

For this example, we'll say that you're a non-BYOL customer, so your message packs contain 5,000 messages.

**4 message packs x 5,000 messages per hour = 20,000 requests per hour**
  - c. Divide the number of hourly requests by 3,600 to determine your approximate per-second capacity.

**20,000 requests per hour / 3600 = 5.6 requests per second**
  - d. Multiply the per-second requests by 2; an instance can typically handle about twice your purchased capacity.

**5.6 requests per second x 2 = 11 requests per second**
2. Calculate your concurrency (the number of concurrent requests your system can handle from client applications).
  - a. Determine the typical response time in seconds.

For example, run a few requests and check the response times in the activity stream timestamps. See Track Business Identifiers in Integrations During Runtime in *Using Integrations in Oracle Integration Generation 2*.

The response time can vary depending on circumstances. When the volume of transactions increase in your instance, your response times might also increase.

For this example, we'll say that your response time is **5 seconds**.

- b. Multiply the number of requests you can process per second by the response time.

**11 requests per second x 5 seconds = 55 concurrent requests**

This value is your approximate concurrency.

#### Example 6-1 Processing the maximum number of concurrent requests

Let's take a look at a sample request queue when an instance that can handle 55 concurrent requests is working at full capacity.

The following table illustrates how requests arrive and complete as each second passes. The total requests in the queue increase until they reach 55 and remain at 55 indefinitely. After 5 seconds (the response time), requests start completing.

| Time that has elapsed | Requests that arrive | Requests that complete | Total requests in the queue |
|-----------------------|----------------------|------------------------|-----------------------------|
| 1 second              | 11                   | 0                      | 11                          |
| 2 seconds             | 11                   | 0                      | 22                          |
| 3 seconds             | 11                   | 0                      | 33                          |
| 4 seconds             | 11                   | 0                      | 44                          |
| 5 seconds             | 11                   | 11                     | 55                          |
| 6 seconds             | 11                   | 11                     | 55                          |
| 7 seconds             | 11                   | 11                     | 55                          |
| 8 seconds             | 11                   | 11                     | 55                          |

#### Example 6-2 Exceeding the maximum concurrent requests

Imagine the same instance is receiving a higher number of requests per second than the maximum concurrency value. The following table illustrates how quickly the number of requests in the queue can build, even when you exceed the concurrency by just a few requests. After 3 seconds, the instance has already exceeded its maximum number of concurrent requests, and within 8 seconds, the instance is dealing with twice the maximum number of concurrent requests.

If an integration is likely to exceed the instance's maximum concurrency, the integration is probably going to experience timeouts when built as a synchronous integration. Instead, build the integration as an asynchronous integration.

| Time that has elapsed | Requests that arrive | Requests that complete | Total requests in the queue |
|-----------------------|----------------------|------------------------|-----------------------------|
| 1 second              | 20                   | 0                      | 20                          |
| 2 seconds             | 20                   | 0                      | 40                          |
| 3 seconds             | 20                   | 0                      | 60                          |

| Time that has elapsed | Requests that arrive | Requests that complete | Total requests in the queue |
|-----------------------|----------------------|------------------------|-----------------------------|
| 4 seconds             | 20                   | 0                      | 80                          |
| 5 seconds             | 20                   | 11                     | 89                          |
| 6 seconds             | 20                   | 11                     | 98                          |
| 7 seconds             | 20                   | 11                     | 107                         |
| 8 seconds             | 20                   | 11                     | 116                         |

## Use the Cost Estimator Tool to Determine Your Monthly Bill

Oracle provides a cost estimator tool to help you determine your monthly usage and bill for Oracle Integration.

1. Go to the [cost estimator tool](#).
2. From the **Select category** list, choose **Integration**.
3. In the **Application Integration** box, click **Load**.

4. Follow the instructions on the page to calculate your costs.

The estimated monthly cost is displayed.

See [Estimate Your Monthly Cost](#).

# Upgrade from Oracle Integration Generation 2 to Oracle Integration 3

Upgrades from Oracle Integration Generation 2 to Oracle Integration 3 have begun and are available at no extra cost. Learn more about your prerequisites and the upgrade workflow.

See [Upgrade from Oracle Integration Generation 2 to Oracle Integration 3](#) in *Provisioning and Administering Oracle Integration 3*.

# Oracle Integration Generation 2 Reference

## Topics:

- [Upgrade to Oracle Integration Generation 2](#)
- [Manually Federate Your Tenancy](#)
- [Automate with Events](#)

## Upgrade to Oracle Integration Generation 2

Take advantage of this free, automated upgrade for Oracle Integration instances. After this upgrade, expect faster performance, greater reliability, and our latest features.

### Note:

Upgrade scheduling is available to instance administrators only.

### What is Oracle Integration Generation 2?

Oracle Integration Generation 2 is the next generation of our Oracle Integration platform. This upgrade delivers improved performance and reliability as well as significant improvements in provisioning and other lifecycle management activities by more deeply leveraging the power of Oracle Cloud Infrastructure.

### What is the upgrade process and how will it impact my service?

This is a planned maintenance event and will include scheduled downtime during the upgrade process. Your Oracle Integration Generation 2 instance will use the same URL and integration endpoints.

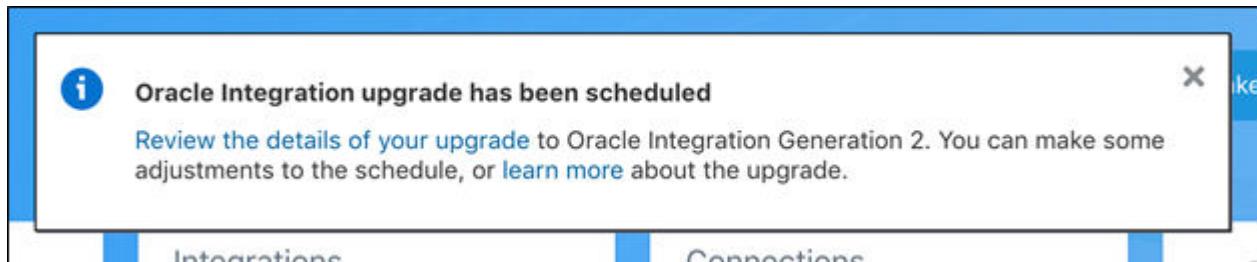
The upgrade process will take several hours, during which inflight integration processing will be paused and user logins will be disabled. Upon completion, your service will be fully restored using the same instance URL and access credentials. Each Oracle Integration instance will be separately upgraded. You have the option of scheduling different instances for different upgrade windows.

Two weeks after the upgrade of your first Oracle Integration instance, options to create new Oracle Integration (PSM) instances will no longer be available in your tenancy, as they're no longer needed.

### When will my instance be upgraded?

#### 1. Watch for a notification.

You'll receive an Oracle Cloud Infrastructure notification and see a banner on your Oracle Integration Home page, telling you that your instance will be upgraded. The banner includes two links: one to a **Schedule Upgrade** page and another to the upgrade documentation.



