

Oracle® Enterprise Manager Ops Center

Operations for Oracle SuperCluster Reference

12c Release 3 (12.3.2.0.0)

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Oracle Enterprise Manager Ops Center Operations for Oracle SuperCluster Reference, 12c Release 3
(12.3.2.0.0)

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Contents

Preface	v
Audience	v
Related Documents.....	v
Conventions.....	v
1 Get Started with Operations for Oracle SuperCluster	
2 Manage User Roles for Oracle SuperCluster	
Ops Center Administrator Role	2-1
SuperCluster Systems Admin Role	2-1
Creating a SuperCluster Systems Administrator Role	2-2
Assign Permissions to the Role	2-3
SuperCluster Systems Admin Role Permissions	2-5
Cloud Admin.....	2-6
Cloud User	2-6
3 Manage Oracle Engineered Systems	
Configure Oracle SuperCluster	3-2
Overlapping IB Networks Enabled	3-2
Overlapping IB Networks not Enabled.....	3-3
Limitations.....	3-5
Oracle Solaris 11 Software Library Setup	3-5
Deploy Proxy Controller	3-6
Prepare Setup for Oracle SuperCluster Discovery	3-6
Ports for Oracle SuperCluster.....	3-8
Discover Oracle SuperCluster.....	3-8
Asset Protection	3-9
Disable Asset Protection.....	3-10
Root and Database Domain Protection for Oracle SuperCluster 2.0.....	3-10
View Oracle Engineered Systems (Oracle SuperCluster)	3-11
Photorealistic View	3-12
Create Oracle Engineered Systems (Oracle SuperCluster) Report.....	3-14

Viewing Engineered Systems Reports	3-16
Baseline Check	3-17

4 Manage Oracle SuperCluster

Oracle SuperCluster M7.....	4-1
Oracle SuperCluster M6-32	4-1
Oracle SuperCluster T5-8.....	4-2
Oracle SPARC SuperCluster T4-4	4-2
Viewing the Oracle SuperCluster System	4-3
Dashboard Tab.....	4-4
Details Tab.....	4-5
Networks Tab.....	4-6
Incidents Tab.....	4-6
Viewing the Oracle SuperCluster System Rack	4-6
Viewing the Exadata Storage Server.....	4-9
Discovering an Oracle SuperCluster Component.....	4-9

5 Related Resources

Glossary

Index

Preface

The Oracle® *Enterprise Manager Ops Center Operations for Oracle SuperCluster Reference* describes all features of the Oracle Enterprise Manager Ops Center software.

Audience

This document is intended for users who require a detailed description of features and functionality.

Related Documents

For more information, see the Oracle Enterprise Manager Ops Center Documentation Library at http://docs.oracle.com/cd/E59957_01/index.htm

Oracle Enterprise Manager Ops Center provides online Help. Click Help at the top-right corner of any page in the user interface to display the online help window.

For the latest releases of Oracle documentation, check the Oracle Technology Network at: <http://www.oracle.com/technetwork/documentation/index.html#em>

Conventions

The following text conventions are used in this document:

Convention	Meaning
<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, code in examples, text that appears on the screen, or text that you enter.

Get Started with Operations for Oracle SuperCluster

Oracle Enterprise Manager Ops Center is Oracle's comprehensive solution for managing the physical and virtual assets in your data center: operating systems, firmware, BIOS configurations, bare metal server and virtual guest provisioning, hardware monitoring, automatic My Oracle Support service request generation, and performance and energy management.

Traditionally, IT departments have been required to install and configure software that is hosted on hardware that was itself installed and configured separately. Oracle Engineered Systems relieve this burden from the IT department by providing a pre-defined combination of hardware and software. Oracle Engineered Systems is a complete set of integrated hardware and software that is designed to reach a predetermined level of capability, capacity, and scale. This relatively new concept of an integrated hardware and software solution, dedicated to provide a specific service, changes the way one must think about architecture in IT environments.

In addition to removing the burden of installation and configuration, Oracle Engineered Systems provide significant cost savings, this is one of the many advantages delivered by Oracle Engineered Systems. An even larger advantage is the optimization that pre-defined hardware and software enables. As the hardware and software are engineered together to form a complete system, there are multiple opportunities to improve the overall system performance. The unified and integrated monitoring and management of the Oracle Engineered Systems also provide cost savings through simplification of the overall environment. Thus, Oracle Engineered Systems allow datacenter services to be delivered more efficiently through modular or dedicated systems. This greatly simplifies the entire purchase, deploy, configure, monitor, and manage life cycle of the provided services.

The whole impetus for cloud computing is to provide specific services such as Infrastructure as a Service (IaaS), Platform as a Service (PaaS), or Software as a Service (SaaS) as efficiently as possible; therefore, the increased efficiency delivered by Oracle Engineered Systems make them ideal candidates for the building blocks of a cloud computing environment.

In addition to creating a cloud computing environment, the building blocks address a variety of enterprise architecture requirements to provide a path for enterprise maturation alongside the move to cloud adoption. Each building block is selected as needed to meet specific maturation needs, and thus, ultimately it provides an increase in overall architectural flexibility. For example, an architect may choose to integrate an Exadata Storage Server and Oracle SuperCluster or Oracle VM Blade Cluster early on to begin the process of consolidation into a scalable architecture, and then expand the system later to meet future demand. Shifting the overall environment into a standardized architecture opens possibilities for future shift into cloud adoption or continuation down the traditional enterprise computing maturation continuum while providing for future scale.

The following are the different Oracle Engineered Systems that are supported by Enterprise Manager Ops Center.

- Oracle SuperCluster M7
- Oracle SuperCluster M6-32
- Oracle SuperCluster T5-8
- Oracle SPARC SuperCluster T4-4

Oracle SuperCluster M7 delivers an integrated hardware and software stack, with compute, storage, and network all engineered to work optimally together to provide a consolidated platform for running database, middleware, and applications from both Oracle and third parties. Oracle Enterprise Manager Ops Center is closely integrated with Oracle SuperCluster M7 and provides hardware monitoring and virtualization management.

Oracle SuperCluster M6-32 is a complete engineered system that is designed to run databases and applications on a single system. Ideal for consolidation and private cloud, Oracle SuperCluster M6-32 can run database, middleware, custom and third party applications. Oracle SuperCluster M6-32 is ideal for large scale database and application consolidation and also private cloud. You can run a variety of workloads including OLTP and data warehousing, complex applications, and mixed workloads for extreme performance. With big memory, Oracle SuperCluster M6-32 can run databases and applications in memory while providing the highest levels of availability and serviceability. Oracle SuperCluster M6-32 can scale vertically, allowing customers to flexibly add compute and storage resources to meet their demanding datacenter requirements.

Oracle SuperCluster T5-8 includes a complete stack of hardware and software, computing, storage, and network, all engineered to work optimally together to provide a consolidated platform for running database, middleware, or third party applications. Oracle Enterprise Manager Ops Center is closely integrated with Oracle SuperCluster T5-8 and provides hardware management, provisioning, and virtualization management.

Oracle SPARC SuperCluster T4-4 includes a complete stack of hardware and software, computing, storage, and network, all engineered to work optimally together to provide a consolidated platform for running database, middleware, or third party applications. Enterprise Manager Ops Center is closely integrated with SPARC SuperCluster and provides hardware management, provisioning, and virtualization management.

Manage User Roles for Oracle SuperCluster

In Oracle Enterprise Manager Ops Center, users are assigned several roles such as Asset Admin, Cloud Admin, SuperCluster Systems Admin, and many more. Each role grants the user a set of permissions; a particular permission can be granted by more than one role such as Asset Management, Network Management, and other management roles.

You can add users to Oracle Enterprise Manager Ops Center from the local authentication subsystem of the Enterprise Controller's operating system. Each user is given a different role which grants or denies access to the different functions of Oracle Enterprise Manager Ops Center.

The following user roles are described in this chapter:

- [Ops Center Administrator Role](#)
- [SuperCluster Systems Admin Role](#)
- [Cloud Admin](#)
- [Cloud User](#)

Ops Center Administrator Role

The Ops Center Administrator user role is only used for initial discovery of the Oracle SuperCluster system.

All discovery operations on Oracle SuperCluster systems must be started using OpsCenter Administrator account only.

SuperCluster Systems Admin Role

The SuperCluster Systems Administrator is responsible for overall monitoring and management of all associated Oracle SuperCluster systems.

The SuperCluster Systems Administrator also has privileges to manage Virtual Pools, Storage, and Oracle Solaris Cluster. As a SuperCluster Systems Administrator, you can perform most of the operations that are allowed in the context of the Oracle SuperCluster system.

The SuperCluster Systems Administrator role is a default role recommended for the management of the Oracle SuperCluster system.

Prerequisites: The user must be familiar with the use of Oracle Enterprise Manager Ops Center and be familiar with hardware management and OS management in general.

Creating a SuperCluster Systems Administrator Role

SuperCluster Systems Administrator role allows you to manage an Oracle SuperCluster system. You can create one or more users that have access to the same Oracle SuperCluster system.

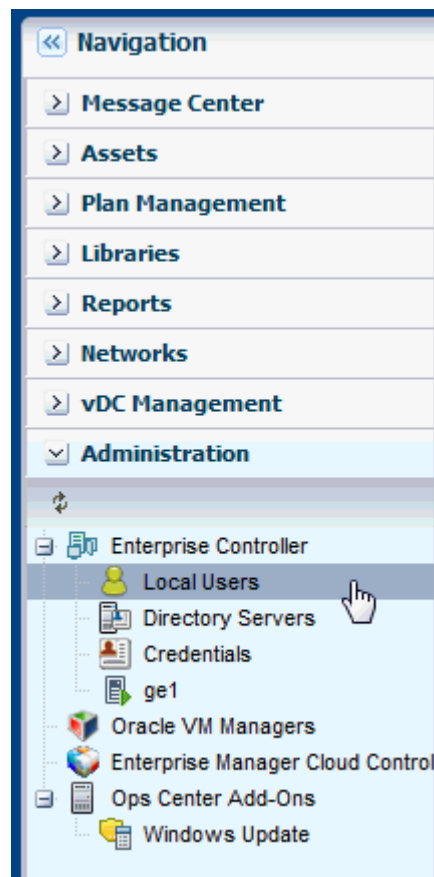
Note:

Before you create a SuperCluster Systems Administrator role, create a user on your OS or connect to the LDAP sever.

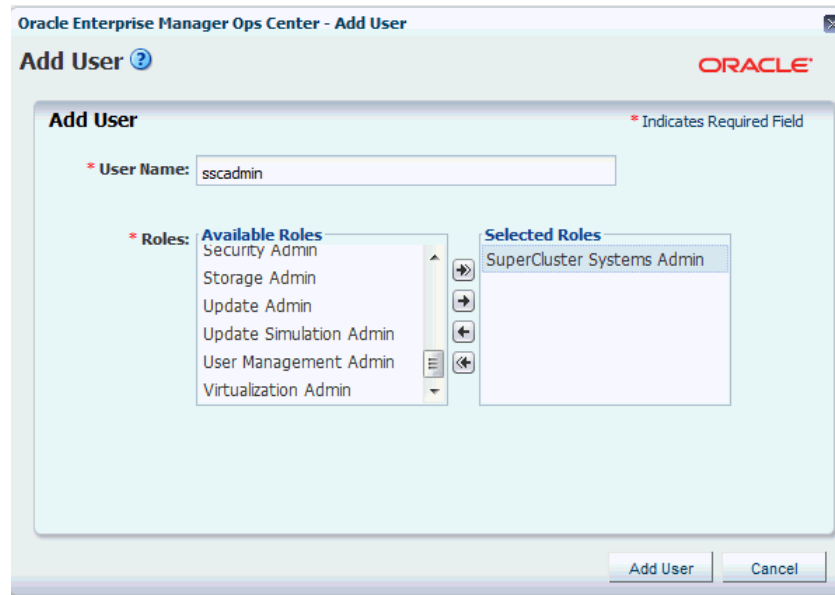
To create a SuperCluster Systems Administrator role, perform the following steps:

1. In the Navigation pane, click **Administration**.
2. Under Enterprise Controller, click **Local Users**.

Figure 2-1 Local Users



3. In the Actions pane, click **Add User**.

Figure 2-2 Add User

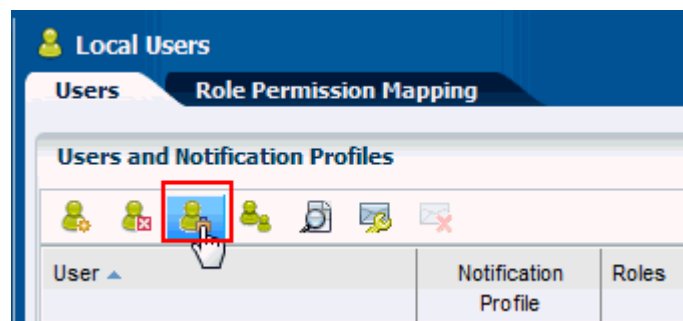
4. In the User Name field, enter a name for the user role (for example, sscadmin, provided such local user exists on the OS or directory server if configured). The sscadmin user requires a UNIX user on the Enterprise Controller system where Oracle Supercluster system will be managed and monitored.
5. Select **SuperCluster Systems Admin** in the Available Roles section and click the right arrow to move the role to the Selected Roles section.
6. Click **Add User**. The new user role is added.

Assign Permissions to the Role

Procedure to assign permissions to a role.

