

Oracle® Enterprise Manager Ops Center

Manage the Configuration of a Zone

12c Release 3 (12.3.0.0.0)

E60028-01

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

Introduction

Oracle Enterprise Manager Ops Center provides operations for creating and managing zones. Zones are virtualized operating system environment created within a single instance of the Oracle Solaris operating system. You can create zones on Oracle Solaris 10 or 11 OS. You can also manage most zones that are created using the native Oracle Solaris CLI from the Oracle Enterprise Manager Ops Center UI.

For Oracle Solaris 11 zones, you can discover and monitor zones that are configured with shared IP, but zone support is similar to a zone without an agent. The zones appear in the UI, but active management is not supported and advanced network configurations are not monitored. Immutable zones and zones on shared storage are not supported in this release.

You can modify or add more resources for the zone configuration such as CPU, memory, storage, and network resources. You can also make a duplicate copy of the zone. Zone replication is similar to creating a new zone. You can use this option to retain the existing zone configuration or change the configuration while creating a copy of the zone. This guide shows you how to manage the configuration of a zone.

You can dynamically modify the zone configuration such as CPU shares and memory, and add storage resources. Whereas, you must shut down the zone to connect to a network.

This guide describes the required state of the zone to perform the actions. See [Related Articles and Resources](#) for more information about managing the state of the zone.

Note: You cannot edit the attributes or configuration of a kernel zone, or clone a kernel zone, in Oracle Enterprise Manager Ops Center 12c Release 3 (12.3.0.0.0).

What You Will Need

You need the following to manage the zone configuration:

- Virtualization admin role to access and manage the zones.
- Required storage and network resources are associated with the parent global zone.

Managing Zone Configuration

This example uses the following tasks to manage the configuration of a zone:

- [Editing Attributes and Configuration](#)
- [Adding Storage](#)
- [Connecting to Network](#)
- [Cloning Zones](#)

Editing Attributes and Configuration

You can modify the following parameters of zone configuration:

- CPU model, resources and cap
- Memory caps
- Type of scheduler
- Lightweight processes
- Automatic recovery priority

In this example, the zone configuration is modified for CPU cap and automatic recovery priority value.

1. Select the zone from the Assets section.
2. Click **Edit Configuration** in the Actions pane.

The Edit Configuration window is displayed.

Oracle Enterprise Manager Ops Center - Edit Zone Configuration

Edit Zone Configuration

Zone Name: test_zone2

Zone Type: Native, Whole Root

CPU Model: ☒ Shared ☐ Dedicated

Allocated CPU Shares: 0

CPU Shares: 1

CPU Cap: ☐ Not Capped ☒ Capped at: 2

Physical Memory Cap: ☒ Not Capped ☐ Capped at:

Locked Memory Cap: ☒ Not Capped ☐ Capped at:

Virtual Memory Cap: ☒ Not Capped ☐ Capped at:

Scheduler: FSS

Max. Lightweight Processes:

Max. Message IDs:

Max. Semaphore IDs:

Max. Shared Memory IDs:

Max. Shared Memory: MB

Automatic Recovery Priority: 78

Finish Cancel

3. Enter the CPU shares to be capped to 2 and the Automatic Recovery Priority value to 78.
4. Click **Finish** to apply the changes.

You must reboot the zone only when you change the CPU model. In this example, the CPU model is retained and the other changes are dynamically applied to the zone.

Adding Storage

You can add more storage to the zone as required. The storage is added to the existing zpool of the zone. The existing zone storage is displayed in the UI as follows:

The screenshot shows the 'Storage' tab in the Oracle Enterprise Manager Ops Center. The top navigation bar includes 'Dashboard', 'Summary', 'Console', 'Terminal', 'Analytics', 'Networks', 'Storage', 'Incidents', and 'Monitoring'. The 'Storage' tab is active, displaying a table of storage information for the zone 'test_zone2_Clone'.