2. Click the **Review the details of your upgrade** link and follow the upgrade steps.

The screenshot shows the 'Schedule Upgrade' page. The left sidebar includes 'Settings' (Logging, Data Retention, Import/Export, Storage, Schedule Upgrade, Certificates, Integrations), 'Integrations' (selected), and 'Cookie Preferences'. The main content area is titled 'Schedule Upgrade' and displays the following information:

- The upgrade is currently scheduled for **10 AM PST to 6 PM PST Jan 29, 2021**. A note states: 'The upgrade of this Oracle Integration instance is currently scheduled for 10 AM PST to 6 PM PST Jan 29, 2021. After this upgrade, expect faster performance, greater reliability, and our latest features.'
- A green checkmark icon with the text 'Your Upgrade is scheduled'.
- How does it work?**: A note explaining the upgrade process: 'Each Oracle Integration instance is scheduled for upgrade. During the upgrade, a new Oracle Integration Generation 2 instance is created with the same URL, and all configuration and data are moved to the new instance. The upgrade takes several hours during which inflight instances are paused and no users can access the instance.'
- Upgrade Window**: Your current upgrade information is shown below.
  - Instance: [REDACTED]
  - Upgrade Window: 10 AM PST to 6 PM PST Jan 29, 2021
  - Compartment OCID: ocid1.tenancy.oc1..aaaaaaaaaaaaa... [REDACTED]
  - Update button
- What to do next?**
  - If needed, whitelist your instance's IP addresses.**: New ingress and egress IP addresses will be provided below before the upgrade.
  - Note the upgrade window lock.**: Your upgrade window locks three weeks before the scheduled upgrade. One week before the scheduled upgrade, you can't start/stop or scale up/down your instance or perform other lifecycle operations until the upgrade is complete. Ensure that your instance is not stopped at that point, or it will stay stopped until the upgrade is complete.
  - Sign in to the upgraded instance and test it.**: Once the upgrade is complete, perform regression testing. If you find issues, open a service request. Carefully read through these steps in the [upgrade documentation](#).

## What MUST I do before the upgrade?

Follow the steps in [Tasks You MUST Do Before the Upgrade](#).

### Note the upgrade window lock dates

- Three dates are listed in the upgrade window section. Note that 1 week before the first listed date and 2 weeks before the remaining upgrade dates, **the upgrade window selection becomes locked and you can make NO further changes**.
- One day before the upgrade, **you can NO LONGER perform lifecycle operations** on the Oracle Integration instance, such as scale up or down, and start or stop.

### **What happens during the upgrade?**

During the upgrade window, the Oracle Integration instance will be unavailable. All activity in the Oracle Integration instance, including design time and runtime, will be stopped. Users who attempt to sign in will see a message that the instance is temporarily unavailable. All metadata and in-flight instance data are moved to the new instance.

### **What do I need to do after the upgrade?**

Follow the steps in [Tasks to Perform After the Upgrade](#).

### **What happens to integration instances in the old Oracle Cloud Infrastructure Console?**

Integration instances will still be visible in your old PSM Console from which you upgraded for approximately two weeks. However, the instances will be displayed as stopped, and cannot be restarted. You must perform all start and stop actions on Oracle Integration Generation 2 integration instances in your new Oracle Cloud Infrastructure Console.

### **Do I need to allowlist (formerly known as whitelist) my IP addresses in Oracle Integration Generation 2?**

In many cases, yes. See [Allowlist Your IP Addresses](#).

### **What do I need to know about email authentication in Oracle Integration Generation 2?**

You may need to make updates. For example, the SPF record format has changed in Oracle Integration Generation 2 instances. See [Configure Email Authentication Settings for SPF and DKIM](#).

### **What do I get with Oracle Integration Generation 2?**

Make use of these Oracle Integration Generation 2 capabilities:

- Native integration with the Oracle Cloud Infrastructure Console
- Integration Insight in Oracle Integration for modeling and extracting meaningful business metrics
- File Server, an embedded SFTP server within Oracle Integration
- Support for Oracle Cloud Infrastructure (OCI) Compartments, for organization and instance access control
- Oracle Cloud Infrastructure Identity and Access Management (IAM)
- Read/View only access to Oracle Integration instances
- Support for tagging
- Service instance Lifecycle Management (LCM) capabilities, including Terraform, CLIs, APIs, and CI/CD
- Integration with the Oracle Cloud Infrastructure Monitoring service
- Compartment quotas for better control over how resources are consumed
- Event automation based on Oracle Integration state changes using event types, rules, and actions
- Ability to update Oracle Integration instances: Move between compartments, change edition and number of message packs

## What do I need to know about lifecycle (LCM) APIs in Oracle Integration Generation 2?

Oracle Integration Generation 2 provides updated lifecycle (LCM) management APIs built for Oracle Cloud Infrastructure for your use. See Oracle Integration API in the Oracle Cloud Infrastructure documentation ([Oracle Integration CLI](#)). For example, APIs have changed for creating, deleting, and starting and stopping Integration instances.

## Tasks You MUST Do Before the Upgrade

Perform the following steps before the upgrade starts.

1. Ensure that you are subscribed to the same Oracle Cloud Infrastructure region as the Oracle Integration instance you intend to upgrade.

If you received a notification email indicating that your Oracle Cloud Infrastructure tenancy is not subscribed to all necessary regions, subscribe to all regions by following these quick steps in [Subscribe to Regions Before Upgrading](#).

2. If needed, select a different upgrade window. (Can only be done before the upgrade window is locked.)

The **Upgrade Window** field shows the date and time during which the instance is currently scheduled for upgrade. You can select a different window, based on availability. Unless you make a change, the current window displayed in your instance will be used for the upgrade.

3. Specify the new OCID of the compartment to be used. (Can only be done before the upgrade window is locked.)

By default, the cloud tenancy's root compartment is used for the upgraded Oracle Integration Generation 2 instance and its OCID is listed in the **Compartment OCID** field. However, we recommend that you create a new compartment in the root compartment and enter its OCID for the Oracle Integration instance in Gen 2. To create a new compartment in the Oracle Cloud Infrastructure Console, see [Create an Oracle Cloud Infrastructure Compartment](#).

4. After making a change, click the **Update** button.

A blue rectangular button with the word "Update" in white text, centered within the button.

For information, see **Note the upgrade window lock dates** in [Upgrade to Oracle Integration Generation 2](#).

5. Update email authentication settings for SPF and DKIM, as needed.

You may need to make updates. For example, the SPF record format has changed in Oracle Integration Generation 2 instances. See [Configure Email Authentication Settings for SPF and DKIM](#).

6. **Allow list your IP addresses, if needed.**

You may need to allowlist (formerly known as whitelist). See [Allowlist Your IP Addresses](#).

7. If needed, federate any secondary IDCS stripes with Oracle Cloud Infrastructure.

For existing cloud accounts and new cloud accounts in regions that have not yet been updated to use identity domains: if you created your Oracle Integration instance in an IDCS stripe other than the primary IDCS stripe (also known as secondary IDCS stripe), you'll need to **federate the secondary IDCS stripe** with Oracle Cloud Infrastructure before the

upgrade. Follow the steps in [Configure Multiple Identity Stripes for Oracle Integration Generation 2](#).

8. If needed, change the preselected upgrade date chosen for any other instances. This has to be done before the window lock three weeks before the upgrade date.

If your account includes multiple Oracle Integration instances, note that each instance needs to be individually upgraded. This means you can choose to first upgrade your development and test instances, and later upgrade your production instances. However, if you leave the default settings, the instances are upgraded in the default order as specified on the **Schedule Upgrade** page. If you want your non production instances to be upgraded before production, you **MUST go to the Oracle Integration Home page and change the upgrade windows** to reflect the upgrade order you want.

9. If needed, complete network rules configuration prior to your planned upgrade.

If you are using an OCI service that supports network rules as a target of an integration connection, such as object store or autonomous database, and you have enabled the network rules, then you must add the OIC Service VCN as part of the network rule. To get the OIC Service VCN OCID, open a service request with Oracle Support. Once you have the OIC Service VCN OCID, follow the rules for your target service, such as [Configure Access Control Lists When You Provision or Clone an Instance in Using Oracle Autonomous Database on Shared Exadata Infrastructure](#).

If the OCI service you are accessing is in a different region than your Oracle Integration instance, allowlist the egress IP address provided in the upgrade UI.

## Tasks to Perform After the Upgrade

Complete these steps after the upgrade.

1. Access your Oracle Integration Generation 2 instance using your existing credentials.

See [Access an Oracle Integration Instance](#).