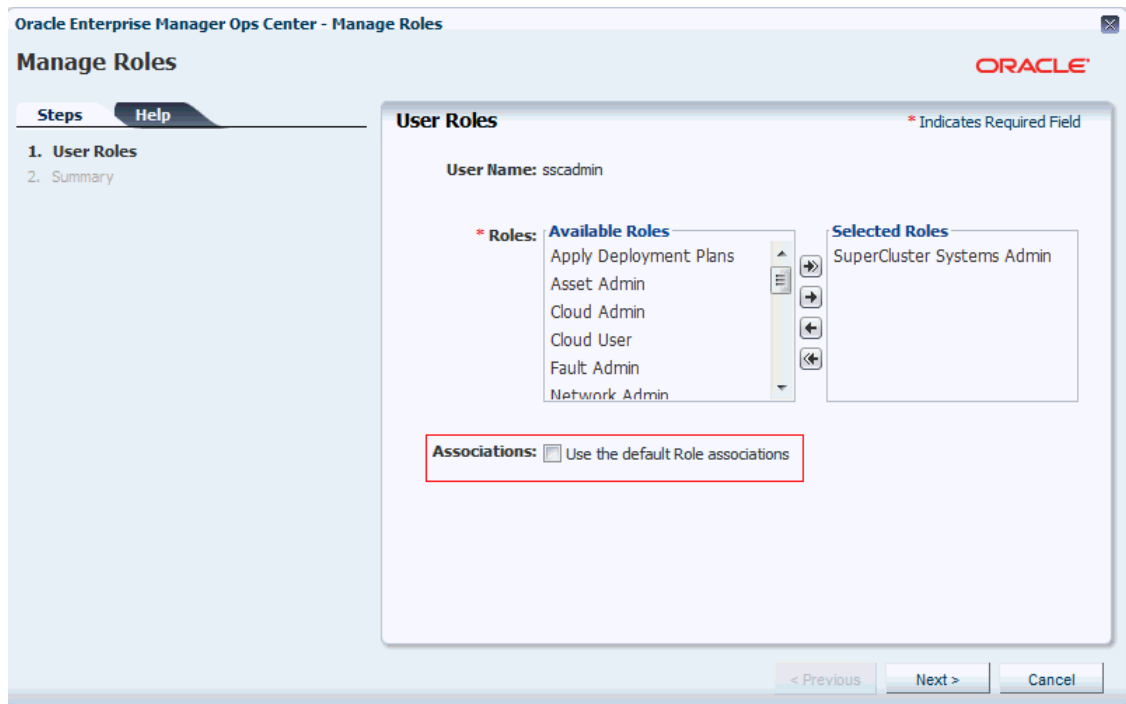
After you add the role, you must assign permissions to the new role that you created.

1. In the Navigation pane, click **Administration**.
2. Under Enterprise Controller, click **Local Users**.
3. In the center pane, click the **Users** tab.
4. Select the sscadmin user, then click the **Manage User Roles** icon.

Figure 2-3 Manage User Roles

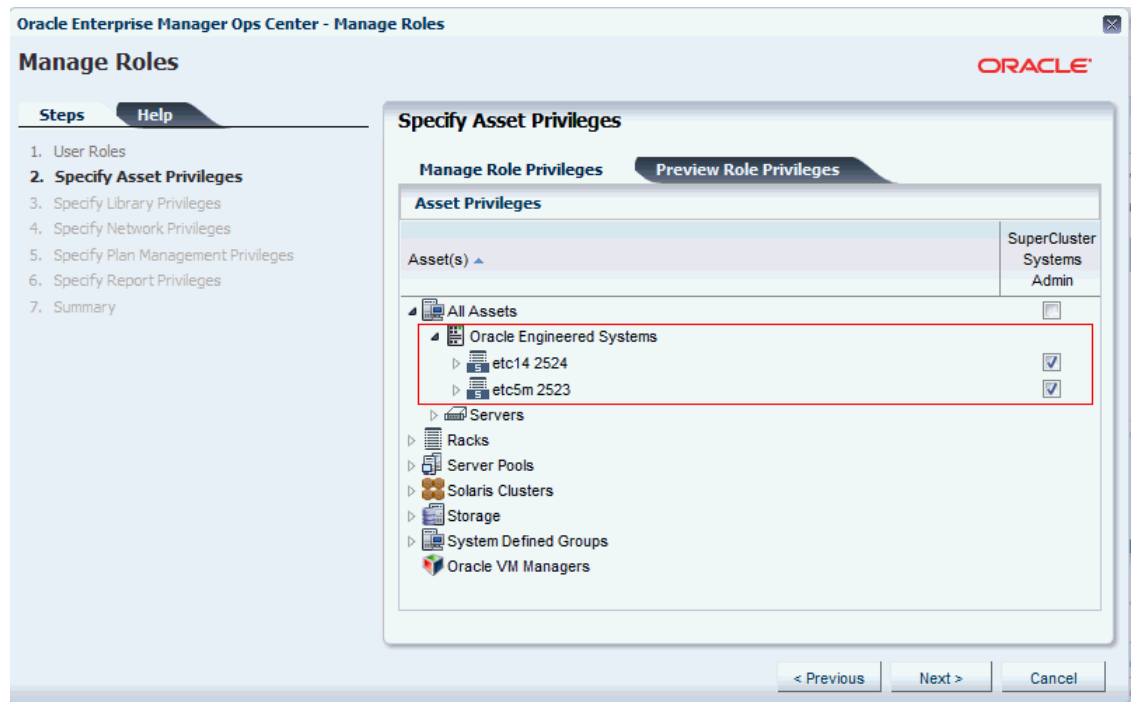
- In the User Roles screen, uncheck **Use the default Role associations**, then click **Next**.

Figure 2-4 Manage Roles



- In the Specify Asset Privileges screen, expand **All Assets**, then expand **Oracle Engineered Systems**.

Figure 2-5 Specify Asset Privileges



7. Select the Oracle SuperCluster assets that you want the SuperCluster Systems Admin to manage.
8. Click **Next** on the following screens.
9. Review the Summary, then click **Finish**. Only the Oracle SuperCluster assets that have been selected are displayed in the Navigation pane under All Assets.

Note:

The SuperCluster Systems Admin role prevents you from performing unsupported actions by mistake.

SuperCluster Systems Admin Role Permissions

As a SuperCluster Systems Admin, you can perform most operations available in Oracle Enterprise Manager Ops Center.

However, some operations are disabled because they could compromise pre-installed Oracle Engineered Systems' hardware or software infrastructure.

The following actions are disabled for SuperCluster Systems Admin user:

- PDOM management (creating LDOMs on M-series servers)
- LDOM management (Connect Network and Storage Management with the exception of Starting / Shutting down / Rebooting LDOM)
- Install / Update OS on LDOMs and Global zones
- Install Server
- Rack management
- Chassis management
- Network Switch management
- Network infrastructure operations (Attach network to global zone, IPMP operations)
- Firmware updates
- EC Management (downloads, upgrade, EC Proxy / Agent management, storage library management)
- OVM management
- Asset discovery
- Create logical domain
- Switch management (edit action is permitted)
- Remove SuperCluster

Note:

Oracle Solaris cloud management operations and virtual datacenter (vDC) functionality cannot be performed by Supercluster Systems Admin user. To perform these actions, create Cloud Admin and Cloud User roles.

Cloud Admin

The Cloud Administrator's responsibilities include setting up of infrastructure and resource allocation so that cloud users can deploy their application onto authorized accounts.

They also manage the cloud users accessing the accounts and their authorization.

Prerequisites: The user must be trained on Oracle Enterprise Manager Ops Center, installation and configuration, and the continual maintenance of the product.

Cloud User

Cloud users create virtual servers and deploy applications. Cloud users are restricted to virtual datacenter infrastructure activities and are presented only with the required options on the Oracle Enterprise Manager Ops Center UI.

Prerequisites: The user must be familiar with the use of Oracle Enterprise Manager Ops Center, and also its hardware management and OS management in general.

Manage Oracle Engineered Systems

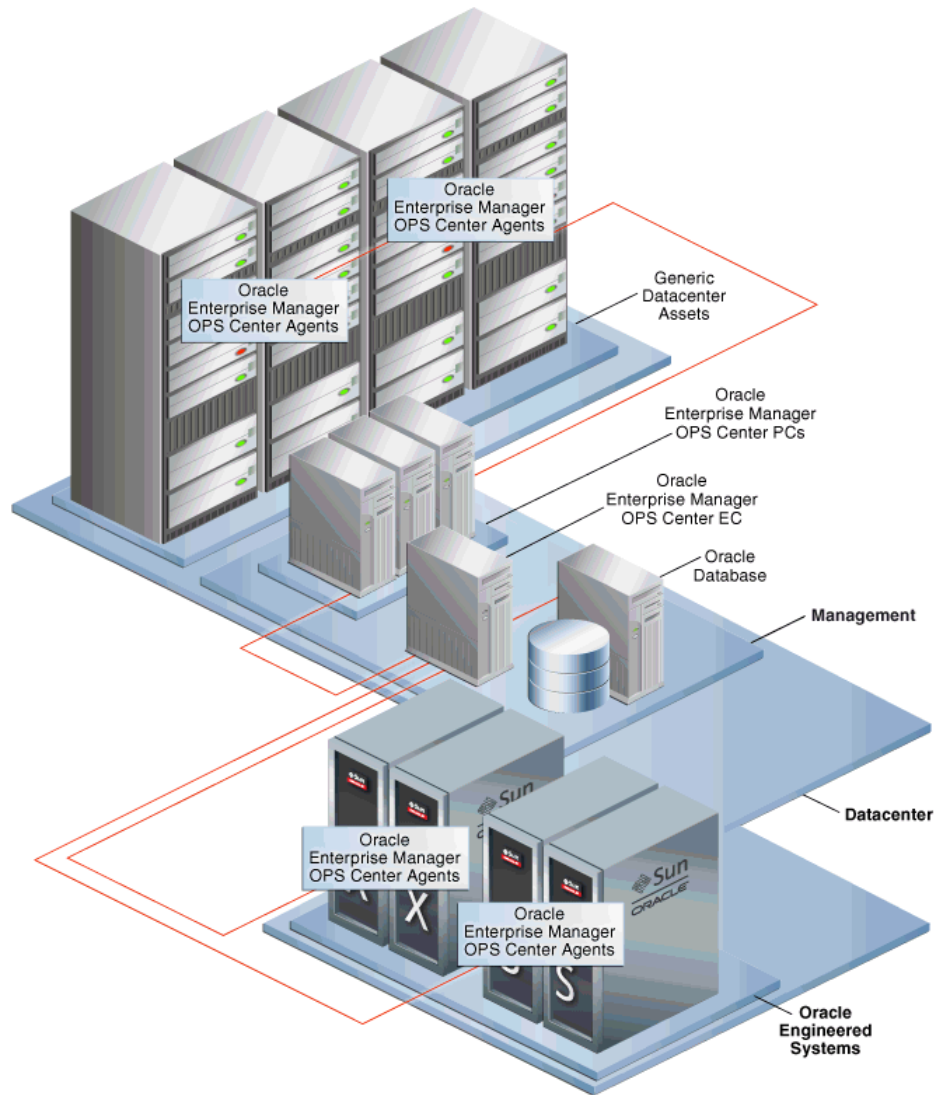
This section describes in detail about Oracle Engineered Systems Management using which you can enable a single or centralized Oracle Enterprise Manager Ops Center installation managing multiple Oracle SuperCluster systems and other assets in the datacenter directly.

Using Oracle Enterprise Manager Ops Center, you can discover Engineered Systems from a single datacenter instance and perform complete management and monitoring of multiple engineered systems.

Note: Oracle SuperCluster is supported only by a subset of Oracle Enterprise Manager Ops Center versions. Refer the Certified Systems Matrix to verify if Oracle SuperCluster platform is supported by Oracle Enterprise Manager Ops Center version that you use.

[Figure 3-1](#) is a pictorial representation of datacenter management of engineered systems using Enterprise Manager Ops Center.

Figure 3-1 Oracle Engineered Systems Management



Configure Oracle SuperCluster

This section describes the following scenarios:

- [Overlapping IB Networks Enabled](#)
- [Overlapping IB Networks not Enabled](#)

Overlapping IB Networks Enabled

One or more Oracle Engineered Systems (Oracle SuperCluster) can be discovered and managed by a single Oracle Enterprise Manager Ops Center instance based on the certain conditions.

Starting with Oracle Enterprise Manager Ops Center 12c Release 3 (12.3.1.0.0), overlapping IB networks is enabled by default.

The Oracle SuperCluster system must not be discovered. If the Oracle SuperCluster system is already discovered, remove the system completely, then rediscover the Oracle SuperCluster system again.

Enabling Overlapping Networks

Procedure to enable overlapping networks.

1. In the Navigation pane, under Administration, click **Enterprise Controller**.
2. In the center pane, click **Configuration**.
3. In the Configuration Management section, select Network/Fabric Manager from the Subsystem drop-down list.
4. Set the value of *oem.oc.networkmgmt.ib.overlapping.enabled* property file to true.

Note:

Restart the Enterprise Controller for the changes to take effect.

Overlapping IB Networks not Enabled

One or more Oracle Engineered Systems can be discovered and managed by a single Oracle Enterprise Manager Ops Center instance based on the certain conditions only.

- None of Oracle Engineered System instances have overlapping private networks connected through IPoIB, that is, networks that have the same CIDR (Classless Inter-Domain Routing) or networks that are sub-blocks of the same CIDR. For example, 192.0.2.1/21 and 192.0.2.1/24 are overlapping.
- None of the Oracle Engineered System instances or generic datacenter assets have overlapping management or client access networks connected through Ethernet, that is, networks that have the same CIDR or networks that are sub-blocks of the same CIDR. For example, 192.0.2.1/21 and 192.0.2.1/24 are overlapping. As an exception, you can use the same CIDR (not sub-block) for multiple systems. For example, you can use 192.0.2.1/22 as a CIDR for Ethernet network on one or more engineered systems and/or generic datacenter assets.
- None of the Oracle Engineered System instances have overlapping public networks connected through EoIB, that is, networks that have the same CIDR or networks that are sub-blocks of the same CIDR. For example, 192.0.2.1/21 and 192.0.2.1/24 are overlapping. As an exception, you can use the same CIDR (not sub-block) for multiple systems. For example, you can use 192.2.0.0/22 as a CIDR for public EoIB network on multiple engineered systems.
- None of the networks configured in Oracle Enterprise Manager Ops Center overlaps with any network, that is, overlapping networks are not supported by Oracle Enterprise Manager Ops Center.

Note:

To manage two or more engineered systems that have overlapping networks or any networks already present in Oracle Enterprise Manager Ops Center, reconfigure one of the conflicting systems before it is discovered and managed by the same Oracle Enterprise Manager Ops Center. You can also enable the overlapping network feature to manage multiple systems with overlapping networks.