File System	Real Path on Global Zone	Reserved (GB)	Quota (GB)	Access
ZPool: test_zone2_Clone (2 Items)				
/	/var/mnt/oc-zpools/e1e1ea93-b9eb-485e-a4ef-100f8a616258/0029...	8	8	Read/Write
/export	/var/mnt/oc-zpools/e1e1ea93-b9eb-485e-a4ef-100f8a616258/3971...	2	2	Read/Write

Below the table, there is a section titled 'ZPool and Storage' with a description: 'The following table shows virtual disks that make up the storage of each ZPool or directly attached raw device.'

Under the 'Storage' section, there is a table showing virtual disks:

Virtual Disk Name	Library	Size (GB)
Storage Type: ZPool (1 Item)		
test_zone2_C-disk-0	Local Storage Library (10-79-204-204)	20

This example shows how to add more storage to a zone and the result. The zone can be in running or shutdown state to add storage to it. To add storage to zone, it is required that the storage libraries that constitute the storage are associated with the global zone.

1. Select the zone to which you want to add storage.
2. Click **Add Storage** in the Actions pane.

The Add Storage window is displayed.

The screenshot shows the 'Add Storage' window in the Oracle Enterprise Manager Ops Center. The window title is 'Oracle Enterprise Manager Ops Center - Add Storage'. The 'Name' field is set to 'test_zone2_Clone'. The 'Total Current Storage' is 20 GB, and the 'Additional Storage Specified' is 0 GB. Below this, there is a table for specifying the library and the virtual disk for the additional storage.

Library	LUN/Virtual Disk Name	Volume Group	Size (GB)
nfs://192.0.2.11/xvm/lib1	test_zone2_C-disk-0	-	0

At the bottom of the window, there are 'Finish' and 'Cancel' buttons.

3. All the libraries associated with the corresponding global zone are listed in the Library. Select the NAS library from the list and add 20 GB as the size of the virtual disk to be added to the zone.

Oracle Enterprise Manager Ops Center - Add Storage

Add Storage ? ORACLE

Name: test_zone2_Clone

Total Current Storage: 20 GB

Additional Storage Specified: 20 GB

Specify the library and the virtual disk for the additional storage.

Library	LUN/Virtual Disk Name	Volume Group	Size (GB)
nfs://192.0.2.11/xvm/lib1	test_zone2_C-disk-0	-	20
nfs://192.0.2.11/xvm/lib1			
Local Storage Library (10-79-204-204)			

Finish Cancel

4. Click **Finish** to add the selected storage to the zone.

The selected storage is added to the zone and it is displayed in the **Storage** tab of the zone.

ZPool and Storage

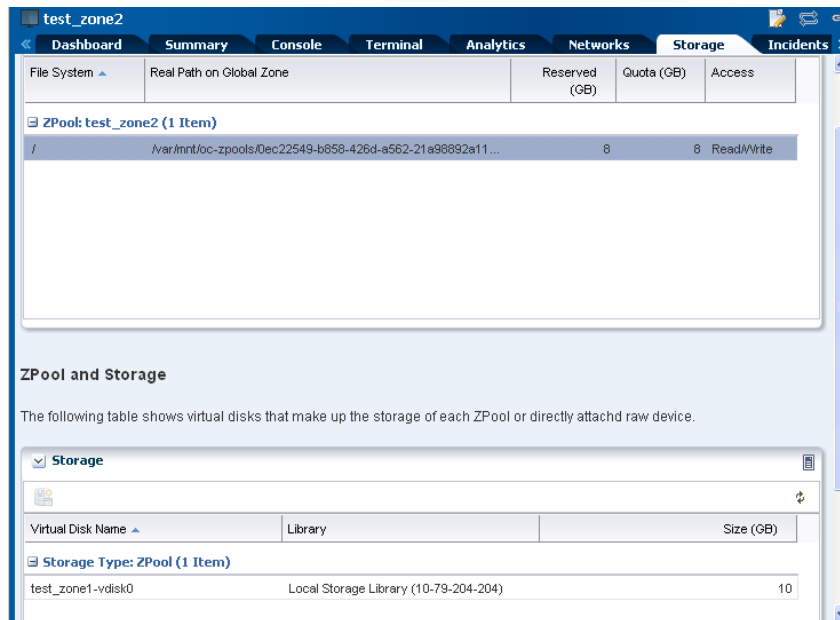
The following table shows virtual disks that make up the storage of each ZPool or directly attached raw device.

Virtual Disk Name	Library	Size (GB)
Storage Type: ZPool (2 Items)		
test_zone2_C-disk-0	Local Storage Library (10-79-204-204)	20
test_zone2_C-disk-0	nfs://192.0.2.11/xvm/lib1	20

The storage is added to the existing zpool of the zone. You cannot delete or remove the added storage to the zone. You can add storage from Block Storage libraries provided they are associated with the global zone.

Adding File Systems

You can add file systems to a zone. The zone must be in shut down state to add a file system. The following figure shows the existing file system for a zone:



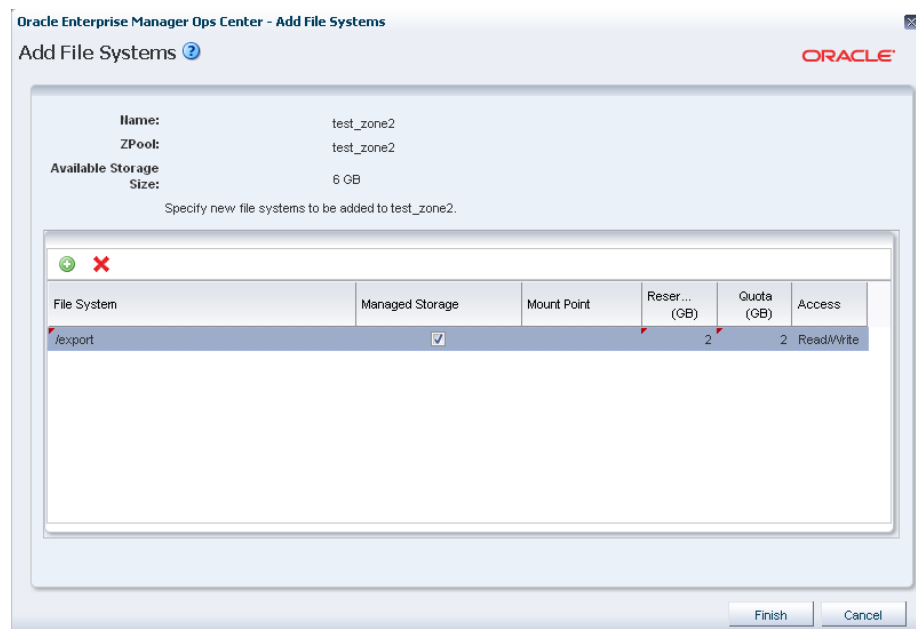
In this example, a file system is added on a managed storage resource. The file system will be added to the existing zpool of the zone.

1. Select the zone from the Assets section.
2. Click **Shutdown Zone** from the Actions pane.

The zone is shutdown and the **Add File System** option is enabled.

3. Click **Add File System** in the Actions pane.

The Add File Systems window is displayed.

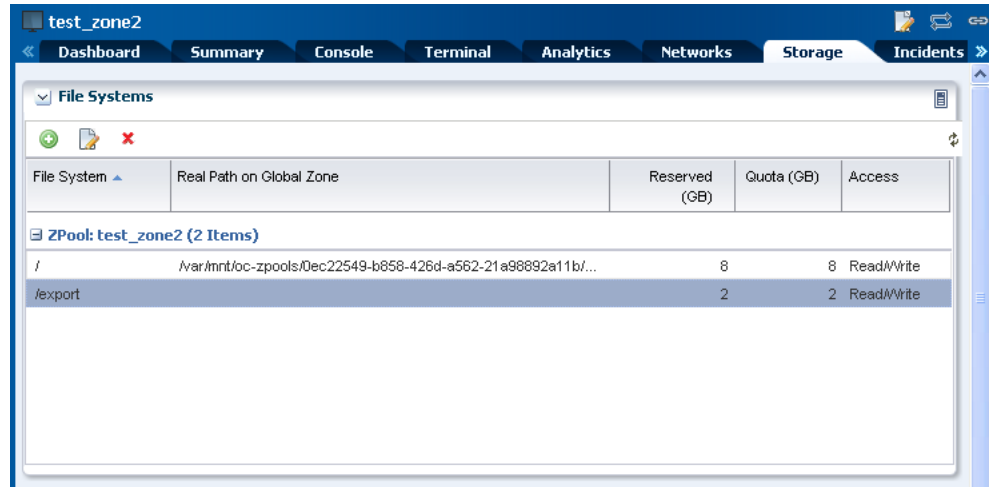


4. Define the following details for the file system:
 - Enter the file system.

- Select the storage source as Managed Storage.
- Enter the Reserved and Quota size of the file system.
- Set the Access to Read/Write.

5. Click **Finish** to add the file system to the zone.

The file system is added to the zone existing zpool. You must boot the zone for the changes to take effect.



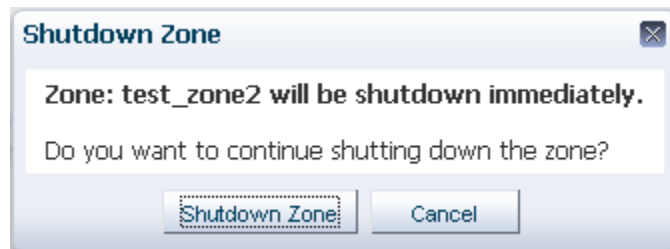
Connecting to Network

You can connect or disconnect networks from the zone. The networks that are attached to the global zone in shared or exclusive mode are available to be connected to the zone. Depending on the type of zone, the corresponding networks are available.

This example showcases a scenario of connecting a network to a zone in shared IP mode.

1. Select the zone from the Assets section.
2. Select **Shutdown Zone** in the Actions pane.

The zone must be in shutdown state to connect networks to it.

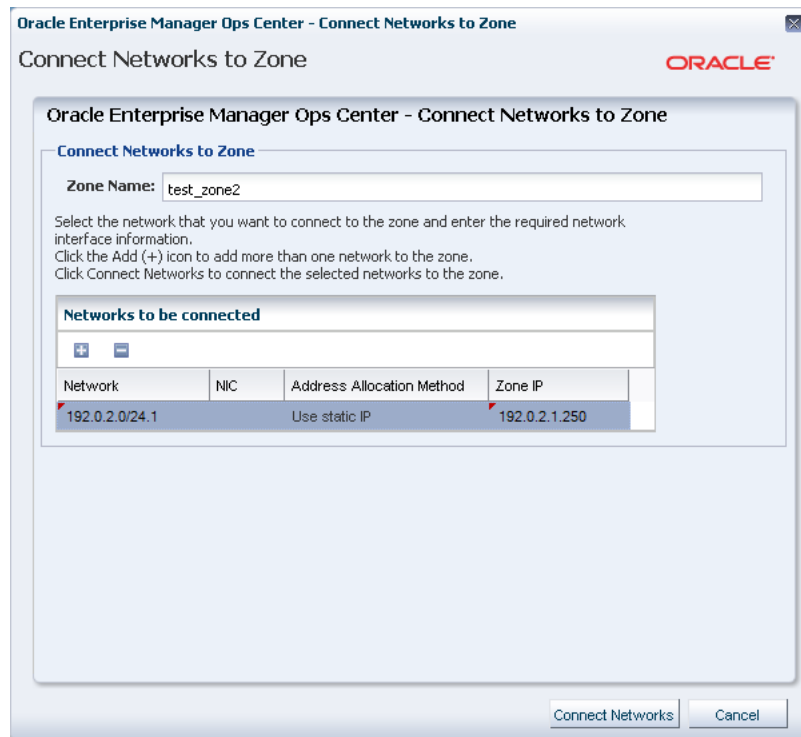


3. Click **Shutdown Zone** in the Shutdown Zone window.

The zone is shut down. The **Connect Network** option is enabled in the Actions pane.

4. Click **Connect Networks** in the Actions pane.

The Connect Networks to Zone window is displayed.

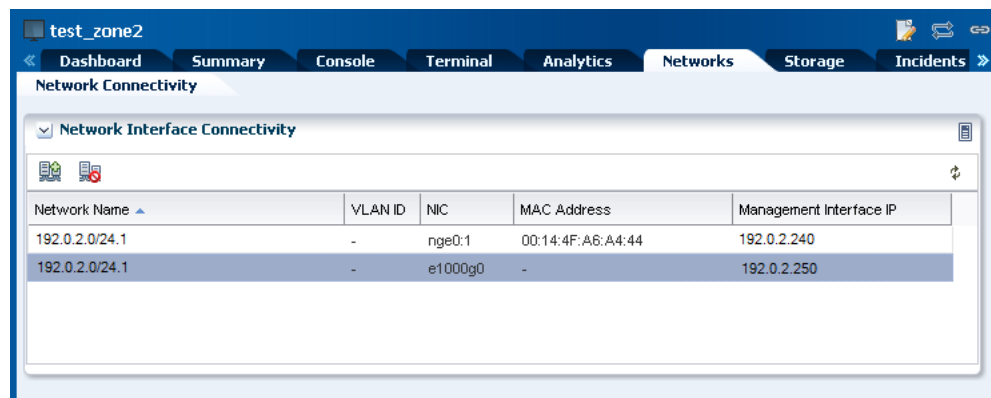


5. Select the network from the list and enter the following details:

- The NIC
- Use Static IP as the Address Allocation Method
- The IP address for the zone

6. Click **Connect Networks** to connect the network to the zone.

The network is connected to the zone and the **Networks** tab list the connected network as shown in the figure:



Boot the zone to change the state to running.

Cloning Zones

Zone replication also known as cloning zones are similar to creating new zones. You can retain the zone configuration of the existing zone or change the configuration of

the zone when you create it. You can make clones of zone and manage their configuration.

1. Select the zone that must be replicated from the Assets section.

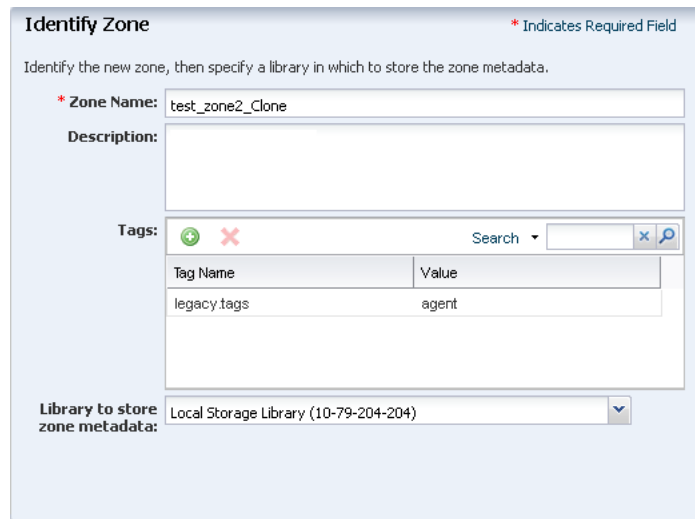
2. Click **Replicate Zone** from the Actions pane.

The Replicate Zone wizard is displayed.

3. Define the following zone details:

- A default zone name is created. You can change the name. In this example, the default zone name is retained.
- Select the library in which to store the cloned zone metadata.

Click **Next**.



The screenshot shows the 'Identify Zