

Oracle® Enterprise Manager Ops Center

Creating Oracle Solaris 10 Zones

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This guide provides an end-to-end example for how to use Oracle Enterprise Manager Ops Center.

Overview

This example shows you how to create a non-global zone on an Oracle Solaris 10 operating system. The non-global zone type is a whole root zone. The non-global zone configuration details are: shared IP zone, local storage and file system.

A whole root non-global zone uses a root file system that does not share components of the global zone's root file system. You can define the size of the root file system for the non-global zone. The default size for the root file system is eight (8) GBytes for whole root zones.

Profile and plan templates guide you through the steps needed to create a customized discovery profile and create zones plan for your organization. Your customized profiles and plans are saved in the Plan Management section. You can use and reuse the plans to manage assets and to create zones.

See [Related Articles and Resources](#) for links to related information and articles about different zone configurations, including choosing the type of storage library, complex network configurations, and server pools that enable you to migrate zones between pools.

What You Need

Before creating zones, you must determine where to store the zone's data and metadata.

When you create a zone, you assign it to one of the storage libraries associated with its virtual host:

- **Zone data:** The zone's data that results from its operations. You can store zone data in a local library, iSCSI or SAN storage library. For zone migration, store the zone data in a iSCSI or SAN storage library.
- **Zone metadata:** The zone's metadata is the configuration of the zone's operating system, CPU, memory, and network. The storage library must have sufficient space to accommodate the metadata. You can store metadata in a local library or in a NAS library. For zone migration, store the metadata in a NAS storage library.

You need the following to create an Oracle Solaris 10 zone:

- Discover and manage an Oracle Solaris 10 operating system.

- Prepare a global zone.
 - **Zone storage**

For local storage, nothing is required. The filesystem is always implemented as a ZFS filesystem.

To use zone migration, store the zone data in an iSCSI or SAN storage library and the zone metadata in a NAS storage library.
 - **Network**

You will need a network that is associated with the global zone and that is available for the zone. This example uses the default network that is created when you add the operating system.
 - **Available IP address**

When you use Shared IP mode, the global zone is sharing its IP link with the zone.
- **Credentials**

A password or SSH key to log in to the zone. This example uses a user name and password.
- **Appropriate roles and permissions**

You need the following Oracle Enterprise Manager Ops Center roles:

 - Asset admin: Discover and manage virtualization hosts.
 - Profile and plan admin: Create and manage zone profiles and plans.
 - Virtualization admin: Create and manage zones.

Hardware and Software Configuration

In this example, you are creating a zone that has a shared IP mode network configuration. The storage library is the local filesystem. Each zone has a default local filesystem storage library named `/guests` where data and metadata for the host's guests are stored.

Configure the following:

- Install Oracle Solaris 10 operating system. This example uses Oracle Solaris 10 10/09.
- At least 5 GB File system and at least 6 GB virtual disk for Zone storage.
- Local storage for the zone metadata. This example uses the local library.

Creating an Oracle Solaris 10 Zone

The following tasks in this example:

1. [Add an OS to the User Interface](#)
2. [Create an Oracle Solaris 10 Whole Root Zone Profile and Plan](#)
3. [Apply the Plan to Create a New Zone](#)

Add an OS to the User Interface

Use a Discovery profile to add an asset to the Oracle Enterprise Manager Ops Center UI. The following task shows you how to create and run a new Discovery profile to add an Oracle Solaris 10 operating system to the UI.

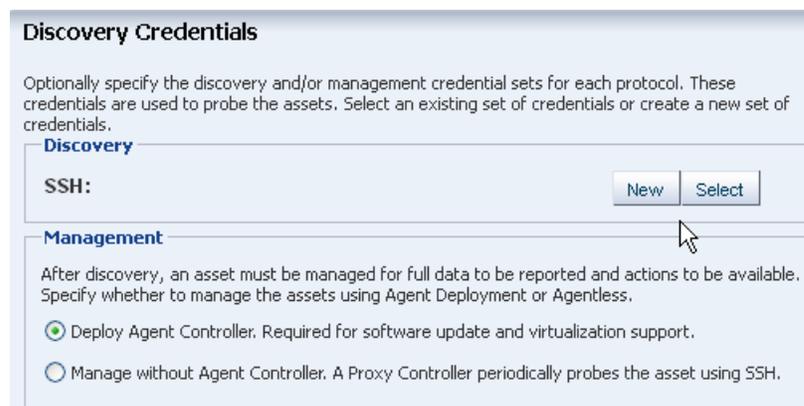
1. Expand **Plan Management**, scroll down to **Profiles and Policies**, then click **Discovery**.