Example Oracle SuperCluster Network Configurations

Example Oracle SuperCluster network configurations.

The following are example Oracle SuperCluster network configurations that you can use when configuring the network to discover and manage Oracle SuperCluster systems. Status OK indicates a valid configuration and status Fail indicates an invalid configuration.

Table 3-1 Example Oracle SuperCluster Network Configuration-1

	1 GbE	10 GbE	IB
SuperCluster1	192.0.251.0/21	192.4.251.0/24	192.168.30.0/24
SuperCluster2	192.0.251.0/21	192.4.251.0/24	192.168.31.0/24
Status	OK	OK	OK

Status:

OK - SuperCluster1-1GbE and SuperCluster2-1GbE share the same network.

OK - SuperCluster1-10GbE and SuperCluster2-10GbE share the same network.

OK - SuperCluster1-IB does not overlap with SuperCluster2-IB.

Table 3-2 Example Oracle SuperCluster Network Configuration-2

	1 GbE	10 GbE	IB
SuperCluster1	192.0.251.0/21	192.0.250.0/24	192.168.30.0/24 - IB fabric connected with SuperCluster2
SuperCluster2	192.6.0.0/21	192.0.250.0/24	192.168.30.0/24 - IB fabric connected with SuperCluster1
Status	OK	OK	OK

Status:

OK - SuperCluster1-1GbE and SuperCluster2-1GbE represent different non-overlapping networks.

OK - SuperCluster1-10GbE and SuperCluster2-10GbE share the same network.

OK - SuperCluster1-IB and SuperCluster2-IB represent the same network as they are interconnected.

Table 3-3 Example SuperCluster Network Configuration-3

Table 3-3 (Cont.) Example SuperCluster Network Configuration-3

	1 GbE	10 GbE	IB
SuperCluster1	192.0.2.1/21	192.0.251.0/21	192.168.30.0/24
SuperCluster2	192.0.0.128/25	192.0.7.0/24	192.168.30.0/24
Status	FAIL	OK	FAIL

Status:

FAIL - SuperCluster1-1GbE and SuperCluster2-1GbE define overlapping networks.

OK - SuperCluster1-10GbE and SuperCluster2-10GbE represent different non-overlapping networks.

FAIL - SuperCluster1-1GbE and SuperCluster2-10GbE define overlapping networks.

FAIL - SuperCluster1-IB and SuperCluster2-IB do not define unique private networks (racks are not interconnected).

Limitations

This section describes the limitations in configuring Oracle SuperCluster engineered system.

Do not create server pools using private networks attached to members from two or more SuperCluster systems (racks). To create server pools with members from two or more SuperCluster systems, use public networks. Use private networks only in server pools with members belonging to the same SuperCluster system.

Oracle Solaris 11 Software Library Setup

When you discover an Oracle SuperCluster system, default install agents work only if the Oracle Solaris 11 Software Update Library is correctly setup, because Oracle Solaris uses Oracle Solaris 11 Software Update Library.

If Oracle Enterprise Manager Ops Center was just installed, initialize the Oracle Solaris 11 Software Update Library before the discovery is started as it will fail to install agents. Ensure that the Oracle Solaris 11 Software Update Library contains the correct Oracle Solaris packages that your Enterprise Controller and Proxy Controllers use and also the SRUs that are used on the Oracle Engineered System.

To manage generic assets, you also need the correct Oracle Solaris packages for each generic Solaris 11 managed OS. Typically, you must create a full copy of the Oracle Solaris 11 support repository.

Starting with Oracle Enterprise Manager Ops Center 12c Release 2 (12.2.2.0.0), Oracle SuperCluster Solaris 11 OS uses the default HMP packages delivered with Oracle SuperCluster / QFSDP, instead of packages normally delivered by Ops Center installation.

It is recommended to install agents in all domains.

Deploy Proxy Controller

Procedure to deploy the proxy controller on Oracle Enterprise Manager Ops Center.

Deploy the Proxy Controller only if you do not have a suitable Proxy Controller in Oracle Enterprise Manager Ops Center that can discover Oracle Engineered Systems.

Perform the following steps to deploy the Proxy Controller on Oracle Enterprise Manager Ops Center.

1. In the Navigation pane, click **Administration**.
2. In the Actions pane, click **Deploy Proxy**.
3. Select **Remote Proxies**, then click **Next**.
4. Enter the Proxy Hostname/IP, SSH User, SSH Password, Privileged Role, and Privileged Password in the respective fields.
5. Click **Next**. The Remote Proxy Controller is deployed. This might take a few minutes.
6. Review the Summary, then click **Finish**.

The Remote Proxy Controller is deployed on Oracle Enterprise Manager Ops Center. You can now perform discovery of the Oracle Engineered Systems.

Prepare Setup for Oracle SuperCluster Discovery

Prepare the setup for Oracle SuperCluster system based on options such as Network is identified by the Enterprise Controller and Network not identified by the Enterprise Controller.

The setup is based on the following options:

- Network is identified by the Enterprise Controller
- Network is not identified by the Enterprise Controller

Note:

Oracle SuperCluster can be discovered only by trained Oracle staff. See [Discover Oracle SuperCluster](#).

Note:

Ensure you have a Proxy Controller deployed that can access the network. To deploy a Proxy Controller, see [Deploy Proxy Controller](#).

Network is Identified by the Enterprise Controller

If the Enterprise Controller host identifies the management network of the Oracle SuperCluster (CIDR must be the same), ensure that the network is assigned to the Proxy Controller. If it is not assigned, assign the network to the Proxy Controller.

To assign the network to the Proxy Controller, perform the following steps:

1. In the Navigation pane, select **Administration**.
2. Select a Proxy Controller.
3. In the Actions pane, click **Associate Networks**.

Network is not Identified by the Enterprise Controller

Option: Network not identified by the Enterprise Controller.

If the Enterprise Controller host does not identify the network (Oracle Engineered System management network must be routable from it), create a fabric definition and a network for the fabric.

Create Fabric Definition

Procedure to create a fabric description.

1. In the Navigation pane, under Networks, select **Fabrics** from the drop-down list.
2. In the Actions pane, click **Define Ethernet Fabric**.
3. In the Fabric Name field enter a name for the fabric.
4. (Optional) Enter the description.
5. Click **Next**.
6. Enter the VLAN ID Ranges, then click **Next**.
7. Select the networks to be associated with the fabric, then click **Next**.
8. Review the Summary, the click **Finish**.

A new fabric is created.

Create Network for the Fabric

Procedure to create network for the fabric.

After the fabric is created, you must create a network for the new fabric.

1. In the Navigation pane, under Networks, select **Networks** from the drop-down list.
2. In the Actions pane, click **Define Network**.
3. In the Network IP field, enter the IP address (in CIDR format) of the network that represents the management network of the Oracle Engineered System you want to manage.
4. Enter the **Gateway IP address**.
5. In the Network Name field, enter a name for the network.
6. Click **Next**.
7. Assign the newly created fabric to the Proxy Controller, then click **Next**.

The setup is now ready for Oracle Engineered System discovery.

Ports for Oracle SuperCluster

This section summarizes the set of ports and their protocols used by Oracle SuperCluster.

The proxy Controller for an Oracle SuperCluster engineered system does not have unique ports or protocols. The following table summarizes the set of ports and their protocols used by Oracle SuperCluster.

Table 3-4 Required Ports and Protocols for Oracle SuperCluster

Communication Direction	Protocol and Port	Purpose
Proxy Controller to Exadata's ILOM Service Processors	SSH, TCP: Port 22 IPMI, TCP, UDP: Port 623	Proxy Controller discovers, manages, and monitors the service processor of Exadata.
Proxy Controller to Exadata cells	SSH, TCP: Port 22	Proxy Controller discovers, manages, and monitors the compute nodes.
Proxy Controller to Oracle ZFS Storage Appliance	SSH, TCP: Port 22 IPMI, TCP, UDP: Port 623	Proxy Controller discovers, manages, and monitors the service processor of the storage appliance.
Proxy Controller to Oracle ZFS Storage Appliance	SSH: Port 215	Proxy Controller discovers the projects of the storage appliance: <ul style="list-style-type: none"> • iSCSI volumes. • NFS shares
Proxy Controller to Cisco switch	SSH version 2: Port 22 SNMP: Port 161	Proxy Controller discovers and manages the switch
Proxy Controller to InfiniBand switch	SSH: Port 22 IPMI: Port 623	Proxy Controller discovers and manages the switch.

Discover Oracle SuperCluster

Oracle SuperCluster can be discovered only by trained Oracle Staff using the Ops Center Auto Installer (OCAI) tool.

Oracle SuperCluster discovery is provided as a free service under special conditions during SuperCluster installation only if you have a pre-installed latest version of Oracle Enterprise Manager Ops Center which is supported for the given Oracle SuperCluster platform. To avail the free service, you must request Oracle SuperCluster discovery before the Oracle SuperCluster installation. Installation of the Oracle Enterprise Manager Ops Center is not part of the discovery service.

Note:

After SuperCluster installation, Oracle SuperCluster discovery is offered only as a paid service.

Asset Protection

To protect the engineered system from inadvertent changes in the configuration and the resulting loss of service, high-risk actions are disabled for all users.

Some actions in Oracle Enterprise Manager Ops Center might break an Oracle SuperCluster engineered system configuration. To protect the engineered system from inadvertent changes in the configuration and the resulting loss of service, high-risk actions are disabled for all users. For example, modifying logical domains or network configuration might break the engineered system configuration leading to loss of service.

The following actions are disabled for all users, including Ops Center Admin:

Control Domains

- Attach Network
- Create Logical Domains
- Cancel Delayed Reconfiguration

Logical Domains

- Delete logical domain
- Migrate logical domain
- Connect network
- Add storage
- Move metadata
- Edit attributes of logical domain (with exception of name and description)
- Enable/Disable automatic recovery
- Network/Network Connectivity operations
- Network/Link Aggregation operations
- Network/IPMP group operations
- Network/Bandwidth Flow operations

Global Zones

- Network/Network Connectivity operations
- Network/IPMP group operations
- Network/Bandwidth Flow operations

Common Operations

- Install Software
- Deploy/Update Software
- Update Firmware

- Update BIOS

Disable Asset Protection

The Ops Center Administrator role has special privilege to turn off the Asset protection feature in engineered systems.

Note:

Use this privilege for emergency purpose only.

Enable the `oes.asset.protection.override.user` parameter in the `/opt/sun/n1gc/lib/XVM_SATELLITE.properties` file to allow all actions, including actions disabled by asset protection.

The Oracle Enterprise Manager OpsCenter Enterprise Controller must be restarted for changes in the `XVM_SATELLITE.properties` file to take effect.

Root and Database Domain Protection for Oracle SuperCluster 2.0

Oracle SuperCluster recognizes additional types of logical domains namely root and DB.

Starting with Oracle Enterprise Manager Ops Center 12c Release 3 (12.3.1.0.0), Oracle Enterprise Manager Ops Center recognizes Oracle SuperCluster Root and Database domains. These domains host critical infrastructure that are not created using Oracle Enterprise Manager Ops Center. Hence, unsupported operations that could harm the Oracle SuperCluster Root and Database domains are disabled.

To recognise the new domain types in Oracle SuperCluster 2.0, the following icons have been introduced in Oracle Enterprise Manager Ops Center:

- SuperCluster Dedicated Domains



- SuperCluster I/O Domains



- SuperCluster Root Domains



The following actions are disabled in Oracle Enterprise Manager Ops Center:

CDOM / Summary Tab / Logical Domains

- Shutdown or Detach
- Reboot
- Connect Network
- Add Storage
- Move Metadata
- Delete

Domain

- Shutdown or Detach
- Reboot
- Connect Network
- Add Storage
- Move Metadata
- Delete

Domain / Network / Network Connectivity

- Connect Network
- Disconnect Network

Domain OS (Global Zone)

- Reboot
- Attach Network
- Activate Boot Environment and Reboot
- Discover iSCSI Target
- Create Oracle Solaris Zones
- Create Oracle Solaris Kernel Zones

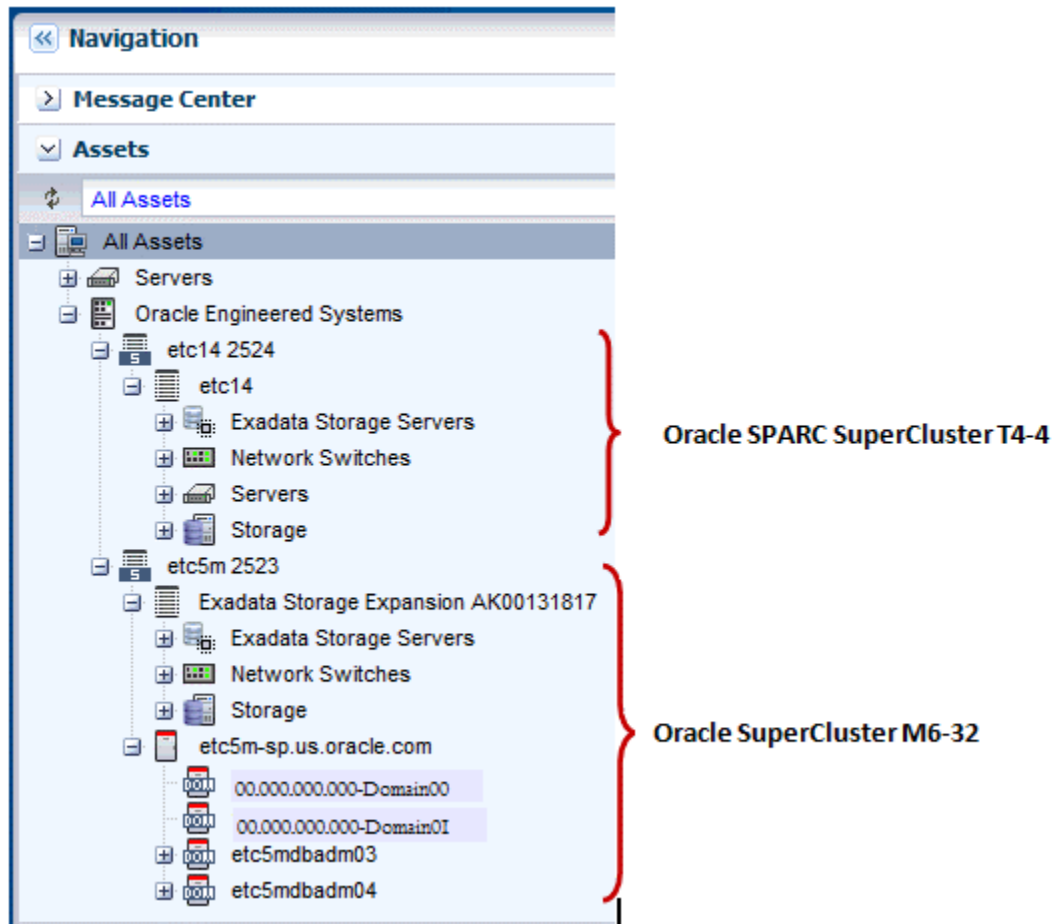
View Oracle Engineered Systems (Oracle SuperCluster)

You can view all types of engineered systems in the Navigation pane under All Assets.

