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Working with External Database

Student Guide

S1102504GC10

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Introduction

- Database Management is a new OCI native service that will provide broad capabilities for managing and monitoring Oracle Databases.
- The service will support databases deployed **external** (on premises) and in the **Oracle Cloud (OCI)**, such as VM/BM, ExaCS, ExaCC, and Autonomous DB.
- Database Management currently supports only External Oracle Databases, which are Oracle Databases located on premises.
- The Database Management service will offer capabilities for:
  - Fleet monitoring and management
  - Database Groups
  - SQL Jobs

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Oracle has been a leader in Database Management for decades, and now these unique capabilities are available in Oracle Cloud.

The new Database Management service brings the best of Oracle's industry-leading capabilities from Oracle Enterprise Manager into Oracle Cloud.

This includes fleet-wide monitoring and management for all flavors of Oracle database, whether they live on premises or in the cloud. So, if you're using Database 11, 12, 18, 19, 21, or the Autonomous Database or the Exadata Cloud, you'll be able to get a comprehensive view of the performance of your Database fleet.

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Using Database Management, you can:

- Monitor the key performance and configuration metrics of your fleet of Oracle Databases. You can also compare and analyze database metrics over a selected period of time.
- Group your critical Oracle Databases, which reside across compartments into a Database Group, and monitor them.
- Create SQL jobs to perform administrative operations on a single Oracle Database or a Database Group.

Get Started with Database Management

1. Install and Configure Management Agents for Database Management
2. Register an Oracle Database with the External Database Service by Creating a Handle
3. Create Connection to the Registered External Database
4. Enable Database Management on the External Database

3

The Oracle Cloud Infrastructure service that enables communication and data collection between Database Management Service and an External Database is the Management Agent Cloud Service. For this purpose, the Management Agent Cloud Service uses a Management Agent, which is installed on a host that has a connection to the External Oracle Database.

An Oracle Database must first be registered with the External Database service before Database Management can be enabled. We will make use of the External Database service to register your External Oracle Databases in Oracle Cloud Infrastructure.

Connectivity is established using the Management Agent Cloud Service via the agent.

Installing and Configuring Management Agents for Database Management

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Installing and Configuring Management Agents for Database Management

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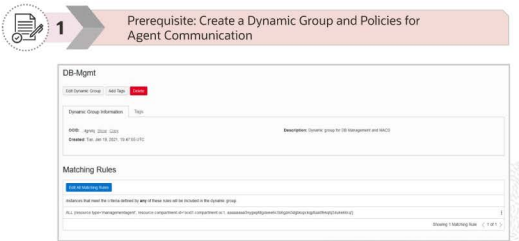
Set Up Oracle Cloud Infrastructure for Management Agents



To interact with the Oracle Cloud Infrastructure service end points, you must explicitly consent to let the management agents carry on the communication with the MACS. In this step, a dynamic group is created using the Identity and Access Management service from the OCI Console. This group includes all the management agents. This is a one-time setup step, as any new management agent being installed will automatically belong to this group based on resource-type matching rules definition of the dynamic group.

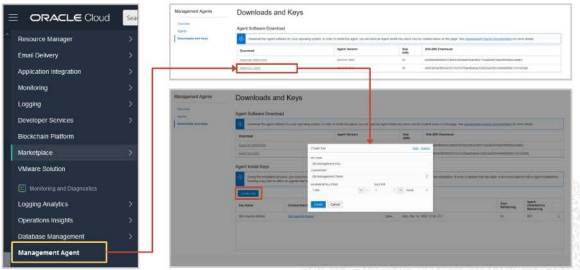
Set Up Oracle Cloud Infrastructure for Management Agents

Once the dynamic group is created, you need to create policies to allow the management agents to interact with the Management Agent service and to allow the management agents to upload data to the Oracle Cloud Infrastructure Monitoring service.

You may need to add similar policies if your service expects the management agent to deposit data to different services.

Download the Agent Software from Management Agent Cloud Service in OCI

Download the Management Agent Software



On the Management Agents home page, click **Downloads and Keys** from the left menu to view the Agent Software Download pane. On the Agent Software Download pane, select the operating system that the Management Agent will be installed on. For example, click **Agent for LINUX** for Linux.

The Agent Software file is now saved on your host.

You need to create an agent install key before performing the Management Agent installation.