**IMPORTANT:** Note the following:

- You will now find your Oracle Integration Generation 2 instance in the Oracle Cloud Infrastructure Console in the compartment you previously specified. (If you did not provide a compartment ID, your new instance will be located at the root compartment.)
- Make sure to select the correct region.
- Your old pre-Generation 2 Oracle Integration instance is locked and cannot be restarted. Go to the Oracle Cloud Infrastructure Console instead.

2. Test your upgraded instance.

Once the upgrade is complete, perform regression testing. If you find issues, open a service request. For example, verify that your instance is running, endpoints are being reached, and so on.

3. Create Oracle Cloud Infrastructure users and groups to enable Oracle Cloud Infrastructure Console access.

Oracle Identity Cloud Service identities are retained during upgrade, so you can continue using your Oracle Identity Cloud Service users and groups for accessing the Oracle Integration Console and running integrations. But you'll need to configure policies in Oracle Cloud Infrastructure, create Oracle Cloud Infrastructure groups, and map Oracle Cloud Infrastructure groups to Oracle Identity Cloud Service groups.

See [Setting Up Users and Groups in Provisioning and Administering Oracle Integration Generation 2](#).

4. Re-add any Oracle Cloud Infrastructure instance tags previously added to your pre-Generation 2 instance to your new Oracle Integration Generation 2 instance. This step is important if you use tagging to manage your instances and perform Oracle Cloud Infrastructure reporting.

## Allowlist Your IP Addresses

After you upgrade to Oracle Integration Generation 2, you may need to add your IP addresses to an allowlist (formerly a whitelist).

The endpoint URLs and the Oracle Identity Cloud Service application associated with your instance remain the same. You access the Oracle Integration Generation 2 instance in much the same way as the original instance.

**However, the ingress and egress IP addresses are different.** So if you previously allowlisted (explicitly allowed identified entities access) the IP addresses of your Oracle Integration instances, you must allowlist the new IP addresses for Oracle Integration Generation 2. Once the upgrade window becomes locked, Oracle provides the new IP addresses to organizations that allowlist.

 **Note:**

You'll need to allowlist IP addresses for Oracle Integration Generation 2 wherever you previously included IP addresses in the allowable list. For example, you'll need to allowlist in these cases:

- You use Connectivity Agent and have included Oracle Integration IP addresses in the allowable list.
- You use applications such as Oracle E-Business Suite or Siebel which have included Oracle Integration IP addresses in the allowable list when invoking Oracle Integration integration flows.
- You're using Oracle Integration to invoke endpoints hosted on your on-premises/private cloud and have included NAT Gateway IP addresses in the allowable list.
- If you previously allowlisted IP addresses to enable Visual Builder applications in an Oracle Integration instance to access external REST services, the outbound IP addresses changed after the November 2020 Oracle Integration update. Note, the IP address for egress from Visual Builder will be different from the egress IP of Oracle Integration. In addition, if you are using network rules to allow connection from Visual Builder to OCI services, such as autonomous database, then you must add the VB Service VCN as part of the network rule. If needed, open a service request with Oracle Support to obtain new IP addresses or VCN OCIDs.

## Subscribe to Regions Before Upgrading

Oracle has begun upgrading Oracle Integration instances to Oracle Integration Generation 2 instances. However, you may have received a notification email indicating that your Oracle

Cloud Infrastructure tenancy is not subscribed to all the necessary regions. Follow these steps to quickly subscribe to all regions.

### Subscribe to Regions Before Upgrade

Before upgrade, your Oracle Cloud Infrastructure tenancy must be subscribed to each region in which an Oracle Integration instance exists. For example, if Ashburn is your home region, but you created an Oracle Integration instance in the Phoenix region, the tenancy must be subscribed to the Phoenix region.

1. In the Oracle Cloud Infrastructure Console, locate the region for each of your Oracle Integration instances.
  - a. From the list of your instances, select each instance.
  - b. Click  in the top right corner of the page.
  - c. Locate the region.
  - d. Repeat these steps for all other instances.
2. Subscribe to regions, as needed.
  - a. Open the Oracle Cloud Infrastructure Console, open the **Region** menu, and click **Manage Regions**. The list of regions available to your tenancy is displayed. Your home region is labeled.
  - b. Locate the region you want to subscribe to and click **Subscribe**. It may take several minutes to activate your tenancy in the new region.
  - c. Repeat these steps to subscribe to all unsubscribed regions of an Oracle Integration instance. You can manage infrastructure regions. See [Managing Regions](#).

 **Note:**

If a message alerts you that you have exceeded the maximum number of regions allowed for your tenancy, request a limit increase to your subscribed region count from the Oracle Cloud Infrastructure Console. See [Request a subscribed region limit increase](#).

## Manually Federate Your Tenancy

In certain cases, your tenancy may need user federation between Oracle Cloud Infrastructure's IAM and Oracle Identity Cloud Service (IDCS).

 **This topic applies only to tenancies that do not use identity domains.** See Differences Between Tenancies With and Without Identity Domains.

 **Note:**

Follow the steps in this section ONLY if your tenancy is not already federated. See [Is My Tenancy Federated Between Oracle Cloud Infrastructure IAM and Oracle Identity Cloud Service?](#)

For additional instructions for manually federating with IDCS, see [Federating with Oracle Identity Cloud Service](#) in the Oracle Cloud Infrastructure documentation. The *Instructions for Federating with Oracle Identity Cloud Service* section lists four main steps. However, step 1 differs for Oracle Integration: Instead of accessing client ID/secret information from a COMPUTEBAREMETAL IDCS application, you'll create an IDCS application to generate this information for federation, as described here.

- [Is My Tenancy Federated Between Oracle Cloud Infrastructure IAM and Oracle Identity Cloud Service?](#)
- [Get Required Information from Oracle Identity Cloud Service](#)
- [Add Oracle Identity Cloud Service as an Identity Provider](#)

## Is My Tenancy Federated Between Oracle Cloud Infrastructure IAM and Oracle Identity Cloud Service?

Oracle Integration requires that Oracle Cloud Infrastructure Identity and Access Management (IAM) be federated with Oracle Identity Cloud Service (IDCS) for your tenancy.



**This topic applies only to tenancies that do not use identity domains.** See Differences Between Tenancies With and Without Identity Domains.

1. Open the navigation menu and click **Identity & Security**. Under **Identity**, click **Federation**.
2. On the Federation page, look for an **Oracle Identity Cloud Service** link.

The Federation screen is shown. Its **Identity Provider Information** tab identifies the default federation configured between the Oracle Identity Cloud Service stripe and the Oracle Cloud Infrastructure tenancy in a cloud account. Note that this screen may show more than the default identity provider.

If you see a console link, your instance is federated. If it's not, perform the steps in [Manually Federate Your Tenancy](#).

The screenshot shows the Oracle Cloud Infrastructure Federation screen. The 'Identity Provider Information' tab is selected. The 'Tags' tab is visible but not selected. The 'Identity Provider Information' tab displays the following details:

- OCID:** ...bmxstq [Show](#) [Copy](#)
- Created:** Thu, Sep 29, 2022, 08:29:35 UTC
- Encrypt Assertion:** Disabled
- Oracle Identity Cloud Service Console:** <https://identity.oraclecloud.com/ui/v1/adminconsole>
- IDCS service identifier:** 9461eb9a3ef741ab869abde3bffa3e21
- Authentication Contexts:** -

## Get Required Information from Oracle Identity Cloud Service

Follow these steps to create and configure an Oracle Identity Cloud Service application, activate the application, and create an IDCS administrator group.

