

# **Oracle® Enterprise Manager Ops Center**

Concepts Guide

12c Release 2 (12.2.2.0.0)

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Primary Author: Laura Hartman, Barbara Higgins,

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# Preface

The *Oracle® Enterprise Manager Ops Center Concepts Guide* provides an overview of the Oracle Enterprise Manager Ops Center software.

## Audience

This document is intended for all users of Oracle Enterprise Manager Ops Center 12c Release 2 software.

## Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc>.

### Access to Oracle Support

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## Related Documents

For more information, see the Oracle Enterprise Manager Ops Center Documentation Library at [http://docs.oracle.com/cd/E40871\\_01/index.htm](http://docs.oracle.com/cd/E40871_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 these and other 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.

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<b>Convention</b>	<b>Meaning</b>
monospace	Monospace type indicates commands within a paragraph, code in examples, text that appears on the screen, or text that you enter.

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# Introduction

Many organizations are moving toward complex data centers that incorporate virtualization technology and disparate operating system, hardware, and storage device assets. System administrators are looking for effective methods for managing data center complexities, solving the major challenges that they face, reducing costs, and saving time. System management challenges include streamlining operations to control operation and maintenance costs, deploying new assets efficiently, responding quickly to changes in resources and reducing downtime. Oracle Enterprise Manager Cloud Control and Oracle Enterprise Manager Ops Center address these challenges.

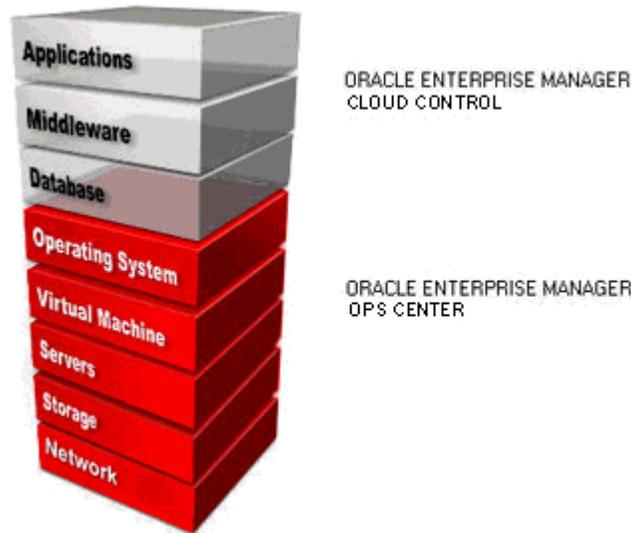
This document provides an overview of the Oracle Enterprise Manager Ops Center software and explains its design. The following topics are covered in this document:

- [Key Features and Capabilities](#)
- [Exploring the User Interface](#)
- [Icons](#)

## About Oracle Enterprise Manager

Oracle Enterprise Manager Cloud Control and Oracle Enterprise Manager Ops Center are complementary technologies that provide an enterprise-level data center management solution for all levels, from applications to storage disks. Each product monitors managed assets, or targets, but in different sections of the data center asset stack. Oracle Enterprise Manager Cloud Control manages applications, middleware, and databases, while Oracle Enterprise Manager Ops Center manages operating systems, virtual machines, servers, storage resources, and network resources. Together, they deliver a complete solution for data center infrastructure management. [Figure 1-1](#) shows the three dimensional managed asset stack for Oracle Enterprise Manager Ops Center.

**Figure 1–1 Managed Asset Stack**

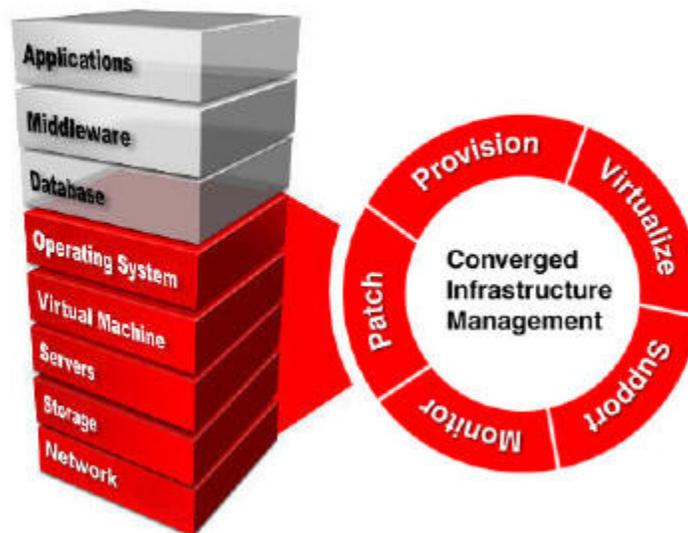


Install and configure the applications to work together, or use each application individually. This document focuses solely on the features and functionality of the Oracle Enterprise Manager Ops Center software.

## Oracle Enterprise Manager Ops Center Solution

Oracle Enterprise Manager Ops Center is Oracle's comprehensive system management solution for managing the physical and virtual operating systems, servers, and storage devices in your data center. You use the discovery and management features to add your data center's assets to the set of managed assets in Oracle Enterprise Manager Ops Center. You can provision, update (patch), monitor, and manage the physical and virtual managed assets in multiple data centers from a single console, regardless of where the asset is located.

[Figure 1–2](#) focuses on the assets managed by Oracle Enterprise Manager Ops Center.

**Figure 1–2 Oracle Enterprise Manager Ops Center Solution**

Oracle Enterprise Manager Ops Center is included in the Oracle Premier Support for Systems, Oracle Premier Support for Operating Systems, and Oracle Premier and Basic Support for Oracle Linux, Oracle VM Server for SPARC, and Oracle VM Servers for x86. By owning one of these Oracle Support contracts, you are able to use and get support for Oracle Enterprise Manager Ops Center.

## Architecture of the Solution

Oracle Enterprise Manager Ops Center is designed to provide increased scalability, high availability and optimized performance in large, distributed data centers. The architecture is scaled as your organization grows. The Enterprise Controller, Proxy Controllers, Agent Controllers, and user interface are the major architectural components. They are supported by the Knowledge Base, which is hosted by Oracle and accessed through the Internet. This architecture lets you customize your deployment for the size and network topology of your organization by varying the placement of the Proxy Controllers and use of Agent Controllers.

Oracle Enterprise Manager Ops Center downloads information from the [Knowledge Base and Package Repository](#) to the [Enterprise Controller](#). At least one [Proxy Controller](#) distributes the Enterprise Controller's work. Secure network connections between all components transfer control commands and data. For operating systems, [Agent Controllers](#) provide update capabilities, management and monitoring, and control of virtualization environments. Agent Controllers are required for Oracle Solaris 9 and 10 and Linux catalogs. Oracle Solaris 9 and Oracle Solaris 10 boot environment management also requires an agent-managed operating system.

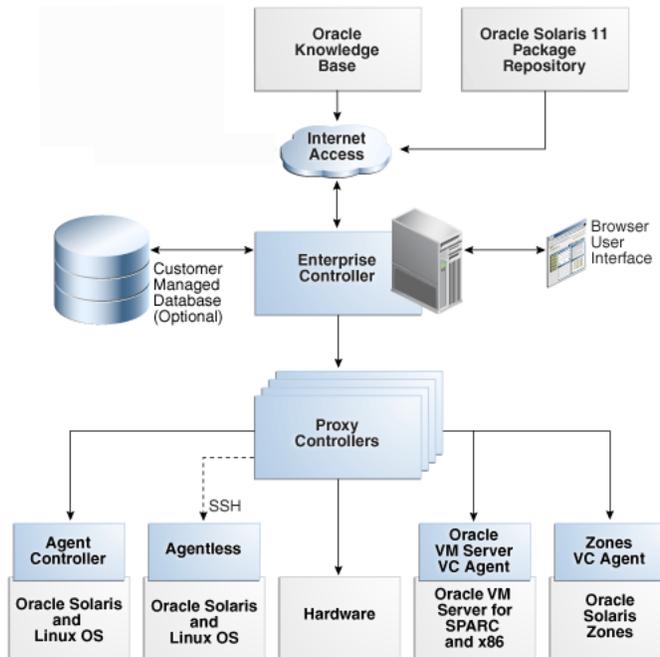
For an asset to be managed, it must be accessible on a network that is associated with a Proxy Controller. When you discover operating systems, you are given the option to manage them with or without an agent. Agent managed assets enable you to use Oracle Enterprise Manager Ops Center to monitor, update, and virtualize the assets. Agent Controllers run in two modes, basic and virtualization management. The basic Agent Controller provides support for monitoring and updating of the host operating system. The Virtualization Controller Agent, or VC Agent, supports basic and

virtualization control for Oracle VM Server systems and Oracle Zones. There are two types of VC agents: a Zones Virtualization Controller Agent and a Oracle VM Server Virtualization Controller Agent. The Zones Virtualization Controller Agent manages the zones running on a global zone and manages zones that are running on the logical domains. The Oracle VM Server Virtualization Controller Agent manages the logical domains that are running on the Control Domain.

When an operating system is managed using only a set of credentials, it is considered agentlessly managed. Some features, such as analytics of your virtual environment, are not available when the operating system is managed agentlessly.

Figure 1-3 shows the architecture of Oracle Enterprise Manager Ops Center.

**Figure 1-3 Architecture of Oracle Enterprise Manager Ops Center**



## Knowledge Base and Package Repository

The Knowledge Base and Oracle Solaris 11 Package Repository store metadata about Oracle Solaris and Oracle Linux operating system components. The metadata includes patch dependencies, standard patch compatibilities, withdrawn patches, and rules for download and deployment. The Knowledge Base stores the Oracle Solaris 9 and 10 and Oracle Linux operating system updates and packages.

Oracle Enterprise Manager Ops Center is configured to connect to Oracle Corporation sites for updated metadata for operating systems. However, you can configure the product software without a direct connection to these sites.

## Enterprise Controller

The Enterprise Controller is the central server for Oracle Enterprise Manager Ops Center. All operations, or jobs, are initiated from the Enterprise Controller. The Enterprise Controller manages firmware and operating system images, plans, profiles, and policies. The Enterprise Controller relies on a database of asset data and site customizations. The database is a local embedded database or a remote Oracle Enterprise Edition database that is accessible on the network to the Enterprise

Controller. Include the Enterprise Controller in an active-standby High Availability configuration to increase the availability of the Oracle Enterprise Manager Ops Center software.

The Enterprise Controller connects to the Internet to get access to contract information, to create service requests, and to download updates, Oracle Solaris images, and updates to the product software itself. When an update is requested, the Enterprise Controller retrieves the software from the Knowledge Base or package repository. This default mode of operation is called Connected mode.

If your site policy does not permit an Internet connection, you can operate the software in Disconnected mode. In this mode, you must load and maintain the Knowledge Base and package repository data and updates in the Enterprise Controller. For Oracle Solaris and Oracle Linux operating systems, Oracle Enterprise Manager Ops Center provides a script that you run on a system that is connected to the Internet to retrieve the contents of Oracle's Knowledge Base and then you upload the baselines and updates to the Enterprise Controller. For other information, you can upload the information as local content.