Install the Management Agent Software

Install and Configure the Management Agent Software

- Install Management Agent – (Agent Version 201215.1850 and above).

```
$ sudo rpm -ivh oracle.mgmt_agent.rpm
```

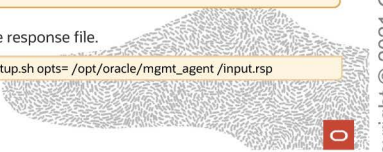
- Create a response file named `input.rsp` using a text editor under /opt/oracle/mgmt_agent.

```
$ sudo -u mgmt_agent sh
```

```
managementAgentInstallKey = MS4wLHVzLWFzaGJ1cm4tMSxvY2lkMS50ZW5hbmN5
CredentialWalletPassword = Passw0rd#
```

- Configure the management agent using the response file.

```
$ sudo /opt/oracle/mgmt_agent/agent_inst/bin/setup.sh opts= /opt/oracle/mgmt_agent /input.rsp
```



The agent installation process does the following: A new user called mgmt_agent is created. This will be the management agent user. If mgmt_agent user already exists, the agent installation process will use it to install the agent software.

All agent files are copied and installed by mgmt_agent user. The agent install base directory is the directory where the agent is installed. The directory is created as part of the agent installation process under /opt/oracle/mgmt_agent directory.

The Management Agent installation script uses a response file to read the agent parameters specific to your environment.

Agent install key is required to validate the OCI region and the authenticity of the installation. For the password of the agent wallet, the user provides a custom password for the wallet to store sensitive information. Password minimum length is eight characters and must contain alphabetic characters combined with numbers or special characters.

Verify the Management Agent Software

1 Prerequisite: Create a Dynamic Group and Policies for Agent Communication

2 Download the Agent Software from Management Agent Cloud Service in OCI

3 Install and Configure the Management Agent Software

4 Verify the Management Agent Installation

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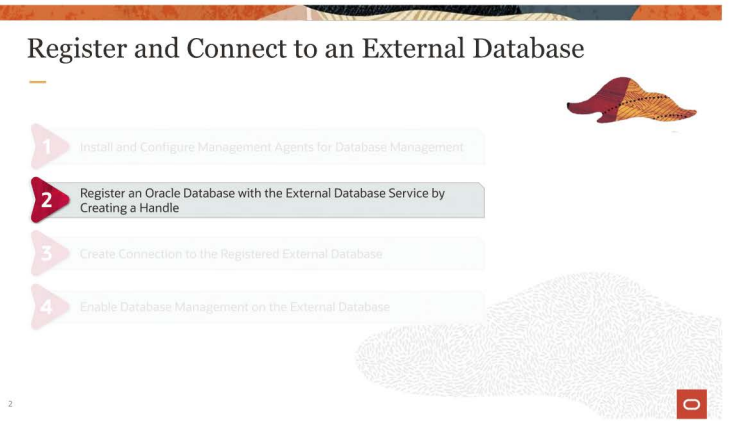
Verify the Management Agent Software

On the main Management Agents page, click **Agents** from the left menu. From the Agents list, look for the agent that was recently installed using the **Created** column, which displays the date of the agent installation, or the **Host** column, which displays the host name where the agent was installed. The Availability column would be marked as Active.



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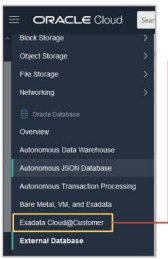
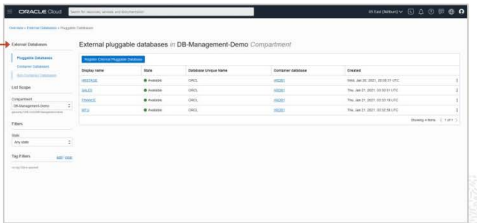
Register an Oracle Database with the External Database Service by Creating a Handle





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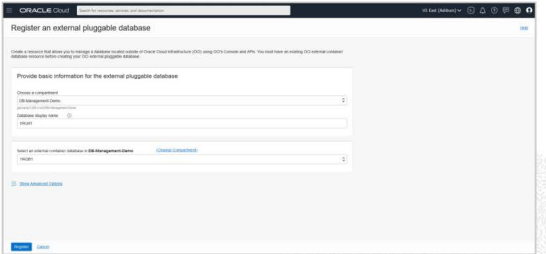