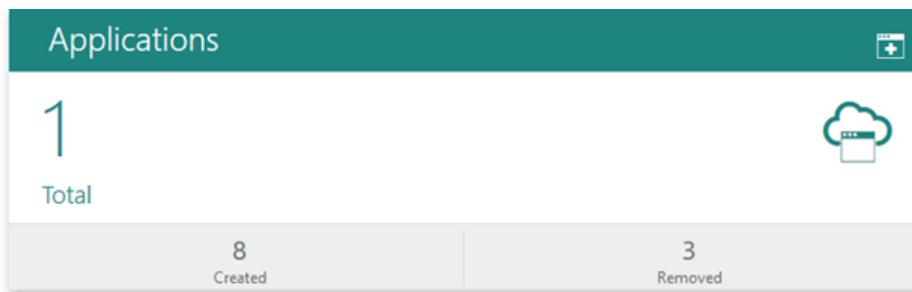


**This topic applies only to tenancies that do not use identity domains.** See Differences Between Tenancies With and Without Identity Domains.

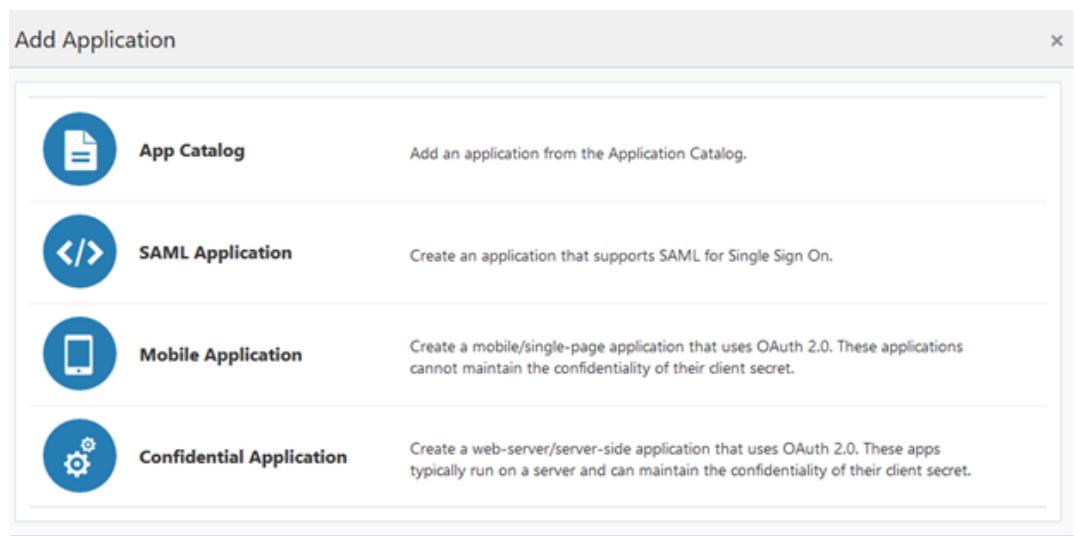
**Note:**

Follow the steps in this section only if manual federation is needed.

1. Sign in to Oracle Identity Cloud Service with admin privileges. You must be viewing the admin console.  
Use the link, username, and password provided in your account welcome email.
2. Select **Applications**.



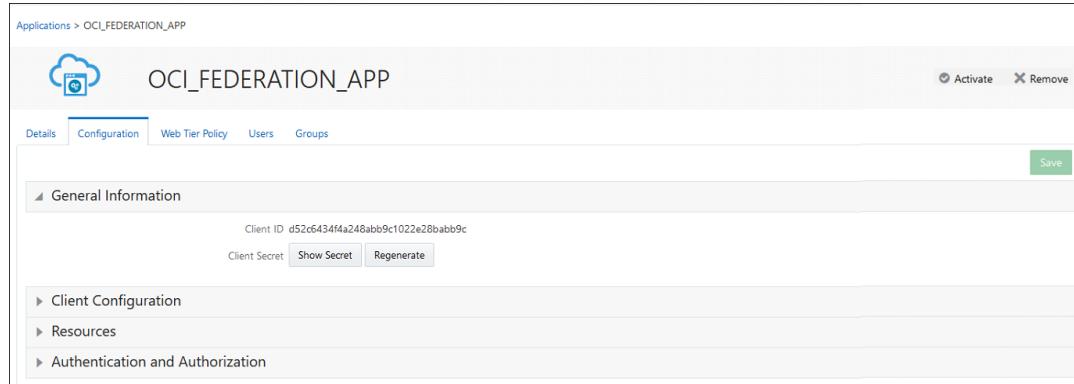
3. Click **Add**.
4. Select **Confidential Application**.



The Add Confidential Application page is displayed.

5. In the **Name** field under **App Details**, enter a name (such as Oracle Cloud Infrastructure Federation). Click **Next**.  
Client options are displayed.
6. Under **Authorization**, select **Client Credentials**.
7. Under **Token Issuance Policy**, click **+Add** by App Roles. Select **Identity Domain Administrator**. Click **Next**.
8. Click **Next** to skip the **Resources** options.
9. Click **Next** to skip the **Web Tier Policy** options.

**10. Click **Finish**.**



The application's **Client Id** and **Secret** are displayed.

- 11.** Copy the **Client Id** and **Secret** for use later (in [Add Oracle Identity Cloud Service as an Identity Provider](#)). Close the window.
- 12.** Activate the app by selecting **Activate** in the upper right corner.
- 13.** Create an IDCS group for administrators. Make sure the federated user you plan to test federation with is part of that group.
  - a.** Select **Groups** from the **Resources** options.
  - b.** Click **Create IDCS Group**.
  - c.** Enter a name (for example, idcs-integration-admins).

- d.** Click **Create**.

- 14.** Copy the IDCS base URL (<https://<account>.identity.oraclecloud.com>) for use next in [Add Oracle Identity Cloud Service as an Identity Provider](#).

## Add Oracle Identity Cloud Service as an Identity Provider

If your tenancy needs user federation between Oracle Cloud Infrastructure's IAM and Oracle Identity Cloud Service (IDCS), complete steps in the console by adding Oracle Identity Cloud Service as an identity provider.



**This topic applies only to tenancies that do not use identity domains.** See Differences Between Tenancies With and Without Identity Domains.

### Note:

Follow the steps in this section only if manual federation is needed. You'll need the information you generated in the steps in [Get Required Information from Oracle Identity Cloud Service](#).

1. Sign in to the Oracle Cloud Infrastructure Console as an IAM user (use the options on the right side).
2. Open the navigation menu and click **Identity & Security**. Under **Identity**, click **Federation**.
3. Click **Add Identity Provider** and enter data as below. Click **Continue**.
  - a. **Name:** Enter a name, such as `oracleidentitycloudservice`.
  - b. **Description:** Enter a description, such as `Federated IDCS stripe`.
  - c. **Oracle Identity Cloud Service Base URL:** Enter the IDCS base URL you noted in [step 14](#) in [Get Required Information from Oracle Identity Cloud Service](#).
  - d. **Client ID:** Enter the application's client ID you noted in [step 11](#) in [Get Required Information from Oracle Identity Cloud Service](#).
  - e. **Client Secret:** Enter the client secret you noted in [step 11](#) in [Get Required Information from Oracle Identity Cloud Service](#).
  - f. Click **Continue**.
4. When prompted, map your IDCS group to the OCI administrators group. Select your IDCS group in the **Identity Provider Group** field and your Oracle Cloud Infrastructure group in the **OCI Group** field.
5. Sign out and sign back in as one of your federated users. On the Federation page, verify that the Oracle Identity Cloud Service link is now shown. See [Is My Tenancy Federated Between Oracle Cloud Infrastructure IAM and Oracle Identity Cloud Service?](#)

## Automate with Events

You can create automation based on state changes for your Oracle Cloud Infrastructure resources by using event types, rules, and actions.

Oracle Cloud Infrastructure services emit events, which are structured messages that indicate changes in resources. An Oracle Integration administrator can create rules to track these events, such as when instances are created, updated, or deleted, and compartments changed.