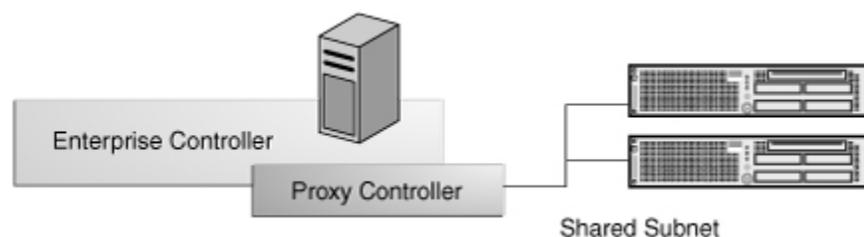
## Proxy Controller

Proxy Controllers distribute the operation load and provide fan-out capabilities to minimize network load. The Proxy Controller can also be used to provide a network presence behind a firewall or to provide access to a private network. A Proxy Controller links the managed assets to the Enterprise Controller and performs operations that must be located close to the managed assets, such as operating system provisioning. Proxy Controllers perform management operations on assets and reports the results to the Enterprise Controller. The actions required to manage, provision, and update assets are handled as a queue of jobs.

You must have at least one Proxy Controller. When you install the Enterprise Controller, a Proxy Controller is automatically installed on the same system.

Figure 1–4 is a diagram of an Enterprise Controller and co-located Proxy Controller.

**Figure 1–4 Co-located Proxy Controller**



Although the co-located Enterprise Controller and Proxy Controller deploys a working Oracle Enterprise Manager Ops Center solution, most sites benefit from using multiple Proxy Controllers. The preferred method is to install one or more remote Proxy Controllers on separate machines.

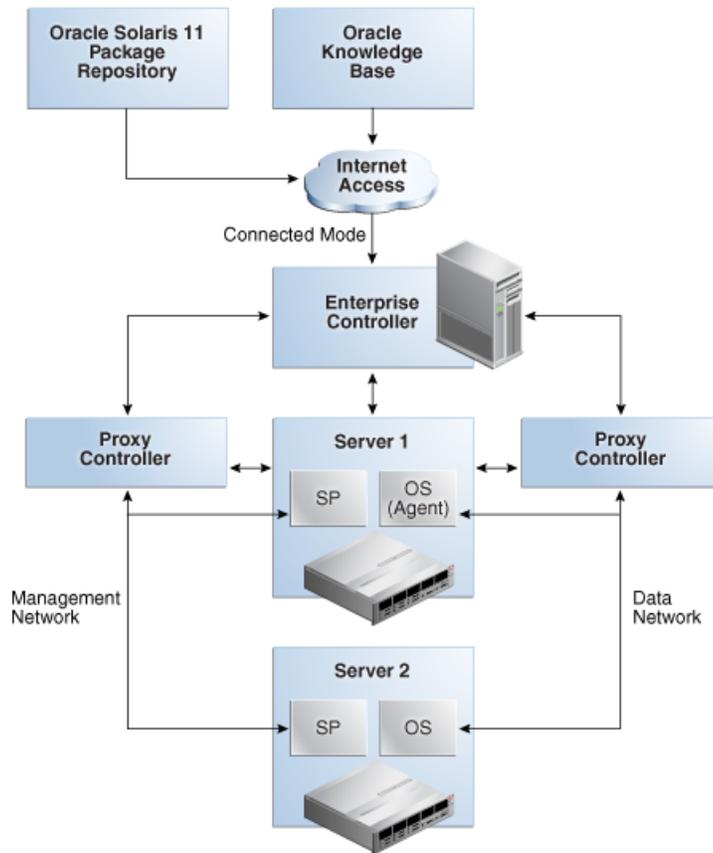
The following are some of the benefits of using remote Proxy Controllers:

- Enhanced performance and scalability.
- Some assets are in remote locations and you want to maintain performance.
- You anticipate creating multiple jobs that will run concurrently.
- Some assets are behind a firewall and need their own Proxy Controller.

- Some assets are on their own subnets and need a Proxy Controller on the same subnet for operating system provisioning. For provisioning an operating system like Oracle Solaris 11 SPARC and Oracle Solaris 10 SPARC Solaris Flash Archive (flar), that uses WAN boot, DHCP is not required. You can provision the operating system on wide area network or across subnets.

In [Figure 1-5](#), one Proxy Controller is designated for the Management Network and another Proxy Controller is for the Data Network. The illustration shows how you associate one Proxy Controller with the managed service processors and associate another Proxy Controller with the operating systems.

**Figure 1-5 Complex Deployment**



## Agent Controllers

Physical and virtual Oracle Solaris and Oracle Linux operating systems require agent software to perform many functions, such as creating update reports, creating and using system catalogs, and managing Oracle Solaris 9 and Oracle Solaris 10 boot environments. Some monitoring and Analytics data also require an agent-managed operating system. However, you can use many of the monitoring and management features without installing an Agent Controller on the operating system.

The Agent Controller is a lightweight Java software that identifies the asset and responds to Proxy Controller. When an operating system is agent-managed, the agent receives the command from its Proxy Controller, performs the required action, and notifies the Proxy Controller of the results. When an operating system is agentlessly managed, the Proxy Controller uses SSH (Secure Shell protocol) to perform tasks and

to monitor the operating system. You can change the method of managing an operating system asset.

Hardware management does not require the Agent Controller. Instead, a Proxy Controller runs commands on the hardware system and reports the results to the Enterprise Controller.



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## Key Features and Capabilities

This chapter contains a brief overview of some features and capabilities of the Oracle Enterprise Manager Ops Center software. The *Oracle Enterprise Manager Ops Center Feature Reference Guide* contains in-depth information on these and other features:

- [Overview](#)
- [Asset Monitoring and Incident Management](#)
- [Server and Hardware Management](#)
- [Operating Systems Management](#)
- [Network Management](#)
- [Virtualization Management](#)
- [Storage Management](#)
- [Cloud Management](#)
- [Oracle Engineered Systems Management](#)
- [Resources](#)

### Overview

Oracle Enterprise Manager Ops Center offers comprehensive system management for physical and virtual Oracle hardware and heterogeneous operating systems. The Oracle Enterprise Manager Ops Center software is designed to monitor, patch, provision, virtualize, and support operating systems, virtualization technologies, Oracle servers, storage, and networks from a single user interface.

Use the discovery feature to add assets to the user interface. The software begins monitoring the assets when you discover and add them to the UI.

Oracle Enterprise Manager Ops Center enables you to easily customize many management functions. When you add assets, they are also added to pre-defined groups, such as Servers and Linux Operating Systems. You can create customized groups and rules that place newly discovered assets in these groups. These groups enable you to apply changes or create reports to multiple assets at the same time.

Reusable profiles and plans enable you to define the actions, images, and configurations for tasks, such as installing a server or creating an Oracle VM Server for SPARC system and guests. You can reuse the profiles and plans to quickly and consistently perform a task. Specialized plans, called operational plans, enable you to run your custom scripts as part of a larger plan or as an individual plan. Use operational plans to apply your customized configuration options or to resolve an incident.

Oracle Enterprise Manager Ops Center software is designed to help you manage and maintain your datacenter. For details on the features and capabilities described in this document, other features, and examples, see the *Oracle Enterprise Manager Ops Center Feature Reference Guide* and other documentation that is located in the Oracle Enterprise Manager Ops Center documenting library at [http://docs.oracle.com/cd/E40871\\_01/index.htm](http://docs.oracle.com/cd/E40871_01/index.htm)

## Asset Monitoring and Incident Management

Monitoring detects components or attributes of a managed resource of Oracle Enterprise Manager Ops Center that are not operating within specified parameters.

Monitoring rules and policies define the monitoring parameters and are the main components of a complete monitoring configuration. Default monitoring policies contain a set of rules that are automatically applied to managed resources. You can change the alerting conditions for all assets, or create special rules for a group of assets that are more critical for your day-to-day operations.

The software uses a help desk approach to manage the incidents in your data center. All open incidents appear in the Message Center. New alerts update an open incident. You can assign incidents to others for resolution, add comments, provide a list of possible causes and impacts, provide recommendations, add utilities or scripts to resolve an issue, and view progress. You can build an Incident Knowledge Base that contains your annotations from specific incidents, or add suggested fixes or automated fixes for a specific type of incident. You can create an Incident knowledge base to store recommended solutions or to add annotations that run scripts to resolve commonly known incidents.

Incident Reports enable you to view a summary of all alerts and incidents for a specified category, such as alarm state, alarm owner, asset type, date range, severity levels, and affected asset groups. The reports also include an audit trail for state-change annotations, alert annotations, suggested-fix annotations, comment annotations, operation annotations. The Reports chapter in the *Oracle Enterprise Manager Ops Center Feature Reference Guide* defines all of the available reports, and how to create report templates and reports.

When you cannot resolve an incident, you can use the information in the asset's summary and dashboard pages to quickly file a service request. Instead of manually filing a service request, you can enable the Auto Service Request (ASR) feature to automatically open a service request for a critical incident. The software populates the service request with the asset details, the Customer Service Identifier (CSI) associated with the asset, and adds an annotation to the incident to indicate the status of the ASR creation. Once they are created, ASRs are identical to other service requests and can be viewed and managed using the same processes and tools. You can view auto service requests in the Oracle Enterprise Manager Ops Center UI or with the traditional service request processes and tools.

## Server and Hardware Management

Oracle Enterprise Manager Ops Center facilitates complete management for supported Oracle servers and hardware, including the new generation of Oracle servers.

You can install and update system component firmware for a variety of service processors for a single system, or a group of systems.

Monitor the hardware status, view system details, service processor connectivity details, incidents, service requests, jobs and other details. Enter your energy expenses

to begin tracking energy utilization for ILOM x64, ILOM CMT, M-Series servers, chassis and the power budget of ILOM 3.0 systems.

Use the Firmware Report to maintain consistent firmware versions across your managed hardware. The Firmware Report feature compares the firmware images specified in a firmware profile to the firmware images installed on your hardware. Use the System Information Report to obtain the information on assets such as operating system, server, chassis, logical domains, global zone, non-global zone, and M-Series server. See the Reports chapter in the *Oracle Enterprise Manager Ops Center Feature Reference Guide* for more about firmware and system reports.

## Operating Systems Management

Oracle Enterprise Manager Ops Center facilitates lifecycle management for your Oracle Solaris and Linux operating systems, including installing, updating (patching), upgrading, and monitoring your Oracle Solaris and Linux operating systems.

Use the software libraries, profiles, and plans in Oracle Enterprise Manager Ops Center to consistently provision, update, or upgrade a specific operating system release or package with your defined configuration on a discovered and managed hardware asset. Details for software libraries, profiles, and plans are in the *Oracle Enterprise Manager Ops Center Feature Reference Guide*.

### Install and Provision Operating Systems

You create reusable OS Provisioning and OS Configuration profiles to define how to install the software. The OS Provisioning profiles define the OS image or package and basic OS configuration and boot network information. The OS Configuration profiles define the networking configuration, including advanced networking configurations for Oracle Solaris. You can mix and match compatible OS Provisioning and OS Configuration profiles in OS Provisioning Deployment Plans. A plan defines the profiles to use and the targets to provision. When you apply a plan, you provide a specific IP address and have the option to make changes to the network and interface for the target. You can apply the plan immediately, or schedule the plan to provision the operating system during off-peak times without your intervention.

### Update and Upgrade Operating Systems

Similar to OS provisioning, the software uses OS Update profiles and plans to standardize how you perform updates and upgrades. You use Update Profiles and deployment plans to define which components or packages to install and the level of automation during the installation. You can simulate an update job, update an operating system immediately, or schedule the update job to run later.

A variety of OS reports enable you to easily maintain your supported operating systems, determine if an asset has the latest updates and packages and to apply updates to a group of assets. Use the Reports feature to check for security advisories. For example, the Common Vulnerability and Exposure (CVE) report identifies systems that might have security vulnerabilities.

### Monitor Operating Systems

Monitor operating system status, view operating system details, utilization (such as CPU, memory, and network utilization), associated zones, incidents, storage and Oracle Solaris boot environments. Use the OS Analytics feature to track, evaluate, and improve the performance of supported operating systems and zones. The charts, reports, and utilization data provide details of an individual operating system or zone.

## Network Management

Networks are the discovered and managed IP subnets. Oracle Enterprise Manager Ops Center manages network resources, from the physical to the virtual. Fabrics provide the physical infrastructure and network domains provide the logical infrastructure. Networks are created from the resources of a network domain. Oracle Enterprise Manager Ops Center supports Ethernet and InfiniBand network protocols.

After a network is discovered, you can perform the following tasks:

- Discover and manage switches
- Add fabric to a network domain
- Create network domains to support specific purposes.
- Create public networks and private networks to support virtualization hosts and virtual datacenters.

## Virtualization Management

In Oracle Enterprise Manager Ops Center, you can create and manage the virtualization hosts that provide the physical resources for creating guests. These options require access to storage and networks.

The supported virtualization technologies are:

- [Oracle Solaris Zones](#)
- [Oracle VM Server for SPARC](#)

System Information Reports provide information on assets, including logical domains and zones.

### Oracle Solaris Zones

Oracle Solaris Zones enable you to virtualize operating systems on SPARC and x86 platforms. A zone is a virtualized operating system environment created within a single instance of the Oracle Solaris operating system. Each zone provides an isolated and secure environment for running software applications.

Oracle Enterprise Manager Ops Center provides lifecycle management of zones from a unified user interface. You can discover and manage existing zones, create zones, view zone analytics, and perform operations such as booting and shutting down a zone. You can create server pools for your zones, enabling you to migrate zones between different operating systems to provide load balancing. You can configure the software to automatically balance the load, or you can manually balance the load. Beginning with 12.2.2, you can disable Automatic Recovery at the server pool level or the zone level. You can also limit the number of attempts to recovery an asset.

### Oracle VM Server for SPARC

Oracle VM Server for SPARC is virtualization of SPARC servers. You can create and manage multiple virtual machine instances simultaneously on a single SPARC machine. Each virtual machine, or guest, can run a different operating system. To extend virtualization further, you can create zones on your virtual machines.

With Oracle VM Server for SPARC, you can allocate the various resources of the system such as memory, CPU threads, and devices, into logical groupings and create multiple discrete systems. You can either select to allocate the CPU resource to a logical domain as CPU Threads or whole-core. When you specify to allocate a core to a

logical domain, all the CPU Threads in the core are allocated to the logical domain. You can also limit the number of maximum number of whole-core to be allocated to the domain. You can edit the configuration of the logical domain and switch back and forth from virtual CPU to whole-core CPU.

You can discover and manage existing Oracle VM Server for SPARC systems, or you can use Oracle Enterprise Manager Ops Center to create logical domains and install the Oracle Solaris OS on them.

A logical domain is a virtual machine that has its own operating system and identity within a single SPARC server. You can create, reconfigure, reboot, and destroy a logical domain independently, without requiring the server to be powered off. You can run a variety of applications in different logical domains to keep them independent for performance and security purposes.

You can create logical domains with the following roles: Guest Domains, I/O Domains, Root Domains, and HA Guest Domains.

- **I/O domains** have direct access to physical I/O devices such as PCIe Controller or Endpoint Devices.
- **Root domains** also have direct access to physical I/O devices such as PCIe Root Complex.
- **Guest domains** have access to virtual devices, such as virtual disks and virtual network interfaces.
- **HA guest domains** have access to virtual devices, have at least two network connections, and have redundant access to virtual disk storage to provide high availability.

Beginning with 12.2.2, the software detects when a logical domain is in a delayed reconfiguration state. A message in the center pane is visible to all logical domains attached to the affected control domain. You can cancel the delayed reconfiguration in the control domain, or a PCIe root domain (if supported.)

As with hardware and OS management, virtualization management uses profiles and plans to help you to reduce the complexity of using virtualization technology and provides a method of consistently creating new virtual hosts.

### SR-IOV Enabled Networks

Single Root I/O Virtualization is a PCI-SIG standard specification that enables efficient use of PCIe devices. A single PCIe card owned by a PCIe root complex is made to physically appear in multiple domains simultaneously. A virtual machine shares a single I/O resource also known as physical function. A physical function is a PCIe device that is SR-IOV enabled and with the appropriate hardware and OS support can appear as multiple, separate physical devices, each with its own configuration space. Each physical function can have up to 64000 virtual functions associated with it. You can directly assign a virtual function to a logical domain.

An SR-IOV enabled network interface has virtual functions created on the physical function. You can connect to a network using an SR-IOV enabled network interface and assign the virtual functions to the logical domains. SR-IOV enabled networks are available from the Control Domain and Root Domain. If you assign a PCIe card to an I/O domain, then the SR-IOV feature is not enabled.

## Storage Management

Oracle Solaris Zones, Oracle VM Servers for SPARC, Oracle VM Servers for x86, their server pools, and virtual datacenters store their metadata and their operational data in storage libraries.

Use Oracle Enterprise Manager Ops Center to create and modify storage libraries and change the storage capacity. Manage and monitor storage servers and appliances, discover and provision storage capacity on these appliances, and then make the storage available to virtual assets through its storage libraries.

- **Opaque storage:** When Oracle Enterprise Manager Ops Center discovers a virtualization host or virtual host that uses storage that is not backed by a managed asset, Oracle Enterprise Manager Ops Center can identify the virtual disks used by the host and can share them with other hosts of the same type.
- **Multipath storage:** You can create more than one path from a logical domain to its storage to ensure that the logical domain continues to operate if one path is not accessible. Using multiple I/O Domains provides this redundant access.

## Cloud Management

Create and manage a virtual datacenter, or vDC. By consolidating your virtualization servers, storage, and network resources, you can optimize resource utilization.

Oracle Enterprise Manager Ops Center provides the platform to consolidate the physical resources (virtualization servers, storage, and network) in your data center, enabling you to build and operate your cloud services.

The software provides a comprehensive management solution to deploy, configure, and manage the virtualization servers, storage resources, and network fabrics. You can deploy these features as an Infrastructure-as-a-Service (IaaS) cloud platform service model in Oracle Enterprise Manager Ops Center.

The IaaS cloud platform service is available as vDC Management. Virtual Datacenter or vDC is a collection of server pools that share common storage and network resources. A cloud administrator sets up the infrastructure and provides access to cloud users. The cloud users use the allocated resources to create guests and install operating systems, deploy applications, monitor, and manage the applications. The cloud user logs into the Oracle Enterprise Manager Ops Center user interface to view and manage their applications.

A cloud user can perform the following actions to use and manage the allocated resources in a vDC account:

- View account quotas and virtual resources
- Create and manage vServers
- Create and manage virtual networks
- Create and manage snapshots
- Create and manage volumes
- Create and manage server templates

See the Virtual Datacenters chapter in the *Oracle Enterprise Manager Ops Center Feature Reference Guide* and the *Oracle Enterprise Manager Ops Center Cloud Infrastructure API and CLI Reference Guide* for details on using the Cloud feature.

## Oracle Engineered Systems Management

Oracle Engineered Systems is a complete set of integrated hardware and software designed to reach a predetermined level of capability, capacity, and scale. Oracle Engineered Systems provide optimized pre-defined hardware and software. As the hardware and software are engineered together for a complete system, there are multiple opportunities to improve the overall system performance.

Oracle Enterprise Manager Ops Center can be installed on Oracle Engineered Systems. You can manage the system using an Oracle Enterprise Manager Ops Center instance. You can also manage multiple Oracle SuperCluster systems and other assets in the datacenter directly from a single Oracle Enterprise Manager Ops Center instance. Use Oracle Engineered Systems reports to view the rack setup for each of the rack within the system, including the asset details related to the rack. These reports also provide information about your assets, such as job history, firmware, operating system updates, and incidents.

You can use Oracle Enterprise Manager Ops Center to monitor and manage the following Oracle Engineered Systems:

- [Oracle SuperCluster](#)
- [Oracle Exadata](#)

### Oracle SuperCluster

Oracle SuperCluster is 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.

You can use the software to manage the following Oracle SuperCluster systems:

- [Oracle SuperCluster M6-32](#)
- [Oracle SuperCluster T5-8 and T4-4](#)

#### **Oracle SuperCluster M6-32**

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

#### **Oracle SuperCluster T5-8 and T4-4**

The Oracle SuperCluster T5-8 and Oracle SuperCluster T4-4 are Oracle Engineered Systems which integrate SPARC compute nodes, a Sun ZFS Storage Appliance, InfiniBand switches, PDUs, and Exadata Storage Servers into a multi-rack system.

### Oracle Exadata

Oracle Exadata is a database appliance with support for both OLTP (transactional) and OLAP (analytical) database systems.

The Exadata Storage Server provides storage for an 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. In the same way that you view an Oracle SuperCluster system and its rack, you can also view the Exadata Storage Servers.

## Resources

Our documentation library includes installation guides, an administration guide, reference materials, and examples to guide you through Oracle Enterprise Manager Ops Center. The documenting library is located at [http://docs.oracle.com/cd/E40871\\_01/index.htm](http://docs.oracle.com/cd/E40871_01/index.htm)

For additional details about features, see the *Oracle Enterprise Manager Ops Center Feature Reference Guide*. For workflows and end-to-end examples about how to use the software to perform an operation, see the [Deploy How Tos](#) tab and the [Operate How Tos](#) tab in the library. The *Oracle Enterprise Manager Ops Center Command Line Interface Guide* contains information about the command-line interface.

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## Exploring the User Interface

Oracle Enterprise Manager Ops Center is an enterprise-level datacenter software that manages all the aspects of data center. Oracle Enterprise Manager Ops Center displays its information in a browser interface. The format of the information is in text, tables, graphs, and charts, and is organized into hierarchies and tabs. You can view the information and perform the actions according to the role you have been assigned.