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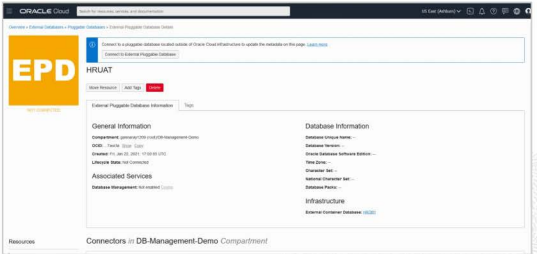

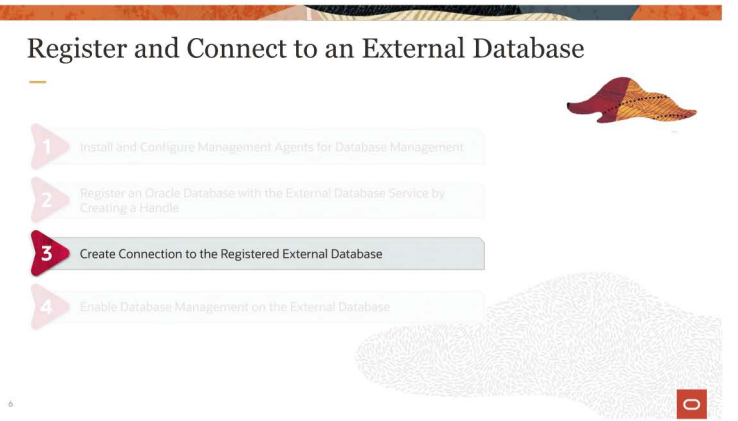

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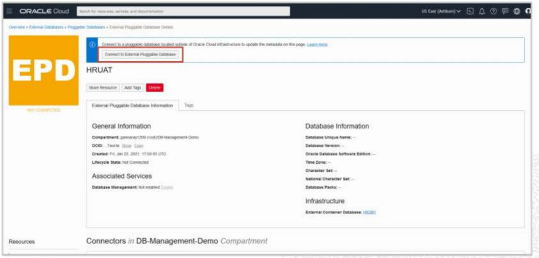

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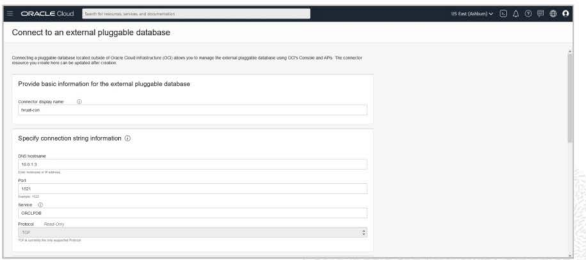

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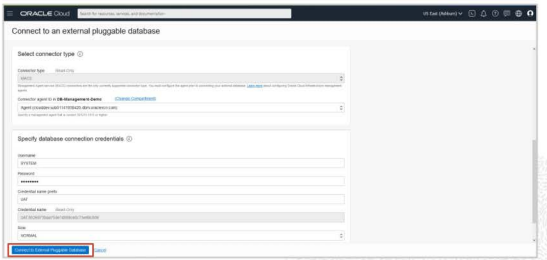

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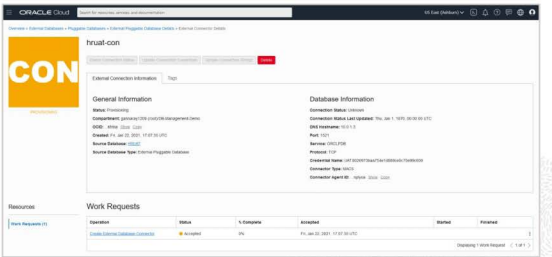

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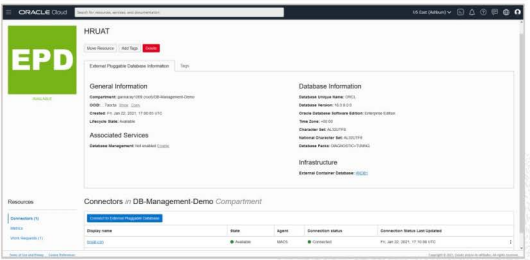