2. Click **Create Profile** in the Actions pane.
3. Enter a name for the discovery profile, and select **Solaris/Linux OS** as the type of asset to be discovered. Click **Next**.

A screenshot of the 'Identify Profile' form. The 'Name' field contains 'Oracle Solaris OS Discovery'. The 'Description' field contains 'Use this profile to discover Oracle Solaris OS'. The 'Discovery Type' dropdown menu is open, showing 'Operating Systems', 'Solaris, Linux OS' (which is selected), and 'Windows OS'.

4. Click **Next** to skip adding tags.
5. Do not specify IP addresses at this time. Click **Next**.
6. Define the discovery credentials and management option.
 - To use previously defined credentials, click **Select** and choose from the list
 - To create a new set of credentials, click **New** to launch a pop-up wizard.

A screenshot of the 'Discovery Credentials' form. The 'Discovery' section has a 'SSH:' label and two buttons: 'New' and 'Select'. The 'Management' section has a heading and a paragraph: 'After discovery, an asset must be managed for full data to be reported and actions to be available. Specify whether to manage the assets using Agent Deployment or Agentless.' Below this are two radio buttons: 'Deploy Agent Controller. Required for software update and virtualization support.' (which is selected) and 'Manage without Agent Controller. A Proxy Controller periodically probes the asset using SSH.'

- a. For new credentials, enter a name and description that identifies the credential. Enter the root user name and password for the system, then click **OK** to return to the Discovery Credentials page.

Create Profile - Discover Create Credentials

Steps | **Help**

1. Identify Profile
2. Tags
3. IP Ranges
4. **Discovery Credentials**
5. Summary

*** Indicates Required Field**

*** Name:** S10 Credentials

Description: Oracle Solaris 10 credentials

SSH

*** Login User:** user name

*** Password:** ●●●●●●

*** Confirm Password:** ●●●●●●

Privileged Role:

Role Password:

Confirm Password:

*** SSH Port:** 22

- b. In the Management section of the Discovery Credentials page, select **Deploy Agent Controller** to install Agent Controller on the asset.

Discovery Credentials

Optionally specify the discovery and/or management credential sets for each protocol. These credentials are used to probe the assets. Select an existing set of credentials or create a new set of credentials. [clear](#)

Discovery

SSH: Solaris Credentials [New](#) [Select](#)

Management

After discovery, an asset must be managed for full data to be reported and actions to be available. Specify whether to manage the assets using Agent Deployment or Agentless.

Deploy Agent Controller. Required for software update and virtualization support.

Manage without Agent Controller. A Proxy Controller periodically probes the asset using SSH.

7. Click **Finish** to create the Discovery profile. The new profile appears in the center pane.

Discovery Profiles

Discovery Profiles (5)

Name	Description	Subtype
Add Solaris OS		Solaris, Linux OS
GECovmMgrProf		OVM Manager
gzDiscoveryProf		Solaris, Linux OS

8. Double-click the new Discovery profile, then click **Add Assets** in the Action pane.
9. Enter the host name or IP address, then click **Add Now**.

A job is launched to discover and manage the asset.

Create an Oracle Solaris 10 Whole Root Zone Profile and Plan

A zone profile defines the zone configuration details and creates a deployment plan that you can use to deploy the profile to create a zone. You can reuse the plan to create additional identical zones, or you can use it to create new plans. You can edit the zone configuration details at any time.