This chapter includes the following sections:

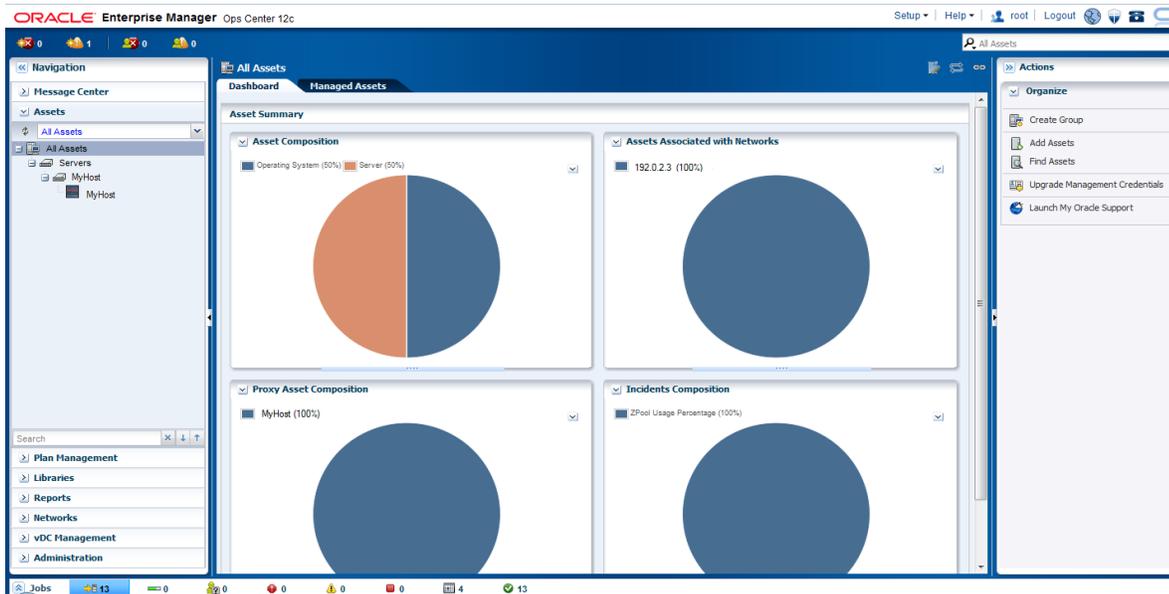
- [Overview of the User Interface](#)
- [Status of Your Session](#)
- [Message Center](#)
- [Navigation Pane](#)
- [Center Pane](#)
- [Actions Pane](#)
- [Jobs Pane](#)
- [Searching in Oracle Enterprise Manager Ops Center](#)
- [Establishing Your Account Preferences](#)

### Overview of the User Interface

The user interface has a rich set of features that enable you to observe and control your datacenter's assets. These features present a range of information from a high-level overview of your datacenter to the low-level details of a specific asset. You can view the information in the center pane according to your selections made in the Navigation pane and in the Actions pane.

[Figure 3-1](#) shows the user interface of Oracle Enterprise Manager Ops Center.

**Figure 3–1 User Interface of Oracle Enterprise Manager Ops Center**



Oracle Enterprise Manager Ops Center comprises of five panes:

- The Masthead: This pane displays the global functions and information about the Oracle Enterprise Manager Ops Center instance.
- The Navigation pane: This pane displays several sections like Message Center, Assets, Plan Management, Libraries, Reports, Networks, vDC Management, and Administration.
- The Actions pane: This pane displays the actions that operate on the object currently selected in the Navigation pane. The actions of the Actions pane are enabled or disabled based on the state of the object or your role.  
Only actions that are directly applied to the object are displayed in Actions pane.
- The Jobs pane: This pane displays the number of jobs in Oracle Enterprise Manager Ops Center, categorized by the status of respective jobs.
- The Center pane: This pane displays detailed information of the object that is currently selected in the Navigation pane.

For incidents, hover your mouse over the incident icons in the upper left corner of the user interface to display more information about the incidents.

## Status of Your Session

Oracle Enterprise Manager Ops Center displays the following icons in the title bar. To view information about the status of your session, click the icons displayed in the title bar.

Figure 3–2 shows the icons of the title bar in the user interface of Oracle Enterprise Manager Ops Center.

**Figure 3–2 Icons in the Title Bar**



- Setup: Sets roles and preferences for the user.

- **Help:** Opens help for Oracle Enterprise Manager Ops Center to provide an aid that is necessary to accomplish a task or satisfy a need.
- **Your Account:** Describes your account details and information.
- **Logout:** Logs you out of the application.
- **Status of Internet Connection:** Indicates whether Oracle Enterprise Manager Ops Center is connected to Internet access.
- **Status of Knowledge Base Service:** Indicates whether Oracle Enterprise Manager Ops Center is connected to Knowledge Base Service to obtain the latest operating system updates from My Oracle Support.
- **Status of My Oracle Support Services:** Indicates whether Oracle Enterprise Manager Ops Center is connected to My Oracle Support. You must enter a valid My Oracle Support (MOS) credential to be connected.

For more information about My Oracle Support credential, see My Oracle Support Account at the following website:

<https://support.oracle.com>

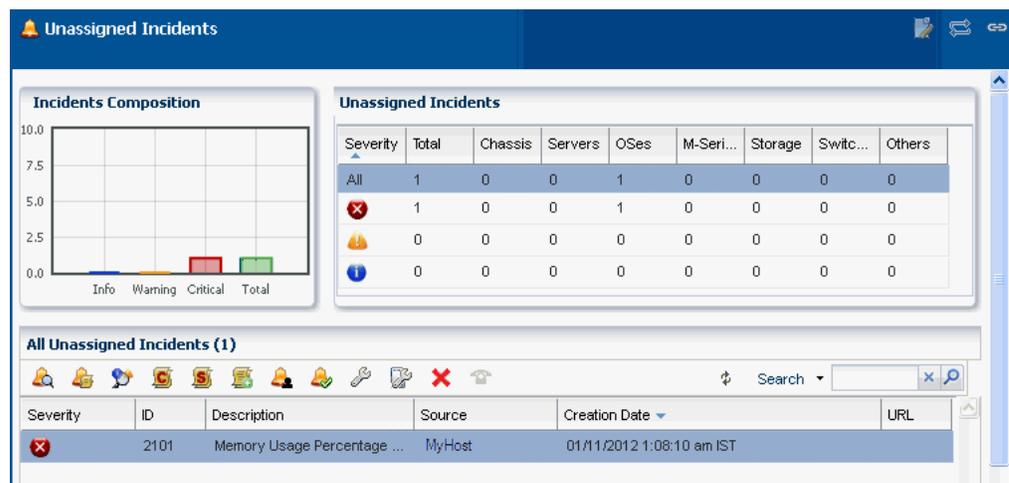
## Message Center

Oracle Enterprise Manager Ops Center displays incidents, generates notifications, displays service requests that are generated with the ASR feature in Oracle Enterprise Manager Ops Center, and the warranty information of an asset.

You can view details about unassigned incidents in the Unassigned Incidents queue in the Message Center. The Message Center displays the composition of incidents, the severity level for different types of assets with the severity status icon. It displays all unassigned incidents with Severity, Incident ID, Incident Description, Incident Source, Incident Creation Date, and URL. Hover your mouse on an unassigned incident to view details such as Duration, Assigned Date, Suggested Actions, Owner, Source and so on.

Figure 3–3 shows the unassigned incidents in the Message Center.

**Figure 3–3 Unassigned Incidents in Message Center**



You can view incidents that are assigned to you in the My Incidents queue of the Message Center. A bar chart in the Incidents composition section displays the number

of new incidents by severity. The page also displays a table that categorizes the incidents by severity and type of asset. You can select an incident in the All My Incidents section to perform the following operations.

- **View Alerts:** View the alerts that comprise an incident.
- **View Annotations:** View all comments and notes created by alerts and any operation related to the incident. You can also view any suggested actions associated to the type of incident.  

You can edit or delete the annotations that you have created. An administrator has the privileges to edit or delete any annotation.
- **View Possible Impacts and Causes:** View the possible causes and impacts of an incident.
- **View Comments:** You can view all comments associated with the selected incident. You can also add a comment to an incident.
- **View Suggested Actions:** You can view all actions in the Incident Knowledge Base that are related to the incidents, and any actions entered specifically for the incident through Add Annotation. To include the suggested action in the Incident Knowledge Base, select the check box "Save this annotation in the Incident Knowledge Base to associate the annotation with all incidents of this type and severity".
- **Assign Incidents:** You can assign one or more incidents to the user. The table enables multiple selection of incidents to be assigned to the user.
- **Add Annotation to Incidents:** You can add a comment or a suggested action to one or more incidents. When you add a suggested action, you can add an associated Operational Plan to the suggested action. Then save and execute it.
- **Acknowledge Incident:** Acknowledging an incident changes the state of one or more incidents to Acknowledged to indicate you are investigating. This action relocates the selected incidents to the My Incidents category.
- **Take Action on Incidents:** Indicates that you can take appropriate action on one or more incidents of the same type, with the same attribute.
- **Mark Incidents as Repaired:** It moves the state of one or more incidents to "Being Repaired". When an incident is in a state of "Being Repaired" no actions should be taken upon it.
- **Close Incidents:** When you close an incident, the continued monitoring creates a new incident.
- **Open Service Requests:** Opens a service request for the incident. You must be connected to My Oracle Support through the user interface to open a service request.

Similarly, you can view the incidents that are assigned to others by clicking Incidents Assigned to Others.

Message Center facilitates in viewing all your open service requests. You can view the service requests that are opened by others.

Oracle Enterprise Manager Ops Center generates notifications for all event operations and when the set thresholds are exceeded. Message Center lets you delete a selected notification or delete all notifications.

Below the title bar, a set of icons summarizes the Incident status, as shown in [Figure 3-4](#). The icons from the left are Unassigned Critical Incident, Unassigned Warning Incident, All Relayed Incident, My Critical Incident, and My Warning

Incident. The number next to each icon indicates the count of incidents for the particular status. Hold or hover the mouse cursor over the icon to view information that identifies the most recent incident. These icons keep you updated of the incident status while you perform other operations. [Figure 3–4](#) shows the incidents count in the masthead of Oracle Enterprise Manager Ops Center. These icons appear at the top of the Navigation pane in the user interface.

**Figure 3–4 Incidents Count in the Masthead**



To view more information about the incidents, click these incident icons. They redirect you to the corresponding category in the Message Center. For example, clicking the Unassigned Warning Incident icon below the title bar redirects you to Message Center and displays detailed information about those number of Warning Unassigned Incidents in the center pane. Similarly, when you click Unassigned Critical Incident, it redirects you to Message Center and displays detail about the Critical Unassigned Incidents. From here double-click the selected incident to view details such as Summary, Membership Graph, Status, Compliance Reports and so on. For more information about Incidents, see *Oracle Enterprise Manager Ops Center Feature Reference Guide*.

## Navigation Pane

The Navigation pane contains the following sections:

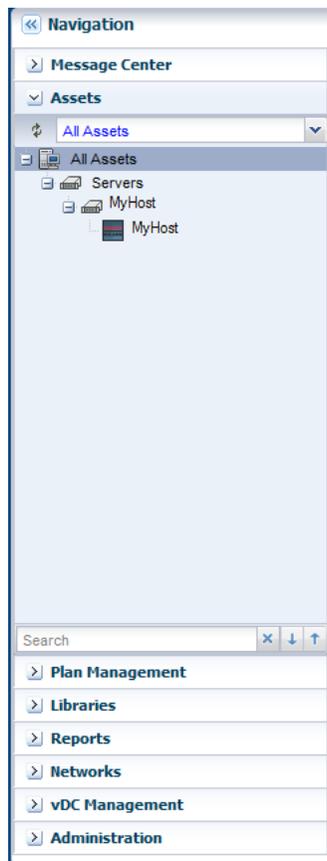
- **Message Center:** Message Center displays and manages incidents, generates notifications, displays service requests, and the warranty information of an asset.
- **Assets:** Assets list all the assets of Oracle Enterprise Manager Ops Center. Assets display standard views, user-defined groups, and resource management views. In the case of server pools, Assets also governs the virtualization hosts' placement and migration, and the server pool's networks and storage.
- **Plan Management:** Plan Management displays Deployment Plans and Profiles that install, provision, and update one or more servers in Oracle Enterprise Manager Ops Center. It also displays Monitoring Policies, Operational Plans, Incidents Knowledge Base, and the credentials that are used in Oracle Enterprise Manager Ops Center.
- **Networks:** Networks display all the networks that are discovered, declared, and created in Oracle Enterprise Manager Ops Center. It also displays discovered fabrics.
- **Libraries:** Software libraries stores images and operating system updates components (policies and profiles). Storage libraries list different NAS, iSCSI, and FC storages that are known to Oracle Enterprise Manager Ops Center.
- **Reports:** Reports lists the various types of reports that you can create, such as Operating System Reports, Incident Reports, and Firmware Reports.
- **vDC Management:** vDC Management contains and manages a set of physical resources, and makes them available as virtual resources to virtual datacenter accounts.