For more information, see [Overview of Events](#).

The following Oracle Integration resource emits events:

- Integration Instance

## Integration Instance Event Types

These are the event types that Integration Instances emit:

| Friendly Name                                 | Event Type                                                     |
|-----------------------------------------------|----------------------------------------------------------------|
| Create Integration Instance Begin             | com.oraclecloud.integration.createintegrationinstance.begin    |
| Create Integration Instance End               | com.oraclecloud.integration.createintegrationinstance.end      |
| Update Integration Instance Begin             | com.oraclecloud.integration.updateintegrationinstance.begin    |
| Update Integration Instance End               | com.oraclecloud.integration.updateintegrationinstance.end      |
| Start Integration Instance Begin              | com.oraclecloud.integration.startintegrationinstance.begin     |
| Start Integration Instance End                | com.oraclecloud.integration.startintegrationinstance.end       |
| Stop Integration Instance Begin               | com.oraclecloud.integration.stopintegrationinstance.begin      |
| Stop Integration Instance End                 | com.oraclecloud.integration.stopintegrationinstance.end        |
| Delete Integration Instance Begin             | com.oraclecloud.integration.deleteintegrationinstance.begin    |
| Delete Integration Instance End               | com.oraclecloud.integration.deleteintegrationinstance.end      |
| Change Integration Instance Compartment Begin | com.oraclecloud.integration.changeintegrationcompartment.begin |
| Change Integration Instance Compartment End   | com.oraclecloud.integration.changeintegrationcompartment.end   |

## Integration Instance Event Example

This is a reference event for Integration Instances:

```
{
 "eventType": "com.oraclecloud.integration.updateintegrationinstance.begin",
 "cloudEventsVersion": "0.1",
 "eventTypeVersion": "2.0",
 "eventID": "<unique_ID>",
 "source": "integration",
 "eventTime": "2019-01-10T21:19:24Z",
 "contentType": "application/json",
 "extensions": {
 "compartmentId": "ocid1.compartment.oc1..<unique_ID>"
 },
 "data": {
 "compartmentId": "ocid1.compartment.oc1..<unique_ID>",
 "compartmentName": "example_compartment",
 "resourceName": "My test resource",
 "resourceId": "ocid1.integrationinstance.oc1.phx.<unique_ID>",
 "availabilityDomain": "<availability_domain>",
 "freeFormTags": {
 "Department": "Finance"
 },
 "definedTags": {
 "Operations": {
 "CostCenter": "42"
 }
 },
 "additionalDetails": {
 "integrationInstanceType": "STANDARD",
 "isByol": "false",
 "messagePacks": 1
 }
 }
}
```

# Oracle Integration Roles and Privileges

Roles define the privileges available to users and the tasks that they can perform. You can assign predefined roles to users to allow them to work with feature sets of Oracle Integration.

## Topics:

- [What Users Can Do in the Integrations Design Section by Role](#)
- [What Users Can Do in the Monitoring Section by Role](#)
- [What Users Can Do in the Settings Section by Role](#)
- [What Users Can Do in Processes by Role](#)
- [What Users Can Do in Insight by Role](#)
- [What Users Can Do in File Server by Role](#)
- [What Users Can Do in Visual Builder by Role](#)
- [What Users Can Do in B2B for Oracle Integration by Role](#)

## What Users Can Do in the Integrations Design Section by Role

The following tables list Oracle Integration predefined roles available in the Integrations design section, and the tasks users granted those roles can perform.

- [Integrations](#)
- [Connections](#)
- [Lookups](#)
- [Packages](#)
- [Agents](#)
- [Adapters](#)
- [Libraries](#)

### Integrations

| Action             | Service Administrator | ServiceDeveloper | ServiceMonitor | ServiceUser | ServiceInvoicer | ServiceViewer |
|--------------------|-----------------------|------------------|----------------|-------------|-----------------|---------------|
| Create             | Yes                   | Yes              | No             | No          | No              | No            |
| Create new version | Yes                   | Yes              | No             | No          | No              | No            |
| View               | Yes                   | Yes              | No             | Yes         | No              | Yes           |
| Edit               | Yes                   | Yes              | No             | No          | No              | No            |
| Delete             | Yes                   | Yes              | No             | No          | No              | No            |

| Action                                                                | Service Administrator | Service Developer | Service Monitor | Service User | Service Invoker | Service Viewer |
|-----------------------------------------------------------------------|-----------------------|-------------------|-----------------|--------------|-----------------|----------------|
| Activate                                                              | Yes                   | Yes               | No              | No           | No              | No             |
| • Enable tracing (include payload)                                    |                       |                   |                 |              |                 |                |
| Reactivation after connection update                                  | Yes                   | Yes               | No              | No           | No              | No             |
| Deactivate                                                            | Yes                   | Yes               | No              | No           | No              | No             |
| Clone                                                                 | Yes                   | Yes               | No              | No           | No              | No             |
| Run                                                                   | Yes                   | Yes               | No              | Yes          | Yes             | No             |
| Export                                                                | Yes                   | Yes               | No              | Yes          | No              | Yes            |
| Import                                                                | Yes                   | Yes               | No              | No           | No              | No             |
| Update Property Values                                                | Yes                   | Yes               | No              | No           | No              | No             |
| Configure                                                             | Yes                   | Yes               | No              | No           | No              | No             |
| Assign Business Identifiers                                           | Yes                   | Yes               | No              | No           | No              | No             |
| Map to Insight                                                        | Yes                   | Yes               | No              | No           | No              | No             |
| Unlock                                                                | Yes                   | Yes               | No              | No           | No              | No             |
| Add Schedule                                                          | Yes                   | Yes               | No              | Yes          | No              | No             |
| Edit Schedule                                                         | Yes                   | Yes               | No              | Yes          | No              | No             |
| Delete Schedule                                                       | Yes                   | Yes               | No              | Yes          | No              | No             |
| Run Schedule                                                          | Yes                   | Yes               | No              | Yes          | No              | No             |
| View Schedule Runs                                                    | Yes                   | Yes               | No              | Yes          | No              | Yes            |
| Update Schedule Parameters                                            | Yes                   | Yes               | No              | Yes          | No              | No             |
| Convert scheduled integration to app-driven orchestration integration | Yes                   | Yes               | No              | No           | No              | No             |

| Action                                                 | Service Administrator | Service Developer | Service Monitor | Service User | Service Invoker | Service Viewer |
|--------------------------------------------------------|-----------------------|-------------------|-----------------|--------------|-----------------|----------------|
| Run or schedule integrations on behalf of another user | Yes                   | No                | No              | No           | No              | No             |

### Connections

| Action           | Service Administrator | Service Developer | Service Monitor | Service User | Service Invoker | Service Viewer |
|------------------|-----------------------|-------------------|-----------------|--------------|-----------------|----------------|
| Create           | Yes                   | Yes               | No              | No           | No              | No             |
| Edit             | Yes                   | Yes               | No              | No           | No              | No             |
| Delete           | Yes                   | Yes               | No              | No           | No              | No             |
| View             | Yes                   | Yes               | No              | Yes          | No              | Yes            |
| Test             | Yes                   | Yes               | No              | No           | No              | No             |
| Clone            | Yes                   | Yes               | No              | No           | No              | No             |
| Unlock           | Yes                   | Yes               | No              | No           | No              | No             |
| Refresh Metadata | Yes                   | Yes               | No              | No           | No              | No             |