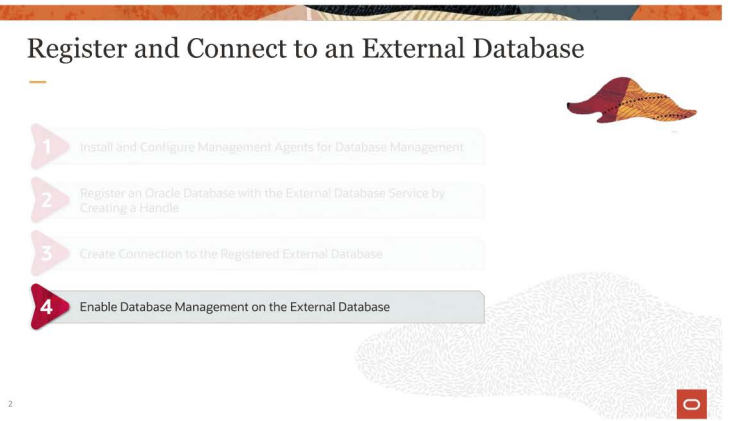

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Use Cases

Fleet monitoring and management within a compartment:

- Overview of all my Database Fleet
- View Database Fleet dashboard to visualize the overall health of the fleet

Fleet monitoring and management across compartments—Database Groups:

- Monitor and manage Database Fleet across compartments using Database Groups
- Automate database fleet management for better operational efficiency (SQL Jobs)

Database Monitoring and Management—Single Database:

- Database Summary: Monitor Database metrics for a specific database
- Jobs: Run SQL Jobs specific to a database

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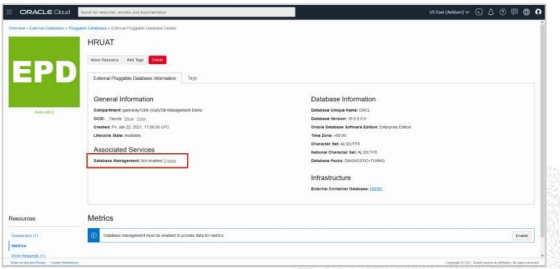
Enable Database Management on the External Database



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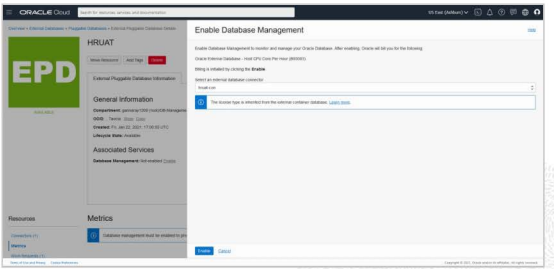

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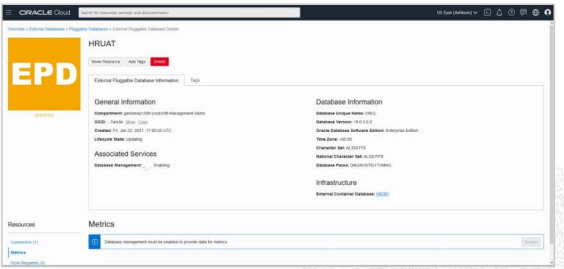

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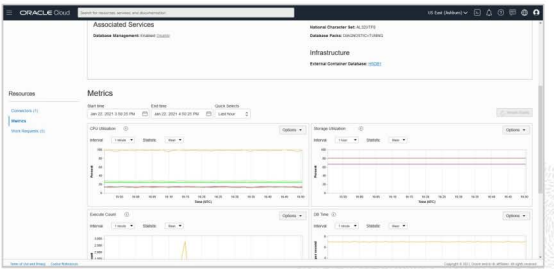

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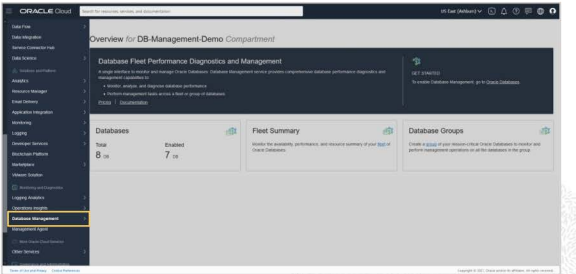
Using Database Management Service



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Fleet Monitoring and Management

- Unified NOC-style view of entire Oracle DB fleet
- Native OCI telemetry for DevOps events and monitoring
- Database Groups enable cross-compartment fleets
- Fleet-level management
  - SQL job execution