1. Expand **Plan Management**, scroll down to the Profiles and Policies section, then select **Oracle Solaris Zone**.



2. Click **Create Profile** in the Actions pane.
3. Enter a name and description for the profile, then select **Oracle Solaris 10** from the Subtype list.

A screenshot of a form titled 'Identify Profile'. The form has several fields: a text input for '* Name:' containing 'Create Solaris 10 Zone'; a text area for 'Description:' containing 'Use this profile and plan to create Oracle Solaris 10 zones with the default network and local library.'; a checkbox labeled 'Create a deployment plan for this profile.' which is checked; and a dropdown menu for '* Subtype:' with 'Solaris 10' selected. Other options in the dropdown include 'Subtype', 'Solaris 11', 'Solaris 8', and 'Solaris 9'. There is a small red asterisk icon and the word 'Indicate' in the top right corner of the form.

4. To identify the zones that are created with this profile, add a zone prefix name and a number to start the series. Do not add any tags for the zone.

Each zone created uses the prefix name appended with a sequential number. For example, if the prefix name is Myzone and the number to start from is 1, the zone names are Myzone1, Myzone2, and Myzone3.

5. Select **Native, Whole Root Zone**, then click **Next**.



Specify Zone Installation Source

Select the type of zone:

Native, Whole Root Zone
 Native, Sparse Root Zone
 Branded Zone

Architecture: SPARC x86

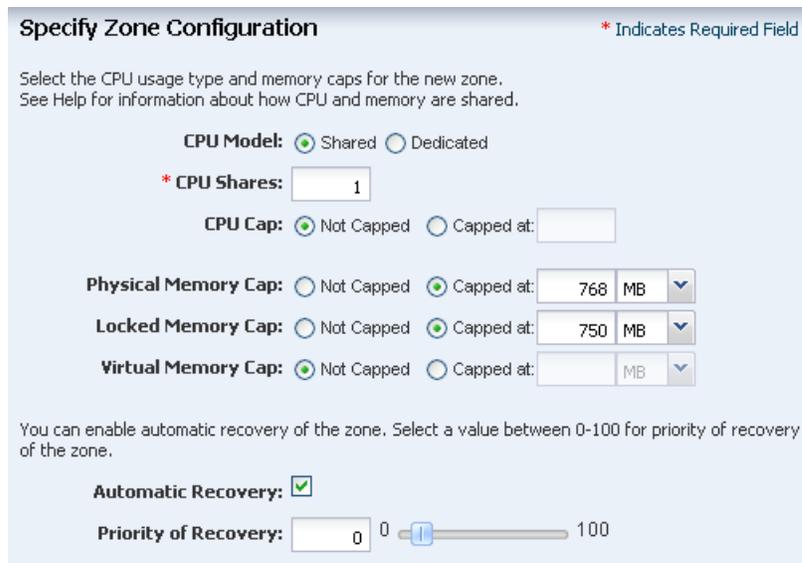
Branded Zone Image:

Host ID Prefix:

Starting Number:

Machine Type:

6. Select the Shared CPU model and define one CPU share. Set the memory thresholds and verify that the locked memory threshold value is less than or equal to the physical memory threshold.



Specify Zone Configuration * Indicates Required Field

Select the CPU usage type and memory caps for the new zone.
See Help for information about how CPU and memory are shared.

CPU Model: Shared Dedicated

* **CPU Shares:**

CPU Cap: Not Capped Capped at:

Physical Memory Cap: Not Capped Capped at:

Locked Memory Cap: Not Capped Capped at:

Virtual Memory Cap: Not Capped Capped at:

You can enable automatic recovery of the zone. Select a value between 0-100 for priority of recovery of the zone.

Automatic Recovery:

Priority of Recovery:

7. The zone uses the default root file system, which is the zone path. Do not define additional file systems. Click **Next**.

8. In this example the zone uses the local library. Edit the required disk size, as needed. Click **Next**.

Specify Zone Storage

Select the library and specify the virtual disks that will make up for the zone's storage. The virtual disks are bound to the actual storage during the execution of the profile.