The engineered system assets are grouped by racks on which they are mounted. Assets mounted on a rack are grouped by gear type.

1. In the Navigation pane, under Assets, select **All Assets**.
2. Expand **Oracle Engineered Systems**.

The Engineered System assets are displayed. In [Figure 3-2](#), Engineered System assets (Oracle SPARC SuperCluster T4-4 and Oracle SuperCluster M6-32) are grouped by racks on which they are mounted.

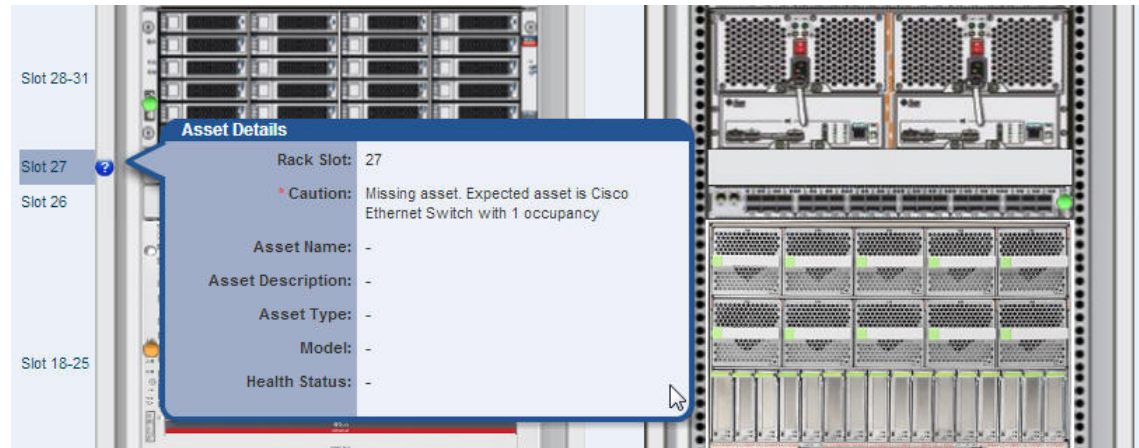
Figure 3-2 Engineered Systems View

Photorealistic View

The photorealistic view represents the physical rack where you can view the placement of the rack and its components. The front and rear views of the rack are displayed in this view. All slots and the respective assets are displayed.

Each asset in the rack is represented by an image. The health status of assets such as OK, Warning, or Critical is displayed in the form of colored lights as seen on the physical rack itself. OK status is identified by the green color. Warning and critical status are identified by the yellow color. Hover the mouse over the slots in the rack and view details about the assets such as slot number, asset name and description, type of asset, model number of the asset, and its health status.

A question mark in any of the slots indicates a discrepancy from the baseline check. See [Baseline Check](#) for more information. For example, see [Figure 3-3](#).

Figure 3-3 Baseline Check

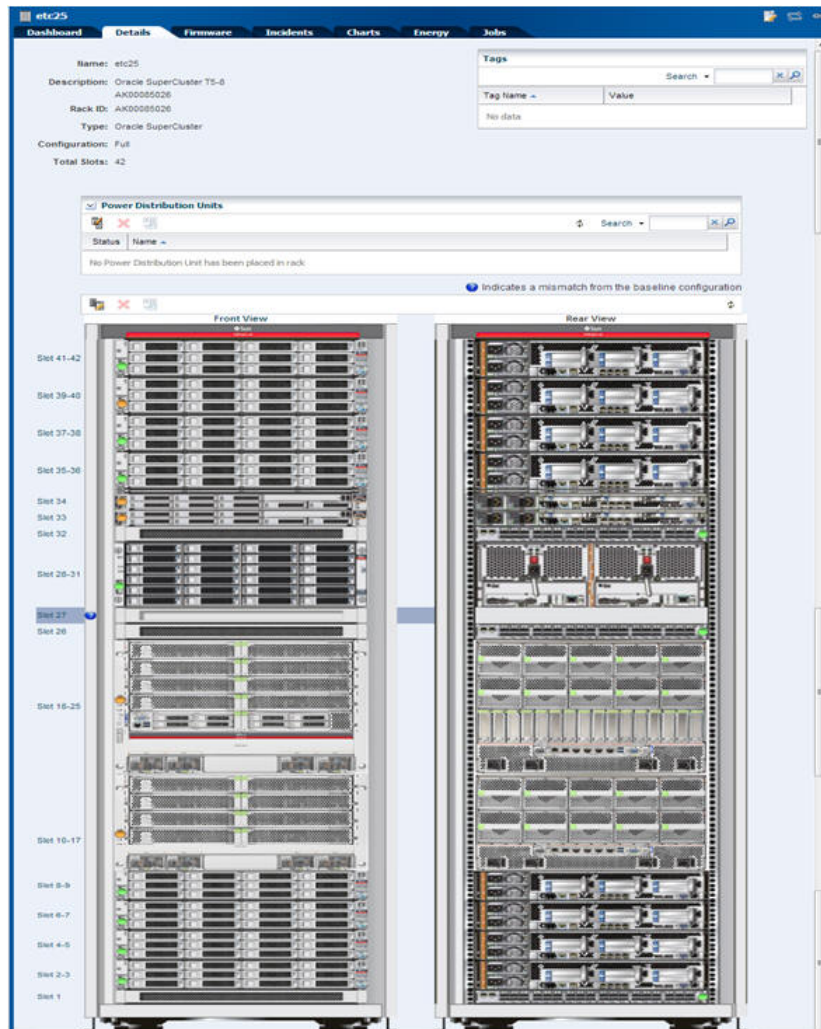
In this document, photorealistic view of the Oracle SuperCluster T5-8 rack is described.

To see the photorealistic view of the rack, perform the following steps:

1. In the Navigation pane, under Assets, select an asset from Oracle Engineered Systems.
2. Select a rack that you want to view.
3. In the center pane, click the **Details** tab.

A photorealistic view of the Oracle Engineered System rack is displayed.

Figure 3-4 Photorealistic view of Oracle SuperCluster System



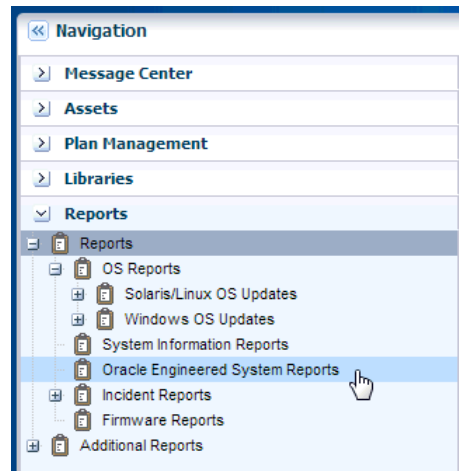
Create Oracle Engineered Systems (Oracle SuperCluster) Report

Procedure to create Oracle Engineered (Oracle SuperCluster) Systems report in Oracle Enterprise Manager Ops Center.

Reports provide information about assets, such as job history, firmware, operating system updates, and incidents. Reports are created in Interactive, PDF, and CSV formats. You can generate and view the report for multiple Oracle Engineered Systems.

Perform the following steps to create a report for Oracle Engineered System in Oracle Enterprise Manager Ops Center.

1. In the Navigation pane, click **Reports**.

Figure 3-5 Create Reports

2. Click **Oracle Engineered System Reports**.
3. In the Actions pane, click **Create Oracle Engineered System Report**.
4. In the Define Report Parameters wizard, enter a name and description for the report. The Schedule and Output Format are checked by default.

Figure 3-6 Define Report Parameters

 A screenshot of the 'Define Report Parameters' wizard. The 'Report Name' field contains 'OES Report' and the 'Description' field contains 'Oracle Engineered System report'. The 'Schedule' section has 'Create Schedule' checked. The 'Output Format' section has 'CSV' and 'PDF' checked. The 'Targets' section shows a table of available items with 'MyHost2' selected.

Available Items		Product Name	Description
Oracle Engineered Systems			
<input type="checkbox"/>	MyHost1		Supercluste
<input checked="" type="checkbox"/>	MyHost2		Supercluste
<input type="checkbox"/>	MyHost3		Supercluste

- Select **Create Schedule** to run the report later or on a recurring schedule.
 - Select the output formats of the result that will be generated for the report.
5. In the Targets section, select the asset for which you want to run the report and click **Add to Target List**.
 6. Click **Next**. The Schedule wizard is displayed.
 7. Select a schedule for the report. You can schedule the report to run on the following instances:
 - **Now**: Runs the report immediately.

- At a later date/time: Select a date and time to generate the report.
 - On a Recurring Schedule: Select the month and day when you want to generate the report. Select the Start Time, End Time, and Number of Hours between runs. This is to set the number of times the report is generated between the specified start and end time. For example, if you set the start time at 6.00 a.m, end time at 12.00 a.m, and the number of hours between runs as 2, then the report is run at 6.00 a.m, 8.00 a.m, 10.00 a.m, and 12.00 a.m.
8. Click **Next**. The Summary wizard is displayed.
 9. Verify the report parameters and click one of the options as required:
 - **Save Template and Close**: Saves the report as a template and closes the wizard. You can use the report template to generate the report later.
 - **Run and Close**: Runs the report and closes the wizard window.

Figure 3-7 Report Created

Owner	Status	Report Name	Description	Report Type	Run Date
root	✓	OES RReport	Oracle Engineered System Report	Oracle Engineered...	08/13/2013 12:05:...
root	✓	jkl		Oracle Engineered...	08/12/2013 09:49:...

Viewing Engineered Systems Reports

Using reports, you can view the rack setup for each of the rack within the system, including the asset details related to the rack.

To view an Engineered System Report, perform the following steps.

1. In the Navigation pane, under Reports, select **Oracle Engineered System Reports**.
2. Select a report and click the format in which you want to view the report.

Figure 3-8 View Report

Owner	Status	Report Name	Description	Report Type	Run Date
root	✓	OES RReport	Oracle Engineered System Report	Oracle Engineered...	08/13/2013 12:05:...
root	✓	jkl		Oracle Engineered...	08/12/2013 09:49:...

The report is displayed in the selected format.

Baseline Check

Baseline Check is a feature in Oracle Enterprise Manager Ops Center Engineered Systems where the factory default configuration of eighth, quarter, half, and full rack configurations are considered as a normal or baseline setup.

When the assets are discovered and associated with the rack, this setup is compared with the default factory configuration. If any discrepancy is found, the baseline check displays a question mark on the slot in the rack where the local configuration differs from the factory default configuration.

Hover the cursor over the question mark to view details of the warning, for example, missing asset, asset mismatch, or unknown asset. Based on the warning, you can decide to adjust and move the assets in the rack.

Manage Oracle SuperCluster

Oracle SuperCluster is an Oracle Engineered System that integrates SPARC compute nodes, a Sun ZFS Storage Appliance, InfiniBand switches, PDUs, and Exadata Storage Servers into a multi-rack system.

Oracle SuperCluster is supported in the following configurations:

- Oracle SuperCluster M7
- Oracle SuperCluster M6-32
- Oracle SuperCluster T5-8
- Oracle SPARC SuperCluster T4-4

Oracle SuperCluster M7

Oracle SuperCluster M7 delivers an integrated hardware and software stack, with compute, storage, and network all engineered to work optimally together to provide a consolidated platform for running database, middleware, and applications from both Oracle and third parties.

Oracle Enterprise Manager Ops Center is closely integrated with Oracle SuperCluster M7 and provides hardware monitoring and virtualization management.

The Oracle SuperCluster M7 hardware includes one or two SPARC M7 servers, two or three Sun Datacenter InfiniBand Switch 36 switches as InfiniBand backplane, a Cisco 4948 48-port 1Gb Ethernet Switch for management connectivity, and a Sun Rack II. Oracle SuperCluster M7 is available in a flexible range of configurations, allowing compute and storage to be configured independently. The small configuration consists of a single SPARC M7 server and three Exadata Storage Servers. Up to eight additional Exadata Storage Servers can be added to configurations that feature a single compute server. A second SPARC M7 server can also be added to the small configuration, along with up to three additional Exadata Storage Servers for a total of six Exadata Storage Servers. Additional storage capacity can be added by connecting one or more Oracle Exadata Storage Expansion Racks.

Oracle SuperCluster M6-32

Oracle SuperCluster M6-32 is a complete engineered system that is designed to run databases and applications on a single system. Ideal for consolidation and private cloud, Oracle SuperCluster M6-32 can run database, middleware, custom and third party applications.

Oracle SuperCluster M6-32 is ideal for large scale database and application consolidation and also private cloud. You can run a variety of workloads including OLTP and data warehousing, complex applications, and mixed workloads for extreme performance. With big memory, Oracle SuperCluster M6-32 can run databases and applications in memory while providing the highest levels of availability and

serviceability. Oracle SuperCluster M6-32 can scale vertically, allowing customers to flexibly add compute and storage resources to meet their demanding datacenter requirements.