### Lookups

| Action        | Service Administrator | Service Developer | Service Monitor | Service User | Service Invoker | Service Viewer |
|---------------|-----------------------|-------------------|-----------------|--------------|-----------------|----------------|
| Create        | Yes                   | Yes               | No              | No           | No              | No             |
| View          | Yes                   | Yes               | No              | Yes          | No              | Yes            |
| Edit          | Yes                   | Yes               | No              | No           | No              | No             |
| Clone         | Yes                   | Yes               | No              | No           | No              | No             |
| Delete        | Yes                   | Yes               | No              | No           | No              | No             |
| Export to CSV | Yes                   | Yes               | No              | Yes          | No              | Yes            |
| Import        | Yes                   | Yes               | No              | No           | No              | No             |

### Packages

| Action                               | Service Administrator | Service Developer | Service Monitor | Service User | Service Invoker | Service Viewer |
|--------------------------------------|-----------------------|-------------------|-----------------|--------------|-----------------|----------------|
| View                                 | Yes                   | Yes               | No              | Yes          | No              | Yes            |
| Create (during integration creation) | Yes                   | Yes               | No              | No           | No              | No             |

| Action                              | Service Administrator | Service Developer | Service Monitor | Service User | Service Invoker | Service Viewer |
|-------------------------------------|-----------------------|-------------------|-----------------|--------------|-----------------|----------------|
| Import                              | Yes                   | Yes               | No              | No           | No              | No             |
| Export                              | Yes                   | Yes               | No              | Yes          | No              | No             |
| Update (through integration update) | Yes                   | Yes               | No              | No           | No              | No             |
| Delete                              | Yes                   | Yes               | No              | No           | No              | No             |
| Configure                           | Yes                   | Yes               | No              | No           | No              | No             |

### Agents

| Action                      | Service Administrator | Service Developer | Service Monitor | Service User | Service Invoker | Service Viewer |
|-----------------------------|-----------------------|-------------------|-----------------|--------------|-----------------|----------------|
| View                        | Yes                   | Yes               | No              | Yes          | No              | Yes            |
| Edit Agent Group            | Yes                   | Yes               | No              | No           | No              | No             |
| Delete Agent Group          | Yes                   | Yes               | No              | No           | No              | No             |
| Create Agent Group          | Yes                   | Yes               | No              | No           | No              | No             |
| Download connectivity agent | Yes                   | No                | No              | No           | No              | No             |

### Adapters

| Action            | Service Administrator | Service Developer | Service Monitor | Service User | Service Invoker | Service Viewer |
|-------------------|-----------------------|-------------------|-----------------|--------------|-----------------|----------------|
| View              | Yes                   | Yes               | No              | Yes          | No              | No             |
| Delete            | Yes                   | Yes               | No              | No           | No              | No             |
| Create Connection | Yes                   | Yes               | No              | No           | No              | No             |

### Libraries

| Action | Service Administrator | Service Developer | Service Monitor | Service User | Service Invoker | Service Viewer |
|--------|-----------------------|-------------------|-----------------|--------------|-----------------|----------------|
| View   | Yes                   | Yes               | No              | Yes          | No              | Yes            |
| Edit   | Yes                   | Yes               | No              | No           | No              | No             |
| Create | Yes                   | Yes               | No              | No           | No              | No             |
| Import | Yes                   | Yes               | No              | No           | No              | No             |
| Delete | Yes                   | Yes               | No              | No           | No              | No             |

| Action | Service Administrator | Service Developer | Service Monitor | Service User | Service Invoker | Service Viewer |
|--------|-----------------------|-------------------|-----------------|--------------|-----------------|----------------|
| Update | Yes                   | Yes               | No              | No           | No              | No             |
| Export | Yes                   | Yes               | No              | Yes          | No              | Yes            |

## What Users Can Do from the Username Main Menu

The following table lists the Oracle Integration tasks available from the **Username** main menu in the upper right corner of the Integrations pages, and the roles users must be granted to perform those tasks.

### **Username** Main Menu

| Action                    | Service Administrator | Service Developer | Service Monitor | Service User | Service Invoker | Service Viewer |
|---------------------------|-----------------------|-------------------|-----------------|--------------|-----------------|----------------|
| Set Time Zone Preferences | Yes                   | Yes               | No              | Yes          | No              | Yes            |
| Report Incidents          | Yes                   | Yes               | No              | Yes          | No              | Yes            |

## What Users Can Do in the Monitoring Section by Role

The following tables list Oracle Integration predefined roles available in the Monitoring section, and the tasks users granted those roles can perform.

- [Usage Metrics](#)
- [Integrations > Dashboards](#)
- [Integrations > Integrations](#)
- [Integrations > Agents](#)
- [Integrations > Tracking](#)
- [Integrations > Errors](#)

### Usage Metrics

| Action | Service Administrator | Service Developer | Service Monitor | Service User | Service Invoker | Service Viewer |
|--------|-----------------------|-------------------|-----------------|--------------|-----------------|----------------|
| View   | Yes                   | No                | Yes             | No           | No              | No             |
| Export | Yes                   | No                | Yes             | No           | No              | No             |

### Integrations > Dashboards

| Action                          | Service Administrator | ServiceDeveloper | ServiceMonitor | ServiceUser | ServiceInvoker | ServiceViewer |
|---------------------------------|-----------------------|------------------|----------------|-------------|----------------|---------------|
| View Activity Stream            | Yes                   | Yes              | Yes            | Yes         | No             | Yes           |
| View Design-time Audit          | Yes                   | Yes              | Yes            | Yes         | No             | Yes           |
| View Runtime Health             | Yes                   | Yes              | Yes            | Yes         | No             | Yes           |
| View System Health              | Yes                   | Yes              | Yes            | Yes         | No             | Yes           |
| View Agent Health               | Yes                   | Yes              | Yes            | Yes         | No             | Yes           |
| View Integrations               | Yes                   | Yes              | Yes            | Yes         | No             | Yes           |
| View Scheduling                 | Yes                   | Yes              | Yes            | Yes         | No             | Yes           |
| View Design-time Metrics        | Yes                   | Yes              | Yes            | Yes         | No             | Yes           |
| View the Hourly / Daily History | Yes                   | Yes              | Yes            | Yes         | No             | Yes           |

### Integrations > Integrations

| Action | Service Administrator | ServiceDeveloper | ServiceMonitor | ServiceUser | ServiceInvoker | ServiceViewer |
|--------|-----------------------|------------------|----------------|-------------|----------------|---------------|
| View   | Yes                   | Yes              | Yes            | Yes         | No             | Yes           |

### Integrations > Agents

| Action | Service Administrator | ServiceDeveloper | ServiceMonitor | ServiceUser | ServiceInvoker | ServiceViewer |
|--------|-----------------------|------------------|----------------|-------------|----------------|---------------|
| View   | Yes                   | Yes              | Yes            | Yes         | No             | Yes           |

### Integrations > Tracking

| Action              | Service Administrator | ServiceDeveloper | ServiceMonitor | ServiceUser | ServiceInvoker | ServiceViewer |
|---------------------|-----------------------|------------------|----------------|-------------|----------------|---------------|
| View Details        | Yes                   | Yes              | Yes            | Yes         | No             | Yes           |
| Asserter Recordings | Yes                   | Yes              | Yes            | No          | No             | Yes           |

| Action                    | Service Administrator | Service Developer | Service Monitor | Service User | Service Invoker | Service Viewer |
|---------------------------|-----------------------|-------------------|-----------------|--------------|-----------------|----------------|
| View Business Identifiers | Yes                   | Yes               | Yes             | Yes          | No              | Yes            |
| View Activity Stream      | Yes                   | Yes               | Yes             | Yes          | No              | Yes            |
| Download Activity Stream  | Yes                   | Yes               | Yes             | Yes          | No              | Yes            |

### Integrations > Errors

| Action   | Service Administrator | Service Developer | Service Monitor | Service User | Service Invoker | Service Viewer |
|----------|-----------------------|-------------------|-----------------|--------------|-----------------|----------------|
| View     | Yes                   | Yes               | Yes             | Yes          | No              | Yes            |
| Abort    | Yes                   | Yes               | Yes             | Yes          | No              | No             |
| Resubmit | Yes                   | Yes               | No              | Yes          | No              | No             |

## What Users Can Do in the Settings Section by Role

The following tables list Oracle Integration predefined roles available in the Settings section, and the tasks users granted those roles can perform.

- [Data Retention](#)
- [Import/Export](#)
- [Storage](#)
- [Certificates](#)
- [Integrations > Notifications](#)
- [Integrations > Recommendations](#)
- [Integrations > API Management](#)
- [Integrations > Tracing](#)
- [Integrations > Schedule](#)

### Import/Export

| Action                   | Service Administrator | Service Developer | Service Monitor | Service User | Service Invoker | Service Viewer |
|--------------------------|-----------------------|-------------------|-----------------|--------------|-----------------|----------------|
| Import                   | Yes                   | No                | No              | No           | No              | No             |
| Export                   | Yes                   | No                | No              | No           | No              | No             |
| Download Detailed Report | Yes                   | No                | No              | No           | No              | No             |

| Action | Service Administrator | Service Developer | Service Monitor | Service User | Service Invoker | Service Viewer |
|--------|-----------------------|-------------------|-----------------|--------------|-----------------|----------------|
| View   | Yes                   | No                | No              | No           | No              | No             |

### Storage

| Action | Service Administrator | Service Developer | Service Monitor | Service User | Service Invoker | Service Viewer |
|--------|-----------------------|-------------------|-----------------|--------------|-----------------|----------------|
| View   | Yes                   | No                | No              | No           | No              | No             |
| Save   | Yes                   | No                | No              | No           | No              | No             |
| Reset  | Yes                   | No                | No              | No           | No              | No             |

### Certificates

| Action | Service Administrator | Service Developer | Service Monitor | Service User | Service Invoker | Service Viewer |
|--------|-----------------------|-------------------|-----------------|--------------|-----------------|----------------|
| View   | Yes                   | No                | No              | No           | No              | No             |
| Upload | Yes                   | No                | No              | No           | No              | No             |
| Update | Yes                   | No                | No              | No           | No              | No             |
| Delete | Yes                   | No                | No              | No           | No              | No             |

### Integrations > Notifications

| Action                  | Service Administrator | Service Developer | Service Monitor | Service User | Service Invoker | Service Viewer |
|-------------------------|-----------------------|-------------------|-----------------|--------------|-----------------|----------------|
| View                    | Yes                   | No                | No              | No           | No              | No             |
| Revert                  | Yes                   | No                | No              | No           | No              | No             |
| Save                    | Yes                   | No                | No              | No           | No              | No             |
| Send Now                | Yes                   | No                | No              | No           | No              | No             |
| Reset All Notifications | Yes                   | No                | No              | No           | No              | No             |

### Integrations > Data Retention

| Action    | Service Administrator | Service Developer | Service Monitor | Service User | Service Invoker | Service Viewer |
|-----------|-----------------------|-------------------|-----------------|--------------|-----------------|----------------|
| View      | Yes                   | No                | No              | No           | No              | No             |
| Revert    | Yes                   | No                | No              | No           | No              | No             |
| Save      | Yes                   | No                | No              | No           | No              | No             |
| Purge Now | Yes                   | No                | No              | No           | No              | No             |

| Action                   | Service Administrator | Service Developer | Service Monitor | Service User | Service Invoker | Service Viewer |
|--------------------------|-----------------------|-------------------|-----------------|--------------|-----------------|----------------|
| Configure database space | Yes                   | No                | No              | No           | No              | No             |
| Configure Nightly Purge  | Yes                   | No                | No              | No           | No              | No             |
| Configure Auto Purge     | Yes                   | No                | No              | No           | No              | No             |

### Integrations > Recommendations

| Action                                    | Service Administrator | Service Developer | Service Monitor | Service User | Service Invoker | Service Viewer |
|-------------------------------------------|-----------------------|-------------------|-----------------|--------------|-----------------|----------------|
| View                                      | Yes                   | No                | No              | No           | No              | No             |
| Contribute integration mappings to Oracle | Yes                   | No                | No              | No           | No              | No             |
| Recommend                                 |                       |                   |                 |              |                 |                |
| Save                                      | Yes                   | No                | No              | No           | No              | No             |

### Integrations > API Management

**Table B-1 API Gateway (Preferred)**

| Action                               | Service Administrator | Service Developer | Service Monitor | Service User | Service Invoker | Service Viewer |
|--------------------------------------|-----------------------|-------------------|-----------------|--------------|-----------------|----------------|
| View                                 | Yes                   | No                | No              | No           | No              | No             |
| Save                                 | Yes                   | No                | No              | No           | No              | No             |
| Revert                               | Yes                   | No                | No              | No           | No              | No             |
| Create Connectivity with API Gateway | Yes                   | No                | No              | No           | No              | No             |

**Table B-2 API Platform**

| Action | Service Administrator | Service Developer | Service Monitor | Service User | Service Invoker | Service Viewer |
|--------|-----------------------|-------------------|-----------------|--------------|-----------------|----------------|
| View   | Yes                   | No                | No              | No           | No              | No             |
| Save   | Yes                   | No                | No              | No           | No              | No             |
| Revert | Yes                   | No                | No              | No           | No              | No             |

**Table B-2 (Cont.) API Platform**

| Action                          | Service Administrator | ServiceDeveloper | ServiceMonitor | ServiceUser | ServiceInvoker | ServiceViewer |
|---------------------------------|-----------------------|------------------|----------------|-------------|----------------|---------------|
| Create Connectivity with API CS | Yes                   | No               | No             | No          | No             | No            |

**Integrations > Tracing**

| Action          | Service Administrator | ServiceDeveloper | ServiceMonitor | ServiceUser | ServiceInvoker | ServiceViewer |
|-----------------|-----------------------|------------------|----------------|-------------|----------------|---------------|
| View            | Yes                   | No               | No             | No          | No             | No            |
| Save            | Yes                   | No               | No             | No          | No             | No            |
| Revert          | Yes                   | No               | No             | No          | No             | No            |
| Include payload | Yes                   | No               | No             | No          | No             | No            |

**Integrations > Schedule**

| Action | Service Administrator | ServiceDeveloper | ServiceMonitor | ServiceUser | ServiceInvoker | ServiceViewer |
|--------|-----------------------|------------------|----------------|-------------|----------------|---------------|
| Save   | Yes                   | No               | No             | No          | No             | No            |

## What Users Can Do in Processes by Role

Permissions in Processes are defined by Oracle Integration roles. The following table lists the Oracle Integration predefined roles available in Processes, and the tasks users granted those roles can perform. Note that in Processes, the ServiceMonitor, ServiceUser, and ServiceEndUser roles have the same privileges. In addition to these predefined roles, there is a set of roles defined for each process application. Service administrators are responsible for assigning process-specific roles to users.