Storage for the metadata Library: Local file:///guests

Storage Disks

Library Type	Library Name	Virtual Disk Name	Volume Group	Required Size(GB)
Local	file:///guests	vdisk0		9

9. Add the network that you want to connect to the zone and the number of connections. The network is not bound until you execute the plan.

Specify Zone Networks

Select one or more networks to connect to the zone. For each selected network, enter the number of connections. The actual binding of the network occurs during profile execution.

Networks

Network Domain	Network Name	Number of Connections
default	203.0.113.0/24	1

10. Define the language, time zone, terminal-type, and root password for the zone.
 - Accept the default value, *dynamic*, for the NFSv4 Domain Name.
 - Provide the root password.
 - Set the boot properties for the new zone. You can set the zone to boot after it is created or whenever the global zone boots.
 - Select the option to **Deploy the agent for management**.

11. Select a Name Service or select None, then click **Next**.

Specify Zone Naming Services * Indicates Required

Specify the name service, domain name and the corresponding name server for the zone.

Name Service: NONE DNS NIS NIS+ LDAP

12. Click **Finish** to create the zone profile and associated deployment plan.

The zone profile and the corresponding deployment plan appear in the list of Oracle Solaris Zone Profiles and Oracle Solaris Zone Plans.

Target Type: Solaris Global Zone **Version:** 2

Template Name: Create Oracle Solaris Zones **Release Date:** 03/31/2012 12:16:07 am MDT

Description: Creates Oracle Solaris Zones

Deployment Template Composition

Step	Required Input	Required Profile/Plan
Create Oracle Solaris Zones	profile	Oracle Solaris Zone Profile

Deployment Plans From Template (3)

Search

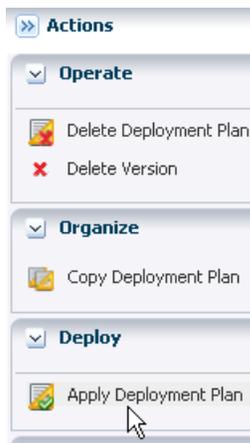
Plan Name	Version	Target Type	Description	Failure Policy	Last Modified
Oracle Solaris 10 Zone-plan 1	1	Global Zone	Created from profi	Stop at failure	03/31/2012 12:15:53

Apply the Plan to Create a New Zone

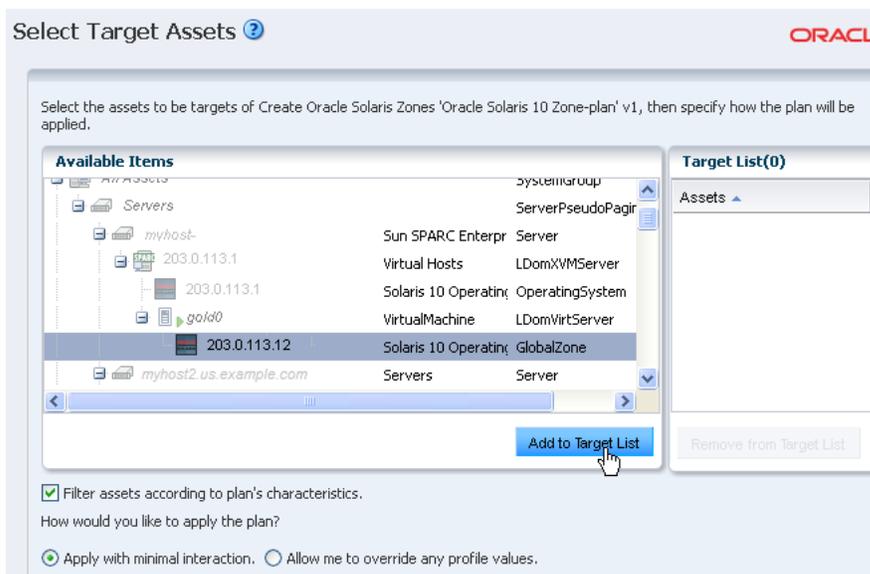
Use the plan that you created in [Create an Oracle Solaris 10 Whole Root Zone Profile and Plan](#) to create a zone, and then view the new zone in the UI.