- Administration: Administration performs administrative functions, such as user administration, logs, and the status of service, including the version and upgrades available for the Agent.

Only the Administrator of Oracle Enterprise Manager Ops Center can access the Administration section. The administrator can change any configuration for the Enterprise Controller, Proxy Controllers, LDAP directories, users, and so on.

Click the right-arrow next to the section title to open the section and see its available resources and options. You can open only one section at a time. [Figure 3-5](#) shows the Assets section of the Navigation pane.

**Figure 3-5 Assets Section of Navigation Pane**



When a new asset is discovered, or when a job or a task is completed, the information changes in Oracle Enterprise Manager Ops Center, and the user interface refreshes automatically. When you do not see the new asset in the Assets pane, click the Refresh symbol in the Asset section of the Navigation pane to get the latest lists of assets. Similarly, click the Refresh symbol in the Jobs pane to view the latest list of jobs.

Oracle Enterprise Manager Ops Center manages the Asset section of the Navigation pane that lists all the assets grouped by its type. You can choose one of the following views to see the lists of assets.

- Standard Views: Use the All Assets view to display all managed assets of every type. To filter the view to display one type of asset, use one of the other standard views: Operating Systems, Chassis, and Servers. Click the plus symbol to expand the associated assets.

- Resource Management Views: Use Resource Management View to filter the assets in the form of Server Pools, Storage, Racks, Oracle Solaris Cluster, and Oracle Engineered Systems.
- User Defined Groups: Use the User Defined Group to filter the assets according to user definitions. When you create a group, this customized list becomes the new default view. A list shows a hierarchy of assets.

An icon represents the status of each asset. These icons distinguish one type of asset from another type. A quick scan of the asset hierarchy displays the servers that have a Linux operating system or an Oracle Solaris operating system, and also finds any unconfigured assets.

In an Asset hierarchy, an incident associated with an asset is notified by a **badge** that appears next to the asset icon. Badges show the current status of each asset like running, shutdown, locked, and suspended. When the incident is of a high priority in the membership group, the badge appears next to the parent asset in the asset hierarchy. The system removes the badge after the incident is acknowledged, marked repaired, or closed.

For more information about Badge icons, see [Appendix A, "Icons."](#)

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**Note:** Badges are special types of icons that describe the type of incident associated with the asset.

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Along with the assets, the Navigation pane displays all other elements such as, plans and profiles, networks, libraries of images and data, reports, and administrative functions. Expand the right arrow on the title bar to view the hierarchy of these items.

The center pane displays information according to your selection in the Navigation pane. The center pane is where you do most of the work. To increase the size of the center pane, close the Navigation pane. Click the left double-arrow in the title bar of the Navigation pane, to collapse the pane. To select another asset, expand the Navigation pane again by clicking on the right double-arrow.

For example, when you select the Server node of Assets section in the Navigation pane, the center pane displays the information about the Managed Members, and Unmanaged Members. Under the Server node, when you select a server, the center pane displays information about the Server's Hardware, Incidents, Service Requests, Rules, Jobs, Configurations, and Summary details. When you select the Operating System in the Asset section of Navigation pane, the center pane displays the Analytics, Incidents, Terminal, Storage, Jobs, Configuration, and the Summary of the Operating System.

Similarly, when you select All Assets node in the Assets section, the Action pane displays options to create, find, and add assets. When you select Server in the Assets section, the Actions pane displays the related actions to Execute Operation, Edit Tags, Refresh and so on. Further selection of the operating system in the Assets section of Navigation pane displays operations related to the operating system like Creating New Boot Environment, Executing Operation, Attach New Network, Edit Tags, Edit Attributes, and so on.

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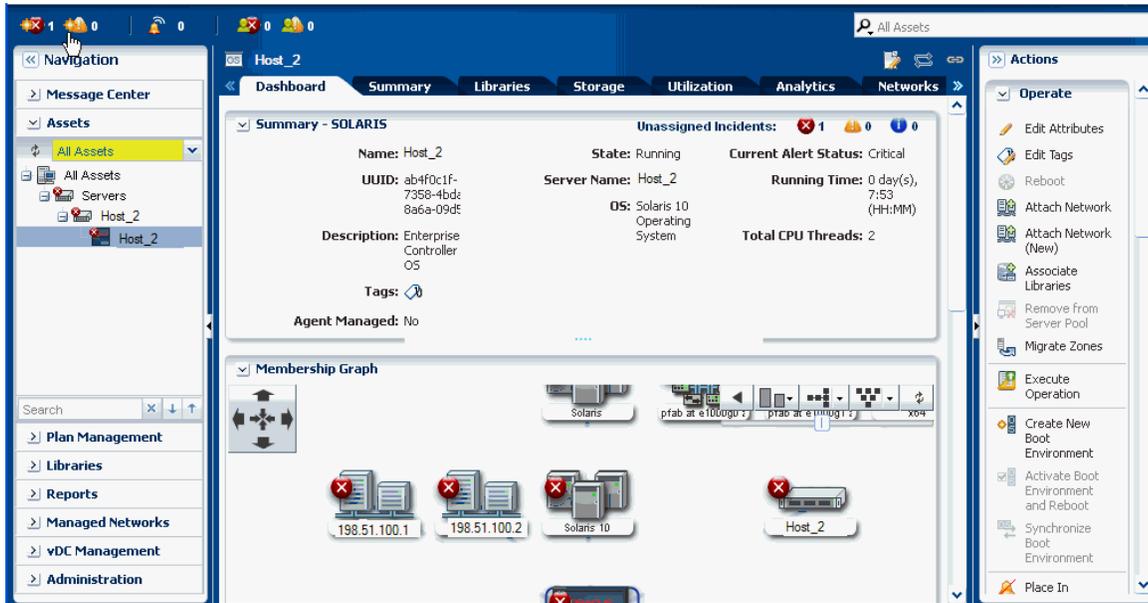
**Note:** The tabs and information displayed in the Center pane and the Actions pane change, depending on what asset is selected in the Navigation pane.

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Figure 3–6 shows the details of the assets that are displayed in the center pane of the user interface of Oracle Enterprise Manager Ops Center.

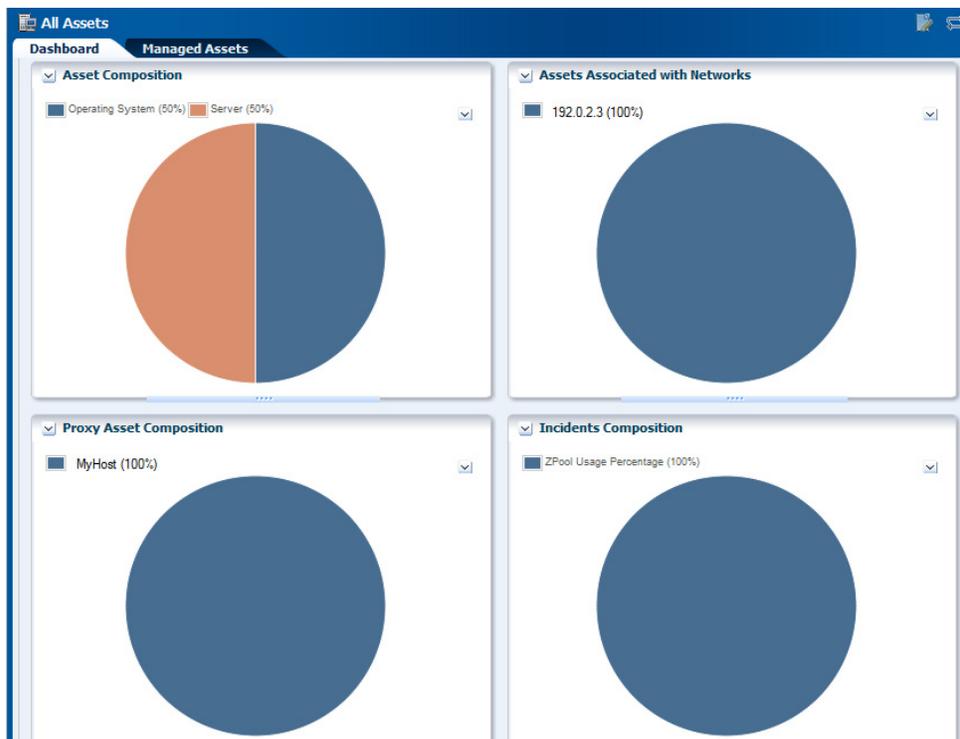
**Figure 3–6** Details of Asset Displayed in the Center Pane



## Center Pane

Center pane is the preliminary overview of the assets when no asset is selected in Oracle Enterprise Manager Ops Center. Each section represents the types of assets in a different type of chart. To identify the asset or asset type, hover the mouse on that portion of the chart. Figure 3–7 shows the pictorial representation of center pane.

Figure 3–7 Center Pane



Any selection in the Navigation pane changes the display in the center pane. For most types of assets, the center pane shows a dashboard of standard information about the selected asset, a Membership Graph that shows its relationships, and a status summary that includes information about the unassigned incidents.

Allow time for the information to finish loading in the Membership Graph, depending on the complexity of your selection. Use the scroll bars to view all the information. For some types of assets, you need to click the right double-arrow button to view all the tabs.

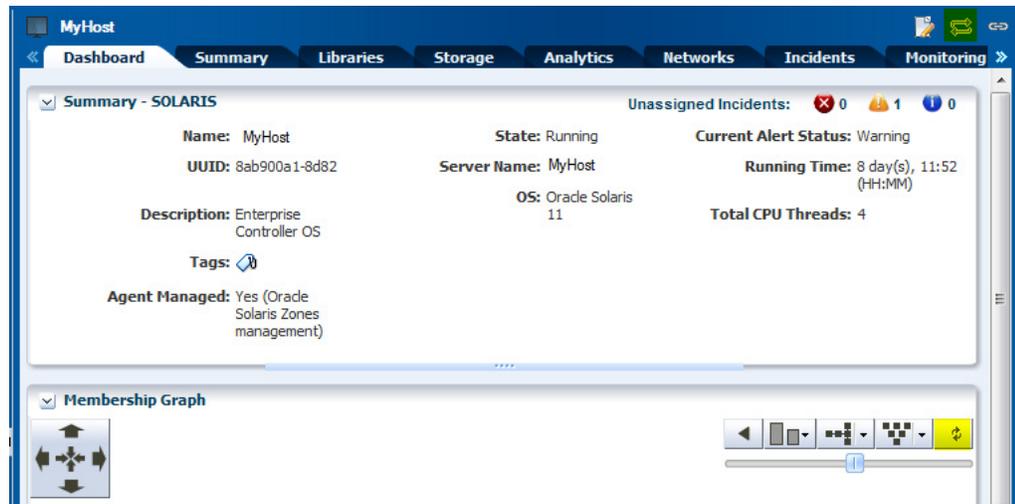
You can edit, and refresh the details of an asset that are displayed in the center pane. Click Edit icon to edit the summary details of the selected asset in the Summary tab of the center pane. Commit the changes by clicking the Save icon or Cancel to ignore any change. A pop-up message displays information about the successful commit in the application.

The center pane also has icons that perform an action on the selected item, depending on the section selected in the Navigation pane. These icons are View Alerts, Close Incidents, Open Service Requests, Add User, Manage User Roles and so on.

Some types of assets have additional sections such as Services, Status, Compliance Reports, and File Systems. You can collapse these sections to hide the display and to prevent the information from refreshing. Click the down-arrow in the corner of the section to hide the section. Click the resulting right-arrow to reveal the section.

Click the Refresh symbol in the upper-right corner of the center pane to view any new information.

Click the Refresh symbol in Oracle Enterprise Manager Ops Center when you want to get the latest information. The Refresh feature is available at all the drawers of the Navigation pane, center pane, Actions pane, and so on. Figure 3–8 shows the Refresh icon in the right side corner of center pane and in Membership Graph.

**Figure 3–8 Refresh Icon**

## Tabs

Some sections of the Navigation pane display their details in the form of tabs in the center pane. With your setting preference, you can set up any tabs in an object to be the default tab. Dashboard or Summary can be the default tab for those selected sections.

In case of assets selected as a section, the Dashboard tab displays a high-level overview of the asset. Every group and managed asset has a dashboard tab that provides a Summary, a Membership Graph, and the Monitoring status. The Dashboard tab displays additional information, depending on the type of asset selected in the section.

Dashboard enables you to customize your display preference by changing the position and height, or by collapsing or expanding any panel of the dashboard. The set preference is saved and used at the time of your next login. The same display preference is applied to other dashboards of the same type for other assets. For example, when you move the Status panel to the top for a dashboard of the selected server, at your next login, you find the Status panel at the same new location. When you select another server, you find the Status panel at the same new location of the dashboard.

When you select a group of assets, the Summary tab describes about all members of a group, and charts to identify the most active and least active members. To know more about the asset, click one of the tabs. Click the right double-arrow button to view the remaining tabs when there are too many tabs to fit into the center pane. Hold or hover the mouse over the value in the table to see its definition.

Charts are included in the Dashboard, Summary, and the Charts tab. Charts give access to the data collected by Oracle Enterprise Manager Ops Center for all the assets all the time. Hover the mouse over a portion of the chart to view the value it represents. On the Dashboard, you can hide the legend for a chart and the chart itself. Hide the legend when you want to see more details in the chart. Hide the entire chart to focus on another part of the center pane. Click the down-arrow button to hide and click the right-arrow button to show.

The Charts tab, display different types of charts. Right-click one of the charts to display a submenu of the following actions to customize the chart:

- Select to pick a point on the line and display its values.

- Zoom to concentrate on a portion of the chart.
- Move to change the location of the chart.
- 100% to restore the original chart.
- Select All
- Property to display a table of all the values in the chart. You can control the scope of the chart by increasing or decreasing the time period of the data collection.

You can export your chart data in one of the following formats:

- CSV
- XML

Select one of the following time period to export your chart data.

- Current View
- 6 months

The display of the tabs change in the center pane depending on the type of asset selected in the Navigation pane. For example, the display of tabs change in center pane when a hardware asset or an operating system is selected. Center pane displays some common tabs such as Dashboard, Monitoring, Jobs, and so on. On the selection of an asset in the Navigation pane, the center pane displays information about incidents in Incidents tab. You can view the alerts, incidents composition, and the unresolved incidents for the selected asset.

Administrating Enterprise Controller displays its information in various tabs like Summary, Configuration, Storage Libraries, Proxy Controller, and Logs.

You can select a template to view the template details or create a deployment plan from the templates tab in Plan Management. Existing Deployment Plans tab helps you in viewing a collection of profiles and plans that enables using the software to perform the tasks needed to maintain, monitor, and manage the infrastructure of your datacenter.

Oracle Enterprise Manager Ops Center uses libraries to store and manage cached data, images, packages, and metadata. It displays all its information through Summary, Usage, Disks, Incidents, and Monitoring tabs.

Networks describe about the network domains that are created. The Dashboard tab summarizes details about the network type, MTU, IP Range, Bandwidth, status of unassigned incidents, and recent incidents. The Network Details tab displays information about the Network IP, Netmask, Network Type, Network Name, and various other information about the network domain. Other tabs of Managed Network that provide more information about the network domain are IP Address Allocator, Network Services, Network Connections, Incidents, and Monitoring.

## Membership Graph

The Dashboard tab is the default display of the center pane, and the Membership Graph is a part of the Dashboard tab. The Membership Graph shows the relationships between the assets that are selected. Depending on what you select in the Navigation pane and on your datacenter's organization, the Membership Graph can have a single object or multiple objects. To control the view, you can use these options:

- Use the scroll bar for moving the display and bringing the assets in large graphs into view.

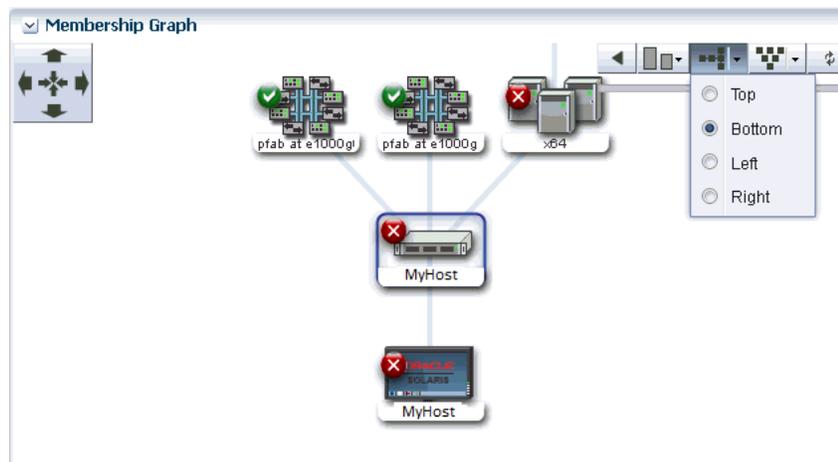
- Use view controls to relocate the Membership Graph left and right, and up and down. These view controls are two sets of arrows: four inward arrows and four outward arrows. Click one of the outward arrows to relocate the Membership Graph. Click one of the inward arrows to center the graph in the center pane.
- Use the orientation controls to change the orientation of the graph. The hierarchy can be presented from the top down or from the bottom up. If the hierarchy is flat and wide, a more convenient display might be to change to a horizontal display so that the top is now on the left or right. Click the left arrow to restore the display.
- Drill into the graph. When you choose assets or a group at the top of a hierarchy, the Membership Graph consolidates the display of the assets so that the graph is not unwieldy. Click in the graph to show the actual members.

Hover your mouse on the desired icon in the Membership Graph to view details about the type of asset like name, description, type, and tags. Double-click the icon in the Membership Graph to reach that asset in the Navigation pane and also view its detailed description in the Dashboard tab of center pane.

For an incident, the warning, and critical icons appear next to the asset. These icons also appear as a badge on the asset and the asset group in the Navigation pane.

[Figure 3–9](#) shows the pictorial representation of the Membership Graph.

**Figure 3–9 Membership Graph**



Click the Refresh icon in the upper right corner to refresh the Membership Graph.

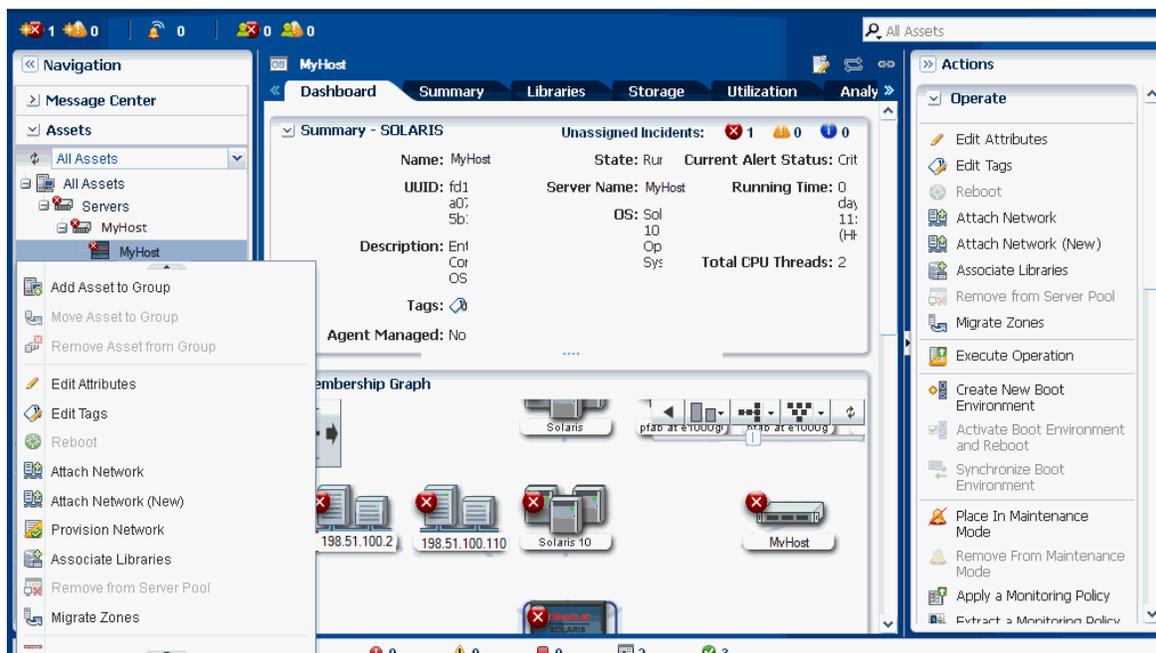
See the section [Establishing Your Account Preferences](#) for more information about setting the default display preferences for Membership Graph.

## Actions Pane

The Actions pane manipulate assets, and releases commands. Your selections in the Navigation pane or center pane change the display of operations in the Actions pane. Depending on the selection of asset in the Navigation pane, the set of available actions changes in the Actions pane. To see the available actions for an asset at any time without selecting it, right-click the asset in the Navigation pane. This is also convenient when the Actions pane is closed and only the icons for the actions are displayed.

[Figure 3–10](#) shows the pictorial representation for the available action icons for an asset.

**Figure 3–10 Available Actions Icons for an Asset**

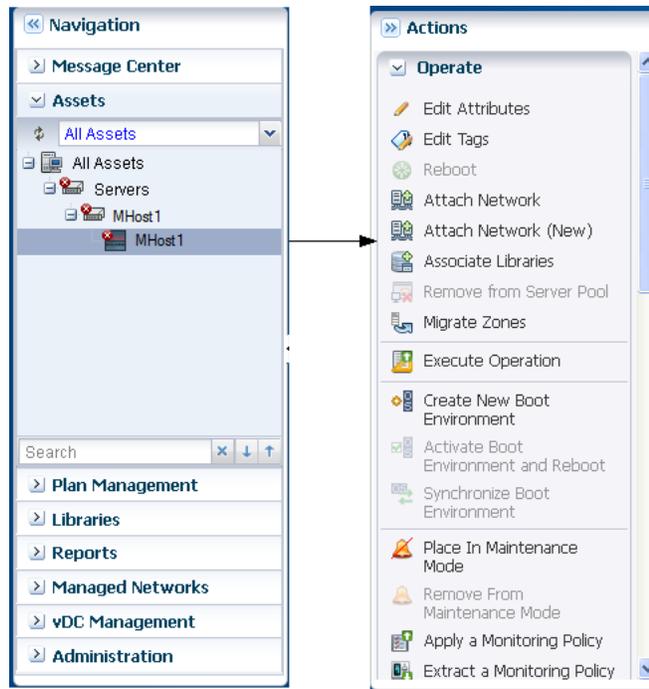


The Actions pane is further subdivided into four sections – Operate, Organize, Deploy, and Update. An action is unavailable only when:

- you have not selected an asset to perform that action. For example, to perform an action on a server's operating system you must select the operating system. The action is unavailable until you select the operating system asset that is listed under the server.
- your role does not permit the action.

The Actions pane help you run an operation, edit tags, place the asset in maintenance mode, organize an asset to defined groups, manage assets and installing and deploying a Server on the type of selection of an Asset.

At any time, when you are not running commands, you can increase the size of the center pane by hiding the Actions pane. In the Action pane's title bar, click the right double-arrow to collapse the pane. The icons for the available actions are displayed without text. Hover your mouse over the available action icons in the collapsed state to view the action names. To select another action, click its icon or expand the pane by clicking on the left double-arrow button to be able to select the names of the actions. [Figure 3–11](#) shows the actions for an asset.

**Figure 3–11 Actions for an Asset**

## Jobs Pane

Every action creates a job. The Jobs pane at the bottom of the user interface displays a count of all jobs according to the status of each job. To see the status type, hover the mouse over the Job icon. Some jobs have many steps. To view the progress of a job, select a job, and then click the View Job Details icon. [Figure 3–12](#) shows the Jobs pane with succeeded jobs and scheduled jobs.

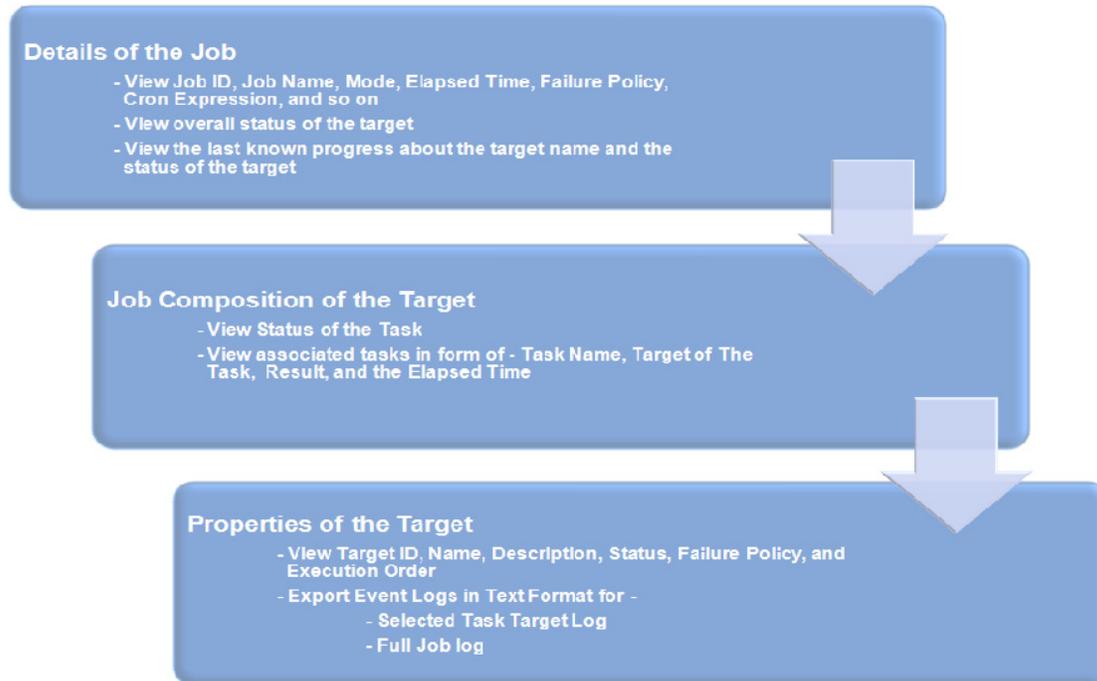
**Figure 3–12 Jobs Pane**

Status	Job ID	Job Type	Job Name	Mode	Owner	Start / Scheduled Date	Elapsed Time
✓	6	Create Predefined Ass...	-	→	[Ops Cen...	01/12/2012 10:54:44 am IST	00 hr, 00 min, 12 sec
✓	7	Configure-Local-Proxy	-	→	[Ops Cen...	01/12/2012 10:54:44 am IST	00 hr, 01 min, 13 sec
✓	3	Load-Templates	Refresh Te...	→	[Ops Cen...	01/12/2012 10:50:10 am IST	00 hr, 00 min, 54 sec
📅	5	Scheduled Product Met...	Product Met...	→	[Ops Cen...	01/12/2012 5:30:00 pm IST	-
📅	4	OCDoctor-Scheduled U...	OCDoctor...	→	[Ops Cen...	01/12/2012 4:30:00 pm IST	-

To know more information about a job, double-click a job. Click the right-arrow of Job Details to view a summarized information about Job ID, Job Name, Job Type, Mode, Failure Policy, Job Owner, and so on. You can view the Target Overall Status, Last Known Progress, and the Target Name. Jobs pane lets you re-run the selected failed target. Double-click the target to view all the associated tasks for that job. It displays Task Name, Target of The Task, Result, and the Elapsed Time. The status of the task is displayed as an icon. Double-click the task to view the task properties, and the event logs. Oracle Enterprise Manager Ops Center lets you export the logs of a job or a selected task target log in text format. Click the Refresh symbol at a desired point of time to refresh the user interface.

Figure 3–13 details out the steps of a job review.

**Figure 3–13 Reviewing a Job**



At any point of time, you can Stop a Selected Job, Delete a Job, Copy a Job, Answer Questions for a Job, and Debug a Job through OCODoctor.

Some actions create the job immediately but often, you must provide more information to specify the job. These actions start a wizard to guide you through creating a job. The last page of wizard displays a summary of your specifications before you submit a job.

Oracle Enterprise Manager Ops Center displays all types of jobs. You can filter the jobs in various categories and view them. You can view the Jobs In Progress, Jobs awaiting for User Input, Failed Jobs, Partially Successful Jobs, Stopped Jobs, Scheduled Jobs, and the Successful Jobs.

The other details of job includes Status, Job ID, Job Type, Job Name, Mode, Owner, Elapsed Time, and Start/Scheduled Date. Oracle Enterprise Manager Ops Center also provides a search facility for jobs on these details. The search functionality displays results according to your search criteria. You can click the Refresh icon to view the latest information for jobs.

The Jobs pane, when collapsed, displays the Status Icons, the Count for All Jobs, Jobs In Progress, Jobs Waiting For User Input, Jobs failed, Jobs Partially Successful, Jobs Stopped, Jobs Scheduled, and Jobs Successful.

## Searching in Oracle Enterprise Manager Ops Center

Oracle Enterprise Manager Ops Center provides various search options, such as:

- In the global search field, in the upper-right corner of the user interface, you can search for any Network, Storage Library, or Asset.
- In the Navigation pane, you can search for the asset. It highlights the first result in the asset navigation tree for your selection, and the Dashboard tab of the center pane displays information about the searched asset. Use the up and down arrows to view the next matching asset.
- In the Navigation pane, select All Assets and click Managed Assets tab to search all assets or filter by assets type. You can further search for an asset.
- In the Jobs pane, you can search for the jobs. Use the search function to filter the category of information you want to view.

## Establishing Your Account Preferences

The software enables you to customize parts of the user interface to meet your preferences. Your personal preferences override the default preferences that are set for your role. To change your account preferences, click **Setup** and then **My Preferences** in the upper right corner of the UI.

Sign in and Start Page Preferences enable you to select any section of the Navigation pane to display as the default view each time you log in. The default is to expand the Assets section and display All Assets. For the Assets section, you can select a sub-option of assets, such as Engineered Systems, to display as the default view instead of All Assets. Another option is to display a section other than Assets, such as the Message Center or vDC Management, as the default view.

User Interface Preferences enable you to hide some sections from displaying in the Navigation pane, such as Libraries or Networks. You cannot hide the Assets and Administration sections. For the Assets section, you have the option to specify that the assets are always expanded or always collapsed and you can choose which tab to display as the default tab. For example, you might prefer to have the Summary page display as the default tab instead of the Dashboard tab. You can set values for Session Timeout, Console Session Timeout, Connectivity Check Interval, Table Refresh Frequency, and Job Status Popup Duration for Time Intervals.

Membership Graph Preferences enable you to set the display preferences for the orientation, icon size, and level of depth for the assets in Membership Graph. This feature is available beginning with the 12.2.2 release.

Users Preferences Summary displays a summarized history of the preferences that you have selected in My Preferences. You can view your set preferences for the start page, display, time intervals, asset default tab, and Membership Graph.

An icon is a small picture or symbol on a user interface (UI) that represents an action or a state.

Oracle Enterprise Manager Ops Center has a variety of icons to represent an asset, the current state of an asset, and actions. A tool tip appears when you place the mouse over an icon. Tool tips provide brief descriptions of the icons that appear in Oracle Enterprise Manager Ops Center.

When an icon is grayed out, it means that the feature is not functional for the current scenario or you have not been assigned the role to perform the action.

### Administration Icons

Oracle Enterprise Manager Ops Center provides you with a variety of tools for understanding and managing your datacenter. The Administration icons are associated with actions that you use to configure and manage Oracle Enterprise Manager Ops Center. You can only enter or edit the cost of power in Administration. Following are the icons that are associated with Administration.

**Figure A-1 Register Enterprise Controller**



**Figure A-2 Ops Center Downloads**



**Figure A-3 Set Enterprise Controller Storage Library**



**Figure A-4 Setup Connection Mode**



**Figure A-5 Edit Authentications**



**Figure A-6 Proxy Deployment Wizard**



**Figure A-7 Configure Local Agent**



**Figure A-8 Self Diagnosis**



**Figure A-9 Unconfigure Enterprise Controller**



**Figure A-10 Change HTTP Proxy**



**Figure A-11 Edit Energy Cost**



**Figure A-12 Add User**



**Figure A-13 DHCP Config**



**Figure A-14 Subnets**



**Figure A-15 External DHCP Server**



**Figure A-16 Navigate to Selected Oracle VM Manager**



**Figure A-17 Discover Oracle VM Managers**



**Figure A–18 Discover Oracle VM Server**



**Figure A–19 Discover File Server**



**Figure A–20 Discover iSCSI Storage**



## Badges

Badges are special types of icons that appear in the corner of asset icons to show the status of the assets.

**Figure A–21 Critical Badge**



**Figure A–22 Warning Badge**



**Figure A–23 Info Badge**



**Figure A–24 Configure Badge**



**Figure A–25 Shutdown Badge**



**Figure A–26 Update Badge**



**Figure A–27 Lock Badge**



**Figure A–28 Unreachable Badge**



**Figure A–29 Installation Badge**



## Boot Environment Icons

A boot environment is an instance of a bootable Oracle Solaris image plus additional software packages that are installed onto the image, and the set of all file systems and devices (disk slices and mount points) that are required to operate an Oracle Solaris OS instance.

Following are the icons that are associated with Boot Environment.

**Figure A–30 Create New Boot Environment**



**Figure A–31 Activate Boot Environment and Reboot**



**Figure A–32 Active Boot Environment**



**Figure A–33 Active Boot Environment Upon Reboot**



**Figure A–34 Delete New Boot Environment**



**Figure A–35 Synchronize Boot Environment**



## Connectivity Icons

Connectivity icons display the session mode and connectivity. To determine if you run in Connected Mode and have access to My Oracle Support Services, check the icons in the upper right corner of the UI. If an icon is not colored, you are not in connected mode. The icons indicate:

- Whether or not Oracle Enterprise Manager Ops Center is connected to the Internet.
- Whether or not Oracle Enterprise Manager Ops Center is connected to the Oracle Knowledge Base.
- Whether or not Oracle Enterprise Manager Ops Center is connected to My Oracle Support Services.

**Figure A–36 My Oracle Support Services Connected**



**Figure A–37 My Oracle Support Services Disconnected****Figure A–38 Internet Connected****Figure A–39 Internet Disconnected****Figure A–40 Knowledge Base Connected****Figure A–41 Knowledge Base Disconnected**

## Group Icons

Group icons are icons that are associated with administrative structures that organize assets so that you can locate an asset quickly or perform operations on all assets of the same type.

**Figure A–42 Create Group****Figure A–43 Add Assets to Groups****Figure A–44 Remove Asset From Group****Figure A–45 Move Assets to Group****Figure A–46 Add Attribute Icon****Figure A–47 Add Rule Icon**

**Figure A–48 Delete Attribute Icon**



**Figure A–49 Delete Rule Icon**



## Hardware Icons

Hardware icons represent the various types of hardware used to manage the datacenter.

**Figure A–50 Blade Icon**



**Figure A–51 Chassis Icon**



**Figure A–52 CPU Icon**



**Figure A–53 Disk Controller Icon**



**Figure A–54 Disk Expander**



**Figure A–55 Ethernet Port Icon**



**Figure A–56 Fan Icon**



**Figure A–57 Fan Tray Icon**



**Figure A–58 Generic Hardware Icon**



**Figure A–59 Hard Disk Icon**



**Figure A-60 I/O Board Icon**



**Figure A-61 I/O Module Icon**



**Figure A-62 Memory Icon**



**Figure A-63 Memory Board Icon**



**Figure A-64 PCI Icon**



**Figure A-65 Power Control Setting Icon**



**Figure A-66 Power Supply Setting Icon**



**Figure A-67 System Icon**



**Figure A-68 Utilization CPU**



**Figure A-69 Utilization File System**



**Figure A-70 Utilization**



**Figure A-71 Utilization IO**



**Figure A-72 Utilization Memory**



**Figure A-73 Utilization Network**



**Figure A-74 Utilization Swap Icon**



**Figure A-75 Utilization System Load Icon**



**Figure A-76 XSCF Icon**



## Incident Icons

Incident icons are icons that reflect the current state of the incidents.

**Figure A-77 View Alerts**



**Figure A-78 View Annotations**



**Figure A-79 View Possible Impacts and Causes**



**Figure A-80 View Comments**



**Figure A-81 View Suggested Actions**



**Figure A-82 Add Annotations**



**Figure A-83 Assign Incidents**



**Figure A-84 Acknowledge Incident**



**Figure A–85 Take Action on Incidents****Figure A–86 Mark Incident as Repaired****Figure A–87 Close Incident**

## Job Icons

Every action creates a job. Many jobs can run at the same time and some jobs take longer than others to complete. To follow the progress of a particular job, you can display the job details.

**Figure A–88 All Jobs****Figure A–89 Jobs In Progress****Figure A–90 Jobs Waiting For User Input****Figure A–91 Jobs Stopped****Figure A–92 Jobs Scheduled****Figure A–93 Jobs Partially Successful****Figure A–94 Jobs Suspended****Figure A–95 Jobs Failed**

**Figure A–96 Jobs Successful**



**Figure A–97 View Job Details**



**Figure A–98 Re-run Selected Jobs**



**Figure A–99 Display Selected Target Details**



**Figure A–100 Debug Jobs Using OCA Doctor**



**Figure A–101 Mode Actual**



**Figure A–102 Delete Selected Jobs**



## Kernel Icons

The kernel is a program that constitutes the central core of a computer operating system. It has complete control over everything that occurs in the system.

**Figure A–103 Tree Node Icon**



## Library Icons

Libraries store and manage cached data, images, packages, and metadata. A software library stores images for provisioning operations. A Storage Library is a file system on the virtual host's server or it can be accessed through an NFS server or SAN network. Guest configurations for its operating system, data, CPU, memory, and network as metadata are stored in the storage library associated with the virtual host.

**Figure A–104 New Local Software Library**



**Figure A-105 New NAS Software Library****Figure A-106 New SAN Storage Library****Figure A-107 Set Enterprise Controller Storage Library****Figure A-108 Move Metadata****Figure A-109 Add Storage****Figure A-110 Enable Sharing**

## Message Center Icons

You can create, view, and manage service requests from the Oracle Enterprise Manager Ops Center user interface.

**Figure A-111 Open Service Requests****Figure A-112 Service Request Opened By Others****Figure A-113 My Service Requests****Figure A-114 Notifications****Figure A-115 Delete All Notifications**

**Figure A-116 My Incidents****Figure A-117 Unassigned Incidents**

## Monitoring Icons

Monitoring rules and policies define the monitoring parameters. Monitoring rules define the alerting conditions. Rules are associated with, and determined by, the type of managed resource. Monitoring rules state the values and boundaries for an asset's activity. A monitoring policy defines alert configurations to be performed on one or more managed resources. It contains the information needed to monitor a managed asset with user-defined alert configurations, including defined thresholds and alert monitors.

Below are the icons that are associated with monitoring rules and policies.

**Figure A-118 Add Alert Monitoring Rule****Figure A-119 Deselect All Rules****Figure A-120 Select All Rules****Figure A-121 Edit Alert Monitoring Rule****Figure A-122 Disable Alert Monitoring Rule****Figure A-123 Delete Alert Monitoring Rule****Figure A-124 Navigate to Monitoring Policy****Figure A-125 Applying a Monitoring Policy**

**Figure A–126 Extract a Monitoring Policy**



**Figure A–127 Create a New Monitoring Policy**



**Figure A–128 Copy Monitoring Policy**



**Figure A–129 Delete Monitoring Policy**



**Figure A–130 Set as Default Policy**



**Figure A–131 View Associated Assets**



## Network Icons

Oracle Enterprise Manager Ops Center manages networks for its virtual hosts. Guests in the network communicate with each other or with the Internet through these virtual hosts. Use networks to:

- Manage individual hosts
- Connect hosts to the Proxy Controller
- Allow guests to communicate with each other or with the Internet
- Connect remote JMX with the public API

Below are the icons that are associated with Network.

**Figure A–132 Create Network Domain**



**Figure A–133 Delete Network Domain**



**Figure A–134 Connect Guests**



**Figure A–135 Create Public Network**



**Figure A–136 Define Network**



**Figure A–137 Edit Attributes**



## Operating System Icons

Operating system icons are icons that depict the type of operating system and the actions that are associated with the operating system.

**Figure A–138 Linux Operating System Icon**



**Figure A–139 Oracle Solaris Icon**



**Figure A–140 Oracle Solaris Cluster Icon**



**Figure A–141 Microsoft Windows Icon**



**Figure A–142 New Update OS Job**



**Figure A–143 Deploy/Update Software**



**Figure A–144 Reboot**



**Figure A–145 Attach Network**



**Figure A-146** *Place in Maintenance***Figure A-147** *Update Operating System*

## Oracle VM Server Icons

These are icons that are related to the functions for Oracle VM Server.

**Figure A-148** *Oracle VM Server Pool***Figure A-149** *LDOM SPARC***Figure A-150** *LDOM Server Pool***Figure A-151** *LDOM SPARC Server Pool***Figure A-152** *Global Zone*

## Process Icons

These are icons associated to the processes of Oracle Enterprise Manager Ops Center.

**Figure A-153** *CPU Tree Node Icon***Figure A-154** *Memory Tree Node Icon***Figure A-155** *Tree Node Icon*

## Report Icons

Reports let you gather information about your assets, such as job history, firmware, operating system updates, and incidents. You can export reports or use them to start jobs on targeted assets.

**Figure A-156** *Create Windows Host Compliance Report*



**Figure A-157** *Create Windows Incident Compliance Report*



**Figure A-158** *View Host Compliance Report Result*



**Figure A-159** *Rerun Report*



**Figure A-160** *Delete Incident Compliance Report*



**Figure A-161** *Run Report Template*



**Figure A-162** *Report Pending to Run*



**Figure A-163** *Create System Information Report*



**Figure A-164** *Create Incident Summary Report*



**Figure A-165** *Create Incident Detail Report*



**Figure A-166** *Create Firmware Report*



**Figure A-167 Create Change History Report**



**Figure A-168 Create Baseline Report**



**Figure A-169 Create System Catalog Report**



**Figure A-170 Create CVE report**



**Figure A-171 Create Recommended Software Configuration Report**



**Figure A-172 Create Solaris Update Compliance Report**



**Figure A-173 Create Profile Report**



**Figure A-174 Compare Catalog Report**



**Figure A-175 Distribution Update Report**



**Figure A-176 Package Compliance Report**



**Figure A-177 Service Pack Compliance Report**



**Figure A-178 View CSV Output Icon**



**Figure A–179 View Interactive Output Icon**



**Figure A–180 View PDF Output Icon**



## Switch Icons

Switch icons represent the hardware devices that join multiple computers within one local area network (LAN).

**Figure A–181 General Switch**



**Figure A–182 InfiniBand Icon**



**Figure A–183 10 GIG E**



**Figure A–184 Switch Reset**



**Figure A–185 Launch Switch UI**



## Universal Icons

Universal icons are icons that are associated with the most common functions or actions that are performed in the application.

**Figure A–186 Add Icon**



**Figure A–187 Delete Icon**



**Figure A-188 Deselect All Icon****Figure A-189 Select All Icon****Figure A-190 Power Off Icon****Figure A-191 Refresh Icon****Figure A-192 Start Icon****Figure A-193 Suspend Icon****Figure A-194 View Details Icon****Figure A-195 Go To Icon****Figure A-196 Shutdown Icon**

## Update Policy Icons

Policies are lists of actions that are explicitly approved or denied. Policies are specific to operating system update and define the amount of user interaction you want when applying operating system patches and packages. Update policies define the component configuration of the system you want to update.

**Figure A-197 New Policy****Figure A-198 Import Policy**

## Update Profile Icons

Update profile icons are icons that are associated to the update actions that are carried out on a profile in a defined order.

**Figure A–199 Copy Icon**



**Figure A–200 New Profile Icon**



**Figure A–201 Delete Icon**



**Figure A–202 Import Profile**



**Figure A–203 Profile Install Packages**



**Figure A–204 Profile Uninstall Packages**



## vDC Icons

Virtual Datacenter or vDC is a collection of the server pools that share the common storage and network resources.

**Figure A–205 Reserved IP Address**



**Figure A–206 Allocated IP Address**



**Figure A–207 Used IP Address**



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