Oracle SuperCluster M6-32 delivers 16, 24, or 32 M6 processors with up to 32 TB of memory in a dedicated SPARC M6-32 rack. Compute capacity can be assigned flexibly, depending on customer requirements. Layered Optimized Virtualization allows resources to be configured hierarchically in physical domains (PDOMs), logical domains (LDOMs), and Oracle Solaris Zones. The SPARC M6-32 server delivers mainframe-class availability; two chassis may also be configured for extreme redundancy. An external storage rack provides nine Exadata Storage Servers, a ZFS Storage Appliance, three Sun Data center InfiniBand Switch 36 switches, and a Cisco 4948 48-port 1Gb Ethernet Switch. Additional Oracle Exadata Storage Expansion Racks can be added as required.

Note:

Oracle Sun ZFS Storage 7320, Oracle Sun ZFS Storage 7420, and Oracle ZFS Storage ZS3-ES appliances provide a two-node cluster configuration. To discover the storage appliance, the administrative interfaces of both nodes must be private so that each node has a different static IP address. To verify that the appliance's nodes are using private administrative interfaces, you must use the appliance's user interface. For steps on how to determine if the interface is private, see *Verify the Administrative Interfaces*.

Oracle SuperCluster T5-8

Oracle SuperCluster T5-8 includes a complete stack of hardware and software, computing, storage, and network, all engineered to work optimally together to provide a consolidated platform for running database, middleware, or third party applications.

Oracle Enterprise Manager Ops Center is closely integrated with Oracle SuperCluster T5-8 and provides hardware management, provisioning, and virtualization management.

The Oracle SuperCluster T5-8 hardware includes two SPARC T5-8 servers, three Sun Datacenter InfiniBand Switch 36 switches as InfiniBand backplane, a Cisco 4948 48-port 1Gb Ethernet Switch for external connectivity, and a Sun Rack II. Oracle SuperCluster T5-8 is available in two configurations, half rack and full rack. The half rack includes two SPARC T5-8 servers (with four processor modules per server) and four Exadata Storage Servers. The full rack includes two SPARC T5-8 servers (with eight processor modules per server) and eight Exadata Storage Servers. In addition, for additional storage capacity, connecting to an Oracle Exadata Storage Expansion Rack is supported.

Oracle SPARC SuperCluster T4-4

Oracle SPARC SuperCluster T4-4 includes a complete stack of hardware and software, computing, storage, and network, all engineered to work optimally together to provide a consolidated platform for running database, middleware, or third party applications.

Oracle Enterprise Manager Ops Center is closely integrated with SPARC SuperCluster and provides hardware management, provisioning, and virtualization management.

The Oracle SPARC SuperCluster T4-4 hardware includes two SPARC T4-4 servers, three Sun Datacenter InfiniBand Switch 36 switches as InfiniBand backplane, a Cisco 4948 48-port 1Gb Ethernet Switch for external connectivity, and a Sun Rack II. Oracle SPARC SuperCluster T4-4 is available in two configurations, half rack and full rack. The half rack includes two SPARC T4-4 servers (with four processor modules per server) and three Exadata Storage Servers. The full rack includes four SPARC T4-4 servers (with four processor modules per server) and six Exadata Storage Servers. In addition, for additional storage capacity, connecting to an Oracle Exadata Storage Expansion Rack is supported.

Viewing the Oracle SuperCluster System

You can view the Oracle SuperCluster system virtually using the tabs on the center pane, namely Dashboard, Details, Networks, and Incidents.

You can also perform actions by clicking the respective actions on the Actions pane. The actions available on the Actions pane depend on the selected asset in the Navigation pane. The actions are also role based, not all users are allowed to perform all actions. For more information on Roles, see [Manage User Roles for Oracle SuperCluster](#).

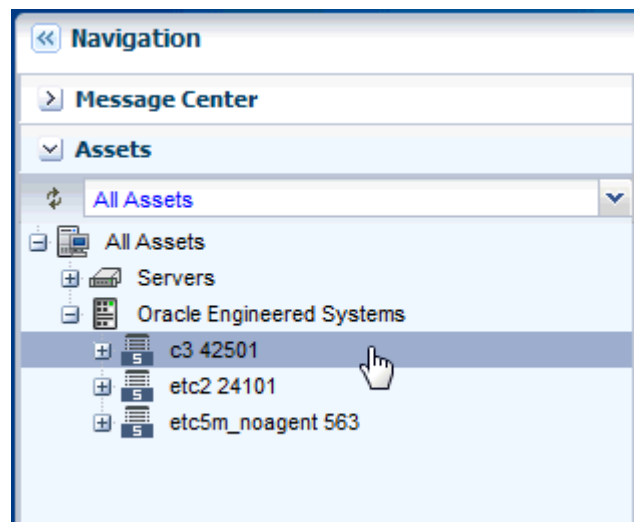
Note:

In this document, it is assumed that Oracle SuperCluster is configured and discovered in Oracle Enterprise Manager Ops Center.

To view the Oracle SuperCluster system, perform the following steps:

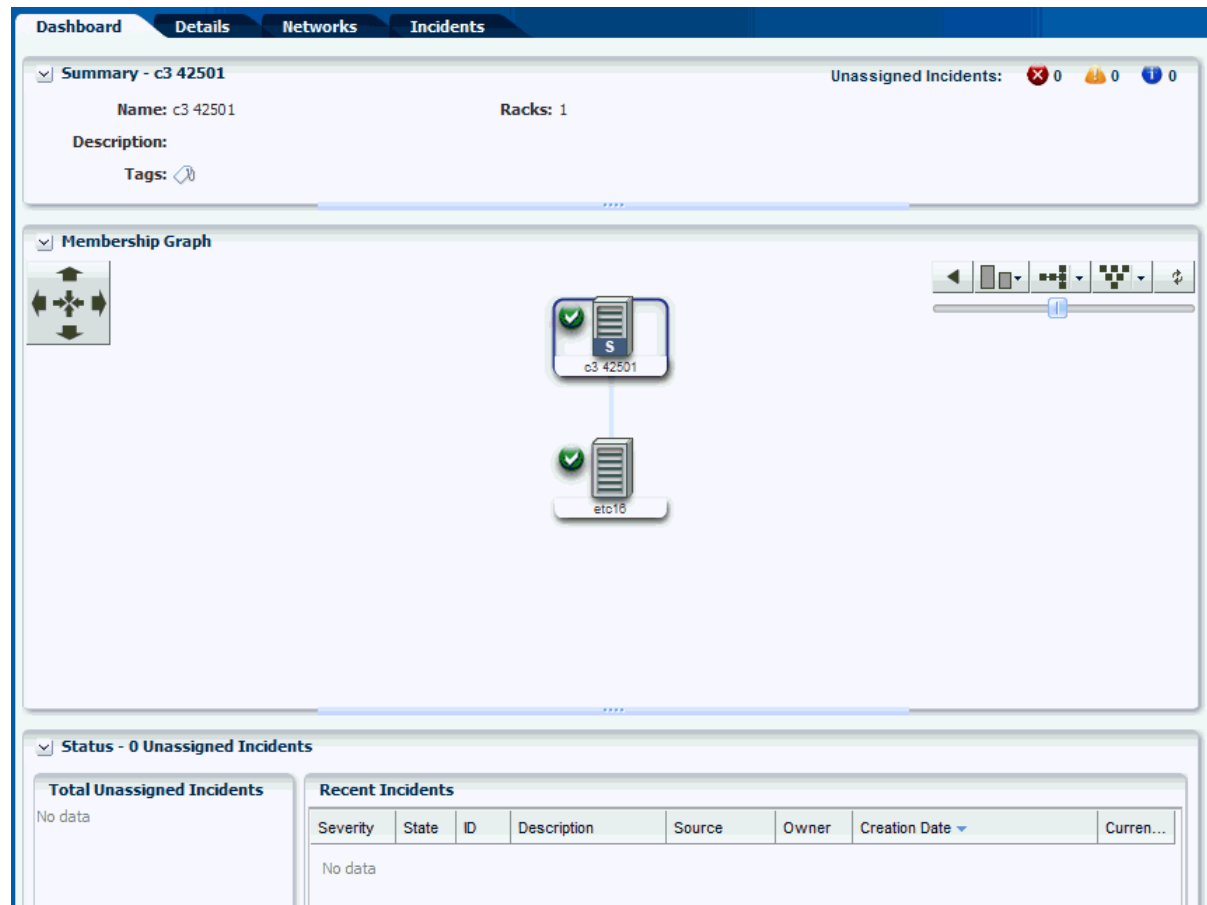
1. Log in to Oracle Enterprise Manager Ops Center using the Oracle SuperCluster Systems Admin role.
2. In the Navigation pane, under Assets, expand **Oracle Engineered Systems**.

Figure 4-1 Navigation to SuperCluster System



3. Select the Oracle SuperCluster system.

The Dashboard, Details, Networks, and Incidents tabs are displayed in the center pane.

Figure 4-2 SuperCluster System Center Pane

4. Click the required tab on the center pane to view more details.
 - **Dashboard Tab** displays the summary of the SuperCluster system, its membership graph, and the status of the system.
 - **Details Tab** displays the name of the Oracle SuperCluster system, description, master subnet manager address, number of racks, compute nodes, storage nodes, switches, and PDUs present in the system.
 - **Networks Tab** displays the Infrastructure Network table and Network Connectivity table.
 - **Incidents Tab** displays all the incidents and alerts reported in the Oracle SuperCluster system.

Dashboard Tab

This section describes the Dashboard tab .

The Dashboard tab displays the summary, membership graph, and status of the Oracle SuperCluster system.

- [Summary Pane](#)
- [Membership Graph](#)
- [Status Pane](#)

Summary Pane

The Summary section displays the name of the Oracle SuperCluster system, description or the name of the system identifier, number of racks that are part of the system, and the number of unassigned incidents.

The Unassigned Incidents icon in the summary pane includes incidents resulting from hardware faults. The three icons depict Critical Incidents, Warnings, and Information Incidents respectively.

The incidents are from all the assets that belong to a single Oracle SuperCluster Engineered System that includes multiple racks, or even systems with common IB backbone. If there are two systems, click each of them to display only incidents for assets that belong to that particular engineered system.

Membership Graph

The Membership Graph pane displays the Oracle SuperCluster system as a hierarchy of its components showing the relationship between the Oracle SuperCluster system and fabrics that are grouped in the rack.

You can instantly navigate to any asset by double-clicking on the asset in the membership graph.

Using the controls on the top right of the graphic pane, you can change the view of the graph to either a horizontal or a vertical orientation. You can also refresh the view by clicking the Refresh icon. You can also change the graph depths or size of the images.

Status Pane

The Status Pane displays the total unassigned incidents in chart format and also the recent incidents encountered by the Oracle SuperCluster system.

In the Recent Incidents section, the following details are displayed:

- Severity displays the severity of the incident.
- State displays the state of the incident.
- ID displays the incident ID.
- Description displays the incident description.
- Source displays the source of the incident.
- Owner identifies the admin that is assigned to the incident and responsible for taking corrective action on the incident.
- Creation Date displays the date on which the incident was created.
- Current Status displays a current status icon of the incident, such as Critical / Warning / Info / Cleared.

Details Tab

In the Details tab, the details of the Oracle SuperCluster system is displayed.

- Name of the Oracle SuperCluster System
- Description

- Master Subnet Manager
- Number of Racks
- Number of Compute Nodes
- Number of Storage Nodes
- Number of Exadata Storage Servers
- Number of Switches
- Number of PDUs
- Number of Fabrics

In the Tags pane, the tag names and their values are displayed. You can search for a particular tag using the Search feature.

Networks Tab

The Networks Tab displays the Infrastructure Networks Table and Network Connectivity Table.

Infrastructure Networks Table: The Infrastructure Networks Table displays the infrastructure networks that are defined and used inside the Oracle SuperCluster system for communication between the Oracle SuperCluster control components.

- Network Name specifies the name of the managed network.
- Network CIDR specifies the network.
- Partition Key specifies the IB network partition key.
- IP Range specifies the minimum and maximum boundaries of the IP addresses assigned to the network.
- Roles specifies the role of the network.

Network Connectivity Table: The Network Connectivity Table displays the infrastructure networks with IPs assigned to the individual hardware components of the Oracle SuperCluster system.

- Network Name
- Asset Type

Incidents Tab

This section describes the Incidents Tab.

The Incidents Tab displays all the unresolved incidents and alerts reported in the Oracle SuperCluster System.

Viewing the Oracle SuperCluster System Rack

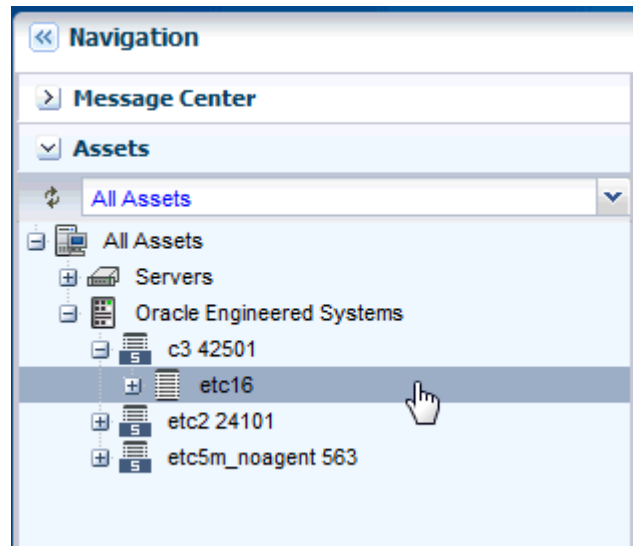
This section describes how to view the Oracle SuperCluster System rack, visualization of the rack physical layout, aggregated rack components, energy data, and other rack details.

As an administrator, you can drill down to an asset contained in the rack (server, storage node, switch, Exadata Cells) or even further.