 **Notes:**

- The following roles do not have any privileges in Processes:
  - ServiceInvoker
  - ServiceViewer
- The ServiceEndUser role is available only for new instances created using version 22.2 or later. This role cannot be granted to existing instances created prior to version 22.2.

| Option                          | Actions                                                                                                                                                                                                                                                                     | Service Administrator | Service Developer | Service Deployer | ServiceMonitor, ServiceUser, and ServiceEndUser |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-------------------|------------------|-------------------------------------------------|
| <b>My Tasks</b>                 | Access Workspace (runtime), initiate requests (start applications), work on your assigned tasks, and track the status of processes                                                                                                                                          | Yes                   | Yes               | Yes              | Yes                                             |
| <b>My Tasks</b>                 | Monitor dashboards                                                                                                                                                                                                                                                          | Yes                   | Yes               | Yes              | Yes                                             |
| <b>Applications</b>             | Perform all actions to develop and manage process applications and their components, except restrictions on activating                                                                                                                                                      | Yes                   | Yes               | Yes              | No                                              |
| <b>Applications</b>             | Activate process applications to a test partition                                                                                                                                                                                                                           | Yes                   | Yes               | Yes              | No                                              |
| <b>Applications</b>             | Activate process applications to a production partition                                                                                                                                                                                                                     | Yes                   | No                | No               | No                                              |
| <b>Spaces</b>                   | View your spaces and the spaces shared with you, and create, edit, share, and delete your spaces                                                                                                                                                                            | Yes                   | Yes               | Yes              | No                                              |
| <b>Spaces</b>                   | Administer any space (check status, control permissions, and delete)                                                                                                                                                                                                        | Yes                   | No                | No               | No                                              |
| <b>Management</b>               | Manage process applications (activate to production partition, retire, deactivate, shut down, and manage web services)                                                                                                                                                      | Yes                   | No                | No               | No                                              |
| <b>Administration (runtime)</b> | Configure connections to other services, configure process runtime and logger settings, schedule archive and purge, configure UI custom settings, assign and manage roles specific to process applications, manage credentials and certificates, and view notification logs | Yes                   | No                | No               | No                                              |
| <b>Settings (design-time)</b>   | Administer any space (check status, control permissions, delete), administer any process application (delete, unlock), delete QuickStart Apps from the gallery, enable the application player, and use the Import utility                                                   | Yes                   | No                | No               | No                                              |

## What Users Can Do in Insight by Role

Permissions in Insight are defined by a subset of Oracle Integration roles. The role(s) that you are assigned define your persona in Insight.

 **Note:**

The following roles do not have any privileges in Insight:

- ServiceMonitor
- ServiceDeployer
- ServiceInvoker
- ServiceViewer

The following table lists predefined roles available in Oracle Integration, and the Insight tasks that personas associated with those roles can perform.

| Oracle Integration Roles       | Personas and Permissions in Insight                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ServiceAdministrator           | <p>This Oracle Integration role maps to the Insight persona <i>Insight Administrator</i>.</p> <p>This is a super user who manages Insight. This user can purge Insight model data and has all the privileges of the other roles to view, create, manage, edit, and delete all the models and dashboards.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| ServiceDeveloper               | <p>This Oracle Integration role includes the Insight personas <i>Business User/Analyst</i> and <i>Integration Architect</i>.</p> <p>This user can view, create, manage, edit, and delete Insight models.</p> <p>The Business User/Analyst understands the business use case and defines business milestones and indicators in an Insight model.</p> <p>The Integration Architect understands the end-to-end business process implemented in Oracle Integration and defines the mapping of the milestones to the appropriate location in the business process implementation and the extraction criteria of Insight indicators.</p> <p>This user does not have access to Insight dashboards through the Consoles page.</p>                                                                                                                                                                                                                                                                                                                                                 |
| ServiceUser and ServiceEndUser | <p>These Oracle Integration roles map to the Insight persona <i>Business Executive</i>.</p> <p>The ServiceEndUser role is available only for new instances created using version 22.2 or later. This role cannot be granted to existing instances created prior to version 22.2.</p> <p>This user understands how the business works and can use the Insight consoles, which provide preconfigured and custom dashboards, to gain insight into business process status and activity in real time. For example, this user might ask an integration architect and business analyst to build a model in Insight to provide a visualization of which products are selling best in which US state and if there are any models with a high return rate. This data helps to make decisions such as investing more marketing dollars in certain regions and if it makes sense to expand overseas.</p> <p>This user can view, create, manage, edit, and delete Insight dashboards through the Consoles page. This user does not have access to models through the Models page.</p> |

## What Users Can Do in File Server by Role

Permissions in File Server are defined by a subset of Oracle Integration roles.

 **Note:**

The following roles do not have any privileges in File Server:

- ServiceMonitor
- ServiceDeployer
- ServiceEndUser
- ServiceInvoker
- ServiceViewer

The following table lists predefined roles available in Oracle Integration, and the File Server tasks that users with those roles can perform.

| Oracle Integration Roles | Personas and Permissions in File Server                                                                                                                                                                                                          |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ServiceAdministrator     | Users with this role can manage server settings and configure users, groups, and folders, including permissions. To administer File Server as described in this guide, you must be assigned the ServiceAdministrator role in Oracle Integration. |
| ServiceDeveloper         | Users with this role can use File Server along with the FTP adapter in Integrations to read and write files.                                                                                                                                     |
| ServiceUser              | Users with this role can access File Server using an SFTP client. These users must be configured and enabled as users in File Server. Their access is controlled by their assigned folders and folder permissions.                               |

## What Users Can Do in Visual Builder by Role

The following table lists Oracle Integration predefined roles available in Visual Builder, and the tasks that users granted those roles can perform.

 **Note:**

The following roles do not have any privileges in Visual Builder:

- ServiceMonitor
- ServiceDeployer
- ServiceEndUser
- ServiceInvoker
- ServiceViewer

| Oracle Integration Role | Tasks Users Can Perform in Visual Builder                                                                                                                                                                                                                                                                                                                                                |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ServiceAdministrator    | <p>A user with the ServiceAdministrator role can:</p> <ul style="list-style-type: none"> <li>• Use the visual design tool</li> <li>• Create, manage, and change the owners of applications</li> <li>• Create associations with other services</li> <li>• Configure security options for applications in an instance</li> <li>• Specify error messages for Access Denied pages</li> </ul> |
| ServiceDeveloper        | <p>A user with the ServiceDeveloper role can:</p> <ul style="list-style-type: none"> <li>• Use the visual design tool</li> <li>• Create, manage, secure, and publish web and mobile applications</li> <li>• Design pages, work with business objects, build and test applications</li> </ul>                                                                                             |
| ServiceUser             | <p>A user with the role of ServiceUser can only access staged and published applications. The default permission is enforced only when the service administrator adjusts security settings for the entire service instance to restrict all access to runtime applications to the users granted the ServiceUser role.</p>                                                                 |

## What Users Can Do in B2B for Oracle Integration by Role

The following table lists Oracle Integration predefined roles available in B2B for Oracle Integration and the tasks that users granted those roles can perform.

 **Note:**

The following roles do not have any privileges in B2B for Oracle Integration:

- ServiceDeployer
- ServiceEndUser
- ServiceInvoker

The list of tasks that different user roles can perform on B2B integrations (integrations using the B2B action) are the same as the tasks they can perform on other integrations. See [What Users Can Do in the Integrations Design Section by Role](#).

| Action                         | Service Administrator | ServiceDeveloper | ServiceMonitor | ServiceUser | ServiceViewer |
|--------------------------------|-----------------------|------------------|----------------|-------------|---------------|
| View B2B Documents             | Yes                   | Yes              | No             | No          | No            |
| Create or Modify B2B Documents | Yes                   | Yes              | No             | No          | No            |
| View B2B Schemas               | Yes                   | Yes              | No             | No          | No            |
| Create or Modify B2B Schemas   | Yes                   | Yes              | No             | No          | No            |
| Generate Implementation Guide  | Yes                   | Yes              | No             | No          | No            |

| Action                            | Service Administrator | ServiceDeveloper | ServiceMonitor | ServiceUser                                               | ServiceViewer                                             |
|-----------------------------------|-----------------------|------------------|----------------|-----------------------------------------------------------|-----------------------------------------------------------|
| Create or modify host profiles    | Yes                   | Yes              | No             | Yes (Can view only)                                       | Yes (Can view only)                                       |
| Create or modify trading partners | Yes                   | Yes              | No             | Yes (Can view only)                                       | Yes (Can view only)                                       |
| Track B2B messages                | Yes                   | Yes              | No             | Yes (Can view message details and download payloads only) | Yes (Can view message details and download payloads only) |