1. Expand **Plan Management**, expand **Deployment Plans**, then select the Oracle Solaris Zone plan that you created in the previous section.

2. Click **Apply Deployment Plan**.



3. Select the target from the list of Available Items, then click **Add to Target List**.



- Specify the Zone Identity. The fields are populated with the information from the profile.

Specify Zone Identity * Indicates Required

Enter the identification for the zones.

* **Zone Name:** Automatic naming; Prefix:
 Starting Number:

Zone Description:

Tags: + x Search

Tag Name	Value

- Select local storage as the library to save the zone metadata. Click **Next**.

Specify Zone Storage

Select the library and specify the virtual disks that will make up for the zone's storage.

Target: ocbm-ipgs14

Storage for the metadata Library:

Virtual Disk/Storage Specification for Zone Myzone1

Library Type	Library Name	Virtual Disk Name	Volume Group	Required Size(GB)
Local	file:///guests	Myzone1-vdisk0		9

- Select the shared zone IP stack. In **Networks**, select a network and IP range, then click **Next**.

Specify Zone Networks

Specify the IP stack type and IP address range for the zones.

Zone IP Stack: Exclusive Shared

Networks + x

Networks	Number of Connections	Address Allocation Method	IP Range
203.0.113.0/24	1	Use Static IP	203.0.113.

- The **Network Resource Assignments** page shows the shared network and IP address.
 - Host name:** You can change the zone's host name to be different from the zone name, which might be useful when you are using a naming server.
 - Network Connections:** You can add, modify, or delete network connections. For example, you can have Network1 and Network2. When you create two zones you can connect Myzone1 to Network1 and Network 2 and connect Myzone2 to Network1 and remove Network2.

- IP address: The IP address for a set of zones appears in a range. You can enter the IP addresses in a comma delimited list.

Network Resource Assignments

Specify the NICs and the individual IPs.

Target: myhost

Host Name

Networks for Zone Myzone1

Networks	VLAN ID	NIC	Address Allocation Method	IP Address
203.0.113.0/24	-	nge0	Use Static IP	203.0.113.4

8. Schedule when you want the job to run. For this example, click **Now**.

Schedule Job

Select when the job should be scheduled to execute the deployment plan on the selected targets.

Now

At a later date/time

9. Click **Apply** to run the job.

When the job finishes successfully, the new zone appears in the Asset tree. Click the asset to see the dashboard.

The screenshot displays the Oracle Solaris Management Console interface. On the left, the 'Assets' tree shows a hierarchy of hosts, with 'Myzone1' highlighted under the 'myhost' group. The main window shows the 'Summary - SOLARIS' dashboard for 'Myzone1'. Key information includes: Name: Myzone1, State: Running, Hostname: Myzone1, OS: Solaris 10 Operating System, and Agent Managed: Yes. A 'Membership Graph' at the bottom illustrates the network topology, showing 'Myzone1' connected to 'myhost1' and 'myhost2', which are in turn connected to 'Solaris 10' and 'Solaris' hosts.

What's Next?

After creating a zone, you can perform various operations, such as boot, reboot, shut down, and halt on the zone. You can use the plan to create additional zones. The Analytics feature enables you to manage zone performance. You can view the CPU and memory utilization for each zone, and an historical view of the top consumers.

Related Articles and Resources

The Oracle Enterprise Manager Ops Center 12c Release 2 documentation is available at http://docs.oracle.com/cd/E40871_01/index.htm.

The *Oracle Enterprise Manager Ops Center Feature Reference Guide* has information about asset management, Oracle Solaris 11 Software Update library, storage, networks, zones, and server pools.

The *Oracle Enterprise Manager Ops Center Administration Guide* has information about user roles and permissions.

For end-to-end examples, see the workflows and how to documentation in the Deploy How To library at http://docs.oracle.com/cd/E40871_01/nav/deployhowto.htm and the Operate How To library at http://docs.oracle.com/cd/E40871_01/nav/operatehowto.htm.

For in-depth information about zones, see the Oracle Solaris Zones documentation at http://docs.oracle.com/cd/E23824_01/html/821-1460/index.html.

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