To view the Oracle SuperCluster System rack, perform the following steps:

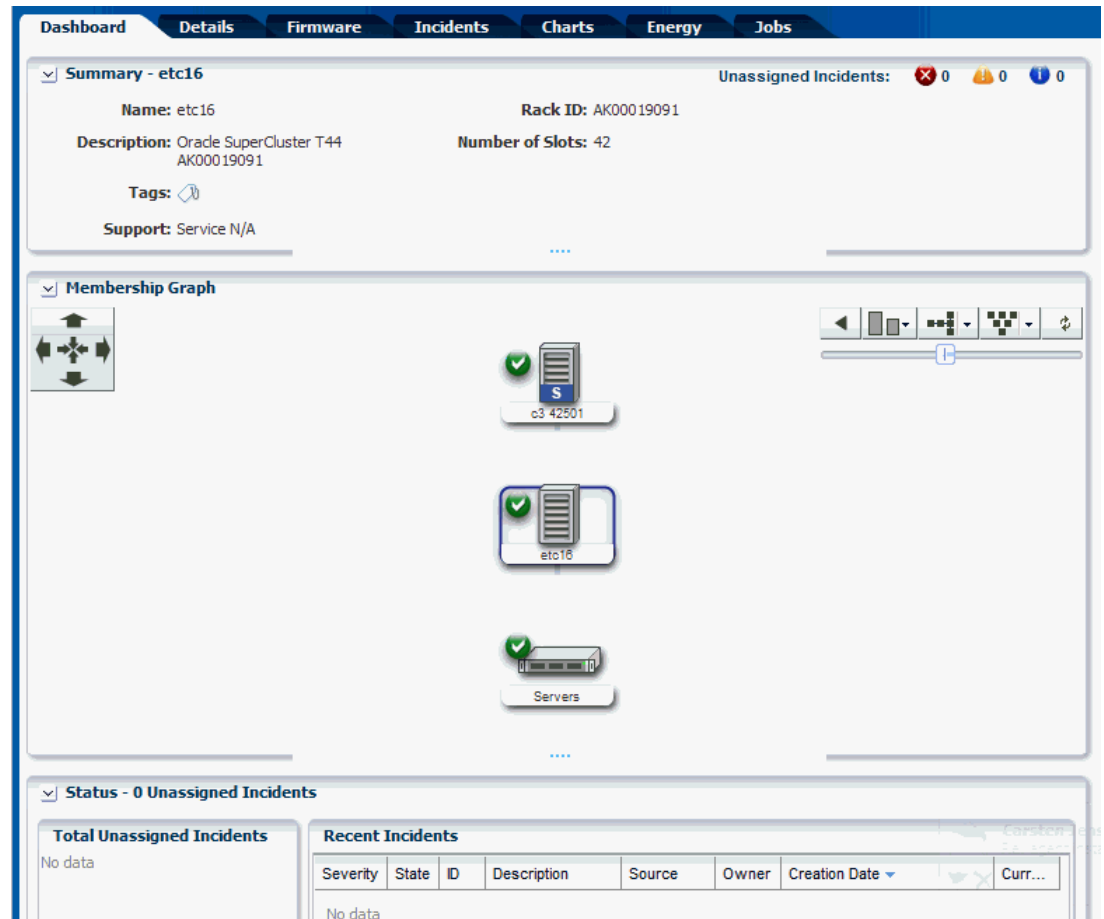
1. In the Navigation pane, under Assets, expand **Oracle Engineered Systems**.

Figure 4-3 Navigation to SuperCluster System Rack



2. Select a SuperCluster system, then select the rack that you want to view.

The Dashboard, Details, Firmware, Incidents, Charts, Energy, and Jobs tabs are displayed in the center pane.

Figure 4-4 SuperCluster System Rack Center Pane

- **Dashboard Tab** displays the summary, membership graph, and status of the rack.
 - **Details Tab** displays the rack info with a photorealistic view of the rack.
 - **Firmware Tab** displays details of the Compute Nodes, Switches, Storage Appliances, Exadata Storage Servers, and Power Distribution Units in the SuperCluster system
 - **Incidents Tab** displays the unresolved incidents and alerts for the selected SuperCluster system.
 - **Charts Tab** displays the chart of the aggregate power usage of the selected SuperCluster system. It provides more ways to display the power utilization data. You can change the graphed data to a bar chart or an area chart. You can also export the data for either the current view or all available data to a file in either CSV or XML format.
 - **Energy Tab** reports details of the Energy Performance such as Aggregate Power Consumption, Top and Bottom Consumers of Power and CPU Resources, and Average Power Consumption and CPU Utilization of the selected SuperCluster system rack.
 - **Jobs Tab** displays the current and historical jobs.
3. Click any of the tabs to view more details of the rack.

Viewing the Exadata Storage Server

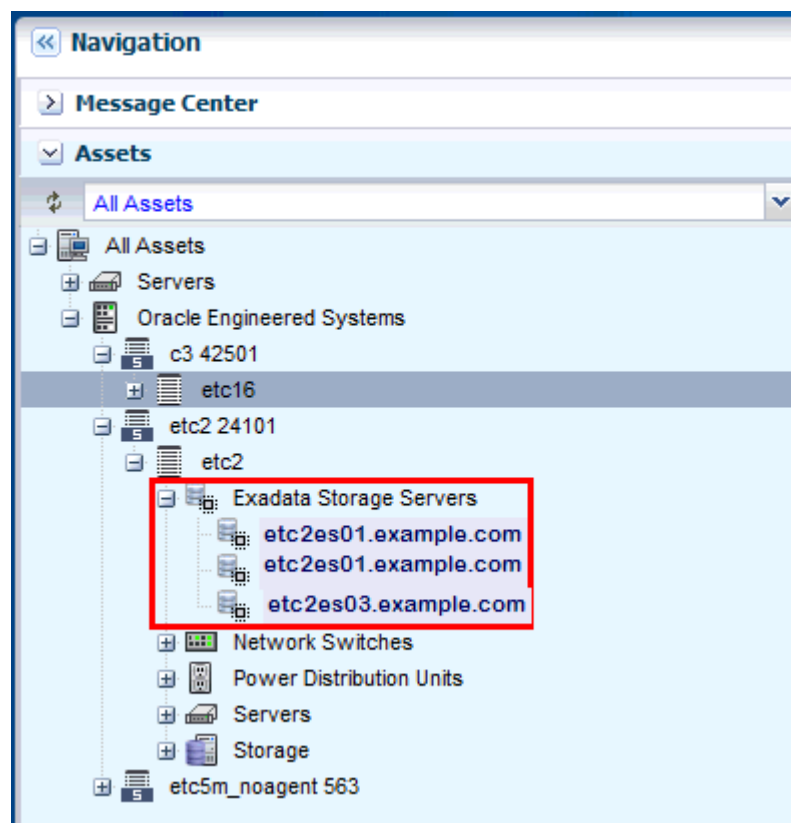
The Exadata Storage Server provides storage for the Oracle SuperCluster system. It is a sub-type of the Linux server installed to be a database node.

The Exadata Storage servers are grouped together in the Navigation pane. You can view the Exadata Storage servers the same way you view the Oracle SuperCluster system and its rack.

To view the Exadata Storage server, perform the following:

1. In the Navigation pane, under Assets, expand **Oracle Engineered Systems**.
2. Select the Oracle SuperCluster asset.
3. Expand **Exadata Storage Servers**, and select an Exadata Storage Server. The server details are displayed on the center pane. Select the respective tabs on the center pane to view or perform actions.

Figure 4-5 View of Exadata Storage Servers



Refer To Hardware Monitoring section in the *Hardware Management Guide* for information on the different views and tasks that can be performed on the server cells.

Discovering an Oracle SuperCluster Component

Manual discovery is necessary if a component has been replaced or some properties of a component has changed autonomously.

The component can either be a compute node, storage, switch, Exadata storage server, ILOM, or Service Processor.

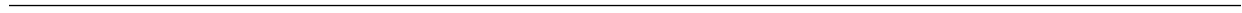
To manually discover an Oracle SuperCluster component, perform the following:

1. In the Navigation pane, select **Plan Management**.
2. Select Profiles and Policies, then select **Discovery**.
The available discovery profiles are listed in the center pane.
3. Select the required stored discovery profile and edit the profile and metadata if required.
4. Click **Finish**. The profile is updated. Run the discovery using the updated profile to discover the Oracle SuperCluster component.

Related Resources

For instructions on performing actions or to learn more about Enterprise Manager Ops Center, go to one of the following resources.

- For more information, see the Oracle Enterprise Manager Ops Center Documentation Library at http://docs.oracle.com/cd/E59957_01/index.htm
- For current discussions, see the product blog at <https://blogs.oracle.com/opscenter>.
- For end-to-end examples, see the workflows and how to documentation in the library. For deployment tasks, go to http://docs.oracle.com/cd/E59957_01/nav/deploy.htm, for operate tasks go to http://docs.oracle.com/cd/E59957_01/nav/operate.htm, and for administer tasks go to http://docs.oracle.com/cd/E59957_01/nav/administer.htm.
- See `Asset Management` for information about Asset Management.
- See `Software Libraries` for information about Software Libraries.
- See `Hardware` for information about Hardware Monitoring.



Glossary

account

An account entitles designated cloud users the right to use computing, network, and storage resources of vDC. The account provides the required capabilities to manage these resources. Account defines the amount of vCPU, memory and storage resources that can be used from the available vDC resources.

actions pane

The Actions pane is used to start jobs based on the current selection in the Navigation pane. Selections in the Navigation pane or center pane change the display of operations in the Actions pane. The Actions pane is subdivided into four sections – Operate, Organize, Deploy, and Update.

active

Reflects the state of system and indicates whether monitoring is actually being performed. The active state is not editable. When a rule is not enabled, monitoring is not active. The status is displayed on the Alert Monitoring Rules page, which is accessed from the Monitoring tab. Text in the Active field indicates whether the parameter is active.

activate

Changes an inactive Oracle Solaris boot environment to the new default boot environment on reboot.

Agent Controller

The Agent Controller software communicates with the Enterprise Controller and is installed automatically when an asset is discovered to make the asset a managed asset. You can choose to manage resources remotely with proxy resources without putting an agent on the system. Some features of the product don't work without the agent, but discovery manages the assets without putting an agent on them.

agentless

A system that is managed with Oracle Enterprise Manager Ops Center without the Agent Controller software being installed.

alert monitor

Monitors the state of managed resources and their attributes and raise an alert when the state is outside the pre-defined thresholds.

Alternate Boot Environment

An alternate boot environment, or ABE, is an inactive Oracle Solaris boot environment.

annotations

Annotations are scripts or comments that you can associate with a incident. Annotations can be automated operations to solve a incident, a suggested action, or a comment. You can associate an annotation with a specific incident. Annotations can be added to the Incidents Knowledge Base.

assemblies

Assemblies are kind of infrastructure templates that contain a configuration of multiple virtual machines with their virtual disks and the inter connectivity between them. Assemblies can be created as a set of .ovf (Open Virtualization Format) and .img (disk image) files, or may all be contained in a single .ova (Open Virtualization Format Archive) file.

assets

Assets are physical or virtual piece of hardware, storage device, or operating system that you can manage with Oracle Enterprise Manager Ops Center.

audit log

An audit log file stores details about user log ins, changes to user accounts, and job details. It shows the activity on the Enterprise Controller and the Proxy Controller.

Auto-Balancing Policy

An auto-balancing policy determines if, and how, a server pool is automatically load balanced. By default, automatic balancing is not selected. When you designate the server pool for automatic balancing, the software reviews the load on the virtualization hosts for the interval and day that you request. The software then migrates the guests, as needed, to balance the load. You can require administrator approval before the guests are moved. Also see placement policy and policy.

bandwidth flow

Bandwidth flow is the speed of a connection, or the amount of data that flows from a site's server out to the viewer at any given time.

Baseline

A dated collection of Oracle Solaris patches, patch metadata, and tools. Oracle releases Solaris baselines on a monthly basis. You can use the black lists and the white lists to modify a baseline and create a custom patch set.

baseline check

Baseline check is a feature of Oracle Enterprise Manager Ops Center Engineered Systems where the factory setup of eighth, quarter, half, and full rack configurations are considered as a normal or ideal setup. When the assets are discovered and associated with the rack, this setup is compared with the normal factory setup.

black list

A list of Oracle Solaris operating system patch IDs that you never want to apply to an asset. The black list is used when you are using a baseline to update an Oracle Solaris operating system.

See also [white list](#).

block storage

A block storage library consists of LUNs (Logical Unit Number). Each LUN is a slice of a storage volume, which is storage space provided by a collection of disks.

Boolean Control Parameter

A monitoring rule that uses a true-false check.

Boot Environment

A collection of mandatory file systems (disk slices and mount points) that are critical to the operation of the Oracle Solaris operating system. These disk slices can be on the same disk or distributed across multiple disks.

branded zone

Zones that are capable of emulating user environments from operating systems other than Oracle Solaris 10. Zones supports different versions of Oracle Solaris operating system in the zones for running applications.

category

For Oracle Enterprise Manager Ops Center's Local Content, a category is the type of software that is uploaded to Oracle Enterprise Manager Ops Center for use at a site. The parent category is one of the types defined in Oracle Enterprise Manager Ops Center. The local category is a category defined for the site, for example a script for a quarterly inventory.

channel

An operating system distribution, such as Oracle Solaris 10 5/09 on x86 platform or Oracle Linux 5.5. A channel is also called a distribution.

Cloud

A cloud is a set of physical resources that can be divided and allocated to multiple users who can in turn create and use virtual resources as needed without impact to or awareness of the other users' resources. A cloud is implemented as a pool of servers sharing the same virtualization type, storage, networks and fabrics.

cluster heartbeat

Cluster heartbeat is used to verify if the Oracle VM Servers in a clustered server pool are up and running. The heartbeat function has a network component, where a TCP/IP communication channel is created with each Oracle VM Server. Each Oracle VM Server sends regular keep-active packets and these packets are used to determine if each Oracle VM Server is active.

connected mode

This is the default connection mode for Oracle Enterprise Manager Ops Center. With this mode, patch data is regularly downloaded from Knowledge Base through an Internet connection.

Control Domain

A domain that is created when Oracle VM Server for SPARC software is installed. The control domain contains the software packages for Oracle VM Server, including the domains manager application and the domains manager daemon (ldmd) process required for managing the logical domains. The interface to the hypervisor is through the domains manager. The control domain enables you to create, and manage logical domains and allocate virtual resources to the domains.

critical file system

File systems that are required by the Oracle Solaris operating system. When you use Solaris Live Upgrade, these file systems are separate mount points in the `vfstab` file of the active and inactive boot environments. Example file systems are `root`, `/usr`, `/var`, and `/opt`. These file systems are copied from the source to the inactive boot environment.

Dashboard

Displays a high-level overview of an asset or a group of assets on the user interface. The information of the selected asset or group is displayed in the Center Pane.

Deployment Plans

Defines the sequence of steps that must be carried out on an asset to deploy. Deployment plans also include the specification or profile that each step should apply, and the resources that are required to apply it such as network addresses, host names and so on. Customized deployment plan enables you to perform hardware, firmware and operating system provisioning activities in a repeatable fashion.

disconnected mode

This is the alternate connection mode for Oracle Enterprise Manager Ops Center. Instead of relying on an Internet connection for updates, patch data is acquired using the harvester script and moved to the Enterprise Controller.

discovery

This is the method for adding assets to Oracle Enterprise Manager Ops Center. Assets can be discovered using a variety of protocols, by their service tags, or by declaring hardware so that it can be configured and provisioned with an operating system.

distribution

For an operating system, a distribution is a specialized version of the operating system.

Domain Name Service (DNS)

DNS is a network protocol that issues IP addresses within a specified range to devices on the network.

Dynamic System Domains

In M-Series servers, you can partition the available hardware resources into smaller logical systems called as dynamic system domains. Dynamic System Domains run their own copies of the operating system and offer a very high level of isolation from other domains in the system because the partitioning occurs at the hardware level.

Dynamic Storage Library

When the block storage library uses LUNs constructed from a storage array that is a managed asset, the block storage library is dynamic. You can add storage capacity as needed by adding LUNs supplied by the storage array.

When the block storage library relies on a storage array that is not a managed asset, the block storage library is static. Because Oracle Enterprise Manager Ops Center has less information about the storage array, you cannot increase the number of LUNs in the storage library.

enabled

A monitoring rule that is enabled is actively monitoring a parameter. By default, all rules are enabled. Users can disable and enable parameters on a per asset or group basis. The status is displayed on the Alert Monitoring Rules page, which is accessed from the Monitoring tab. Text in the Enabled field indicates whether the parameter is enabled.

Enterprise Controller

This is the central server for Oracle Enterprise Manager Ops Center software. The Enterprise Controller hosts the user interface and communicates with the Knowledge Base. Enterprise Controller stores management information, such as firmware and operating system images, plans, profiles, and policies and also stores the asset data

and site customizations. All operations, or jobs, are initiated from the Enterprise Controller.

Enumerated Control Parameter

A monitoring rule that uses a series of values.

Exclusive IP Mode

A dedicated network interface is allocated to the zone. You can choose the network interface when you assign the network to a zone.

Expression Parameter

A monitoring rule that uses an instruction to execute something that returns a value.

/etc Directory

The directory that contains critical system configuration files and maintenance commands.

/etc/netboot Directory

The directory on a WANboot server that contains the client configuration information and security data that are required for a WANboot installation.

/export File System

A file system on an operating system server that is shared with other systems on a network. For example, the /export file system can contain the root (/) file system and swap space for diskless clients and the home directories for users on the network. Diskless clients rely on the /export file system on an operating system server to boot and run.

Fabrics

Fabrics are network topologies where network nodes connect with each other through one or more network switches. A true fabric provides a direct connection between any two ports, and supports single step/lookup-based processing. Regardless of its various components, a fabric appears on the outside as a single, logical device with a single, consistent state.

The term is popular in telecommunication, Fibre Channel storage area networks, and other high-speed networks, including InfiniBand.

Filesystem Storage

A software or storage library that relies on a file system on the Enterprise Controller's system or a shared file system on an NFS server that the Enterprise Controller mounts.

global zone

In Oracle Solaris Zones, the global zone is both the default zone for the system and the zone used for system-wide administrative control. The global zone is the only zone from which a non-global zone can be configured, installed, managed, or uninstalled.

Administration of the system infrastructure, such as physical devices, routing, or dynamic reconfiguration (DR), is only possible in the global zone. Appropriately privileged processes running in the global zone can access objects associated with other zones.

group

A group is a user-defined set of assets. Assets can be added to groups based on asset attributes such as type or location. A group can include other groups. Assets can be manually added in addition to the rules based addition using attributes. Any type of asset that can be in a group can be added manually to any user-defined asset group.

guest

Guest refers to a virtual machine that is configured and installed in a virtualization host. For example, the logical domains in an Oracle VM Server host are referred to as guests in a server pool.

Guest Domain

A guest domain is a non-I/O domain that consumes virtual device services that are provided by one or more service domains. A guest domain does not have any physical I/O devices, but only has virtual I/O devices, such as virtual disks and virtual network interfaces.

GUID

Globally Unique Identifier. A pseudo-random 128-bit number that is computed by Windows to identify any component in the computer that requires a unique number. In Oracle Enterprise Manager Ops Center, GUIDs are used to identify LUNs.

Hardware Virtualization (HVM)

Hardware virtualization is a technology that is used to create multiple virtual systems on a single piece of physical hardware. When you create a hardware virtualized (HVM) guest, you must supply an ISO file in a repository to create the virtual machine.

Hardware Virtualized with Paravirtualized Drivers (PVHVM)

PVHVM is identical to HVM, but has additional paravirtualized drivers for improved performance of the virtual machine. PVHVM improves the performance level of Microsoft Windows running in guests.

host name

The name by which a system is known to other systems on a network. This name must be unique among all the systems within a particular domain (usually, this means within any single organization). A host name can be any combination of letters, numbers, and dashes (-), but it cannot begin or end with a dash.

hypervisor

A hypervisor is the software that enables multiple virtual machines to be multiplexed on a single physical machine. The hypervisor code runs at a higher privilege level than the supervisor code of its guest operating systems to manage use of the underlying hardware resources by multiple supervisor kernels.

Image Packaging System (IPS)

Image Packaging System is an Oracle Solaris 11 package that contains operating system components and a manifest that provides basic metadata.

incident

An event that triggers an alert when a monitored attribute does not meet the monitoring parameters. A new incident is displayed in the Unassigned Incidents queue in the Message Center. From the Message Center you can view and act on incidents.

Incident Knowledge Base

A custom database of annotations that are associated with known incidents.

InfiniBand

InfiniBand is a switched fabric communications link primarily used in high-performance computing. Its features include quality of service and failover, and it is designed to be scalable. The InfiniBand architecture specification defines a connection between processor nodes and high performance I/O nodes such as storage devices.

InfiniBand transmission rates begin at 2.5 GBps.

I/O Domain

An I/O domain has direct access to a physical I/O device, such as a network card in a PCI EXPRESS (PCIe) controller. An I/O domain can own a PCIe root complex, or it can own a PCIe slot or on-board PCIe device by using the direct I/O (DIO) feature. An I/O domain can share physical I/O devices with other domains in the form of virtual devices when the I/O domain is also used as a service domain.

IPMP

IPMP (IP network multipathing) provides physical interface failure detection and transparent network access failover. You can configure one or more physical interfaces into an IP multipathing group, or IPMP group. After configuring IPMP, the system automatically monitors the interfaces in the IPMP group for failure.

JET Templates

JumpStart Enterprise Toolkit provides a framework to simplify and extend the JumpStart functionality provided within the Oracle Solaris operating system. You can use JET to install Oracle Solaris on the SPARC and x86/64 platforms. You create JET templates to customize the operating system configuration options as required.

JMX

Java Management Extensions (JMX) technology provides the tools for building distributed, modular, and dynamic solutions for managing and monitoring devices, applications, and networks. The JMX API defines the notion of MBeans, or manageable objects, which expose attributes and operations in a way that enables remote management applications to access them. The public API in Oracle Enterprise Manager Ops Center can be accessed through JMX-Remoting.

Knowledge Base

The Knowledge Base is the repository for metadata about Oracle Solaris and Linux operating system components. Knowledge base stores information about patch dependencies, patch compatibilities, withdrawn patches, downloads, and deployment rules and also stores URL of operating system vendor download sites and downloads the components at set intervals. The Enterprise Controller must have Internet connection to connect to the Knowledge Base.

least allocated

Least allocated is a parameter in the server pool placement policy. The lowest allocated CPU and memory is the total static resource allocation across all guests on the virtualization host. The other placement policy parameter is relative load.

libraries

A collection of virtual machine images and disk images that are located under the same file system. When a server pool is created, one or more libraries are assigned to the server pool. Server pools can share the same libraries.

link aggregation

Link aggregation is a standard defined in IEEE802.3ad. An aggregated link consists of several interfaces on a system configured as a single, logical unit. Link aggregation increases the speed and high availability of a connection between a server and a switch.

LUN

LUN stands for Logical Unit Number. In storage, a LUN is the number assigned to a SCSI protocol entity, that handles (I/O) operations. A SCSI target provides a LUN for each storage volume.

management

An asset is managed when Oracle Enterprise Manager Ops Center can monitor it and target it with jobs. Operating systems can be managed with or without an Agent Controller, but operating system update functions are only available with an Agent Controller.

manifest

Each Oracle Solaris 11 package has an associated manifest that describes how the package is put together. The package manifest provides basic metadata about the package (such as name, description, version, and category), what files and directories are included, and the package dependencies.

maintenance mode

Disables incidents from displaying in the UI, but does not disable monitoring. This mode is useful when you do not want incidents generated during system maintenance.

membership graph

Shows a graphical relationship between assets and status of the connection. A blue line shows the working connection and a red line represents the faulted or disconnected status. The membership graph is displayed in the Center Pane.

message center

Displays all incidents, alerts, and notifications. Message Center helps you to view and manage incidents, notifications, and service request, and display warranty information.

MTU

MTU stands for Maximum Transmission Unit. MTU is the largest packet size, in bytes, that can be sent over a network.

monitoring policy

A set of monitoring rules that defines alert conditions. Policies are either system-defined, user-defined, or generic. Each monitoring policy contains one or more alert monitors for a specific type of resource. An alert is raised when the state is outside the pre-defined condition.

monitoring rule

Contains monitoring parameters that state the values and boundaries for an asset's activity. The set of rules is called a monitoring policy.

MPxIO

MPxIO provides a multipathing solution for storage devices accessible through multiple physical paths. MPxIO is included as a part of the distribution in Solaris 10 onwards.

NAT

NAT stands for Network Address Translation. NAT is a protocol that enables a network to use many internal-only IP addresses and a few Internet-facing IP addresses.

navigation pane

Navigation pane is an important part of the user interface of Oracle Enterprise Manager Ops Center. navigation pane contains Message Center, Assets, Plan Management, Networks, Libraries, Reports, vDC Management, and Administration. The Assets section of the Navigation pane lists all the asset that are managed by Oracle Enterprise Manager Ops Center, grouped by its type and the required criteria.

network

A network enables guests to communicate with each other or with the external world (that is, the Internet). When a server pool is created, one or more networks is assigned to the server pool. Server pools can share the same networks.

network bonding

Network bonding refers to the combination of network interfaces on one host for redundancy and/or increased throughput. Redundancy is the key factor you use to protect your virtualized environment from loss of service due to failure of a single physical link. This network bonding equals as the Linux network bonding. Using network bonding in Oracle VM might require some switch configuration.

network domain

A system of centralized network administration, in which the permissions that grant access to resources in the network are maintained in one or more servers. Network Domains use a hierarchical structure that enables you to assign permissions to collaborate with different departments in an organization.

A large network may have several domains based on the needs of each set of users.

NIS

NIS stands for Network Information System. NIS is a network naming and administration system for smaller networks. NIS is similar to the Internet's domain name system (DNS) but designed for a smaller network.

non-global zone

A virtualized operating system environment created within a single instance of the Oracle Solaris operating system. One or more applications can run in a non-global zone without interacting with the rest of the system. Non-global zones are also called zones.

non-sparse copy

A clone of the type "non-sparse copy" is a disk image file of a physical disk, taking up the space equivalent to the full specified disk size, including empty blocks.

notifications

An email, pager, or user interface message that is automatically sent by Oracle Enterprise Manager Ops Center when specified conditions are met. You can configure separate notification profiles for different assets and different users. You can configure

the software to send notification for specific incidents, or when a critical or warning incident is detected.

Opaque Data

An opaque data is a data type that is incompletely defined in an interface, so that its values can only be manipulated by calling subroutines that have access to the missing information.

/opt

A file system that contains the mount points for third-party and unbundled software.

Oracle Enterprise Manager Cloud Control

Oracle Enterprise Manager Cloud Control is a single, integrated solution for managing all aspects of the Oracle Cloud and the applications running on it. Oracle Enterprise Manager Cloud Control couples a potent, top-down monitoring approach to delivering the highest quality of service for applications with a cost-effective automated configuration management, provisioning, and administration solution.

Oracle Engineered System

Oracle Engineered Systems are hardware and software integrated systems that are designed for a specific enterprise purpose. Oracle Engineered System helps in reducing the cost and complexity of the IT infrastructures, and increases the productivity and performance.

Oracle Services

Provides integrated methods of maintaining and displaying current contracts, warranty information, contract dates, and service requests in Oracle Enterprise Manager Ops Center.

Oracle Solaris Clusters

Oracle Solaris Clusters is a high availability software product for Solaris operating system. Oracle Solaris Clusters are used to improve the availability of software services such as databases, file sharing on a network, electronic commerce websites, or other applications. You can now manage Oracle Solaris Clusters as any other asset using Oracle Enterprise Manager Ops Center.

Oracle Solaris Zones

Oracle Solaris Zones is a software partitioning technology used to virtualize operating system services, and provide an isolated and secure environment for running applications. When you create a non-global zone, you produce an application execution environment in which processes are isolated from all other zones. This isolation prevents processes that run in a zone from monitoring or affecting processes that run in any other zones. See also global zone and non-global zone.

Oracle Solaris 11 Software Update Library

Oracle Solaris 11 Software Update Library repository is located on the Enterprise Controller. This contains the Oracle Solaris 11 packages that you need to install, provision, and update your Oracle Solaris 11 operating system.

Oracle VM Server for SPARC

Oracle VM Server is a virtualization technology that enables the creation of multiple virtual systems by a hypervisor in the firmware layer, interposed between the operating system and the hardware platform. This is designed to abstract the hardware and can expose or hide various system resources, allowing for the creation of resource partitions that can operate as discrete systems, complete with virtual CPU, memory and I/O devices.

Oracle VM Server for SPARC was previously known as Logical Domains, it is a virtualization technology designed to run on CMT based servers.

Oracle VM Server for x86

Oracle VM Server for x86 is a managed virtualization environment or part of such an environment, that is designed to provide a lightweight, secure, server-based platform for running virtual machines. Oracle VM Server for x86 is based upon an updated version of the underlying Xen hypervisor technology, and includes Oracle VM Agent.

Oracle Solaris ZFS

An Oracle Solaris operating system file system that uses storage pools to manage physical storage.

OS Provisioning Profile

Defines the image, provisioning, and installation requirements.

OS Configuration Profile

Defines the OS and network configuration.

Paravirtualization

Paravirtualization enables you to select a location for the mounted ISO file from which you create the virtual machine. Before you create the virtual machine using the paravirtualized method, you must mount the ISO file on an NFS share, or HTTP or FTP server.

parent repositories

Any hosted Oracle repository that Oracle Solaris 11 Software Update Library can use to upload, or sync, content.

photorealistic view

Photorealistic view displays the front and rear views of the rack. All slots and the respective assets are displayed. Positions within the rack are displayed in a 2-

dimensional view. All assets in the rack have a specific image. The health status of assets such as OK, Warning, and Critical are displayed in the form of colored buttons.

placement policy

Determines whether the guest is placed on a virtualization host with the lowest relative load or the least allocated. By default, new guests are placed on the server with the lowest load and are automatically started. The placement policy is defined when a server pool is created. Server pools can have different placement policies.

policy

Defines how a job is performed and sets the automation level of the job. A policy file is similar to a response file. If there is a conflict between a profile and policy, the profile overrides the policy.

Private vNet

vNet that is unique to a given account is called Private vNet.

profile

Defines the configuration of components for a specific type of system. By using a profile, you can define what is enabled, and not enabled, to be installed on a system. If there is a conflict between a profile and policy, the profile overrides the policy.

Proxy Controller

Proxy Controllers link the managed assets to the Enterprise Controller and act as proxies for operations that must be located close to the managed assets, such as operating system provisioning. Proxy Controllers distribute the network load and provide for fan-out capabilities to minimize network load. Proxy Controllers perform management operations on assets and report the results to the Enterprise Controller. An Oracle Enterprise Manager Ops Center installation must have at least one functioning Proxy Controller.

relative load

Relative load is a parameter in the server pool placement policy. Lowest relative load is based on the lowest memory and CPU utilization for the virtualization host over the past three weeks. The other placement policy parameter is least allocated.

repository

A repository is a central place that stores an aggregation of data in an organized way, usually in a computer storage. Depending on how the term is used, a repository may be directly accessible to users or may be a place from which specific databases, files, or documents are obtained for further relocation or distribution in a network.

root

The top level of a hierarchy of items. `root` is the one item from which all other items are descended. See `root` directory or `root (/)` file system.

root directory

The top-level directory from which all other directories stem.

Root Domain

A root domain has a PCIe root complex assigned to it. This domain owns the PCIe fabric and provides all fabric-related services, such as fabric error handling. A root domain is also an I/O domain, as it owns and has direct access to physical I/O devices.

root file system

The top-level file system from which all other file systems stem. The `root (/)` file system is the base on which all other file systems are mounted, and is never unmounted. The `root (/)` file system contains the directories and files critical for system operation, such as the kernel, device drivers, and the programs that are used to boot a system.

RPM

A package manager used by many versions of the Linux operating system.

rule parameters

Define the monitoring parameters. The following types of rule parameters are available: Threshold, Boolean Control, Enumerated Control, and Expression. Some parameters are editable. All active parameters can be disabled.

SAN Storage Library

Storage Attached Network (SAN) storage which is used for providing storage spaces for managed assets in Oracle Enterprise Manager Ops Center. The SAN storage library consists of groups of LUNs.

script

A command file that is associated with one of Oracle Enterprise Manager Ops Center's actions, either before the action occurs (pre-action script), or after the action completes (post-action script).

security group

The organization of users and other domain objects into groups for easy administration of access permissions is known as a security group. A Security Group enables you to specify certain security settings on an instance specific basis. You have the ability to filter traffic based on IP's (a specific address or a subnet), packet types (TCP, UDP or ICMP), and ports (or a range of ports). You can also grant access to an entire security group so that your trusted computers can get access to each other without having to open ports to the public.

server management

Server management is used to manage the physical Oracle VM Servers in a server pool, for example, to update the Oracle VM Agent on the different Oracle VM Servers.

server pool

A server pool is a resource pool of virtualization hosts that share compatible chip architecture, which facilitates actions such as moving guests between virtualization host instances. Members of the server pool have access to the same network and storage library resources. Guests can access the images contained in the server pool's library. Several server pools can share the same network and library storage resources.

server templates

Server templates provide pre-built images for creating vServers. They can be uploaded individually or as part of an Assembly. Server templates can be created from an existing vServer.

service tag

Service tags are XML files that identify assets uniquely. Assets with service tags can be discovered using the Find Assets wizard.

Service Domain

A service domain provides virtual device services to other domains, such as a virtual switch, a virtual console concentrator, and a virtual disk server. You can have more than one service domain, and any domain can be configured as a service domain.

Shared IP Mode

The global zone shares its network interface with one or more zone. You must define the network interface when you assign the network to the global zone.

shared storage

A shared storage library in Oracle Enterprise Manager Ops Center is one that is accessible by the server and operating system. It is not related to Zones on Shared Storage in Oracle Solaris 11.1.

snapshot

Snapshot, a point in time image of a volume is a non-bootable copy of a boot environment that uses much less disk space than a boot environment. You can create a boot environment from a snapshot.

software libraries

A software library can be a local file system on the Enterprise Controller or a mount point on an NFS server. The software library is used to store the operating system images for provisioning, branded images, flars, firmwares, profiles, operating system updates, custom programs and scripts.

sparse copy

A clone of the type "sparse copy" is a disk image file of a physical disk, taking up only the amount of space actually in use; not the full specified disk size.

static route

Specifies the route taken by the network for external access. You define a default gateway for the network; however, this default gateway may not be reachable to a given subnet. In this case, you must add a static route for this specific subnet.

status pane

The Status pane in the Jobs section describes about the state of the incidents like jobs in progress, jobs failed, jobs partially successful, jobs stopped, jobs schedules, jobs successful and so on.

Support Repository Update (SRU)

Support Repository Update (SRU) is a package of Oracle Solaris 11 operating system updates that releases on a regular basis.

SCCM

Microsoft System Center Configuration Manager (SCCM), is used to update Windows operating systems.

syncing

Syncing is the process of reconfiguring or updating the Oracle Solaris 11 Software Update Library with the Oracle Solaris 11 Image Packaging System (IPS).

synchronizing

Updates an inactive boot environment to match an active boot environment.

system groups

Default asset groups that automatically organize your assets by type in the user interface.

System-defined Rules

Attribute specific monitoring rules that are hard-coded into drivers. You can disable a system-defined rule, but cannot edit, move, or reconfigure these types of rules.

Thin Clone

A thin clone is a clone of a physical disk that takes up only the amount of disk space actually in use; not the full specified disk size.

threshold parameters

A monitoring rule that uses a numeric value above or below a defined level.

time server

The network device that provides accurate time for synchronizing network activity.

unmanaged storage

Unmanaged storage is the storage resource that is unknown to Oracle Enterprise Manager Ops Center. When you add storage to zones using the native CLI or manage existing zone environments, the zone's storage is not identified and termed as unmanaged.

User-defined Network Domain

A network domain provides custom network resources from an Ethernet or InfiniBand fabric to virtualization hosts, server pools, or virtual datacenters so that new networks can be created as needed. A user-defined network domain supplements the Default Network Domain that is always available and cannot be deleted.

User-defined Rules

Monitoring rules that are associated with, and determined by, the type of managed resource. You can apply a user-defined rule to many different attributes.

/usr File System

A file system on a standalone system or server that contains many of the standard UNIX programs.

Sharing the large `/usr` file system with a server rather than maintaining a local copy minimizes the overall disk space that is required to install and run the Solaris software on a system.

/var File System

A file system or directory (on standalone systems) that contains system files that are likely to change or grow over the life of the system. These files include system logs, vi files, mail files, and UUCP files.

vDC

vDC is a collection of physical servers and storage that are placed on a common network. These physical resources are organized into a pool that are accessed by self-service users. This offers an access point through which you can allocate and control the resources inside. This is created during the set up phase.

vNets

vNets are managed networks and their associated logical (L2) fabrics that can be associated with a vDC and its Accounts.

vServer

vServer is an entity that provides the outward interface of a standalone operating system. This may be a Virtual Machine (VM) or a Solaris Container or a similar construct. This consumes CPU and memory resources. This can be a member of one or multiple vNets.

vServer Type

vServer type is a profile for vServer creation that defines size of memory, size of disk and number of vCPUs to be used when creating a new vServer instance, that is used in combination with a Server Template.

VID

VLAN Identifier. Part of the VLAN tag inserted into Ethernet frame that specifies its VLAN.

virtual disk image

A virtual disk image is a representation of a virtual storage device that is associated with a virtual machine. Such storage can represent a virtual hard disk or a virtual CD/DVD.

virtualization host

Oracle VM Server that are managed by Oracle Enterprise Manager Ops Center is referred to as virtualization host. The virtualization host contains a hypervisor and its local resources and network connections.

virtual machine

A virtual machine is a software implementation of a computing environment in which an operating system or program is installed and run.

A virtual machine typically emulates a physical computing environment, requests for CPU, memory, hard disk, network, and other hardware resources that are managed by a virtualization layer which translates these requests to the underlying physical hardware.

virtual machine template

A Virtual Machine Template provides a standardized group of hardware, and software settings that is used repeatedly to create virtual machines configured with those settings.

virtual server image

A virtual server image is the persisted specification and state of a virtual machine. A virtual server is created when you create a guest. The virtual server image contains the general specification of the guest such as CPU, network, memory, and the type of physical storage that is backing the guest. A virtual server image is also referred to as a guest image.

Virtual Local Area Network (VLAN)

VLAN is a group of network resources connected to different network segments that behave as if they were connected to a single network segment. All transmissions from the VLAN are identified by a unique VLAN tag.

volume

A volume is an identifiable unit of data storage that is sometimes physically removable from the computer or storage system. In tape storage systems, a volume may be a tape cartridge. In mainframe storage systems, a volume may be a removable hard disk. Each volume has a system-unique name or number that enables it to be specified by a user.

white list

A list of Oracle Solaris operating system patch IDs that you always want to be applied to a host. The white list is used when you are using a baseline to update an Oracle Solaris operating system.

See also [black list](#).

WINS

WINS stands for Windows Internet Naming Service. The WINS server converts NetBIOS names to IP addresses.

WS-Man

Web Services for Management (WS-MAN) is a specification for managing servers, devices, and applications using web services standards. WS - Man provides a common way for systems to access and exchange management information across the entire IT infrastructure. The public API in Oracle Enterprise Manager Ops Center can be accessed through WS-Management.

World Wide Name (WWN)

WWN is a unique identifier in a Fibre Channel or Serial Attached SCSI storage network. Each WWN is an 8-byte number derived from an IEEE OUI and vendor information.

zone

Also called non-global zones, are a virtualized operating system environment created within a single instance of the Oracle Solaris operating system. One or more applications can run in a non-global zone without interacting with the rest of the system.

Index

C

- CIDR
 - Classless Inter-Domain Routing, [3-3](#)
- Classless Inter-Domain Routing
 - CIDR, [3-3](#)
- Cloud Admin
 - prerequisites, [2-6](#)
- Cloud User
 - prerequisites, [2-6](#)
- Compute nodes, [4-9](#)

D

- Deploy Proxy Controller, [3-6](#)
- Discovery
 - SPARC SuperCluster, [4-9](#)

E

- Engineered Systems
 - See Oracle Engineered Systems, [1-1](#)
- Exadata Storage Servers, [4-9](#)

I

- Incidents
 - SPARC SuperCluster, [4-6](#)

O

- Oracle Engineered Systems
 - SPARC SuperCluster
 - compute nodes, [4-9](#)
 - Dashboard, [4-4](#), [4-5](#)
 - Details, [4-5](#)
 - discovery, [4-9](#)
 - Exadata Storage Server, [4-9](#)
 - Incidents, [4-6](#)
 - Infrastructure Networks, [4-6](#)
 - Network Connectivity, [4-6](#)
 - networks, [4-6](#)
 - storage, [4-9](#)

- Oracle Engineered Systems (*continued*)
 - SPARC SuperCluster (*continued*)
 - switches, [4-9](#)
 - viewing, [4-3](#)
 - viewing racks, [3-12](#), [4-6](#)
- Oracle Engineered Systems Management, [3-1](#)
- Oracle SuperCluster, [2-3](#)

R

- Racks
 - SPARC SuperCluster, [3-12](#), [4-6](#)
- Reports
 - Oracle Engineered Systems Report, [3-14](#)
- Role
 - root, [2-1](#)
- Roles
 - Cloud Admin, [2-6](#)
 - Cloud User, [2-6](#)
 - SuperCluster System Admin, [2-1](#)
- Root user role, [2-1](#)

S

- SPARC SuperCluster
 - Dashboard, [4-4](#)
 - Incidents tab, [4-6](#)
 - Networks tab, [4-6](#)
 - Rack View, [4-6](#)
 - System View, [4-6](#)
- SPARC SuperCluster Rack View, [3-12](#)
- SPARC SuperCluster T4-4, [1-2](#)
- SPARC SuperCluster View
 - Membership Graph, [4-5](#)
 - Status, [4-5](#)
 - Summary, [4-5](#)
- Specify Asset Privileges, [2-3](#)
- Storage
 - Exadata Storage Server, [4-9](#)
 - SPARC SuperCluster, [4-9](#)
- SuperCluster, [1-2](#)
- SuperCluster System Admin
 - prerequisites, [2-1](#)

Switches
Oracle Engineered Systems, [4-9](#)

V

View Oracle Engineered Systems, [3-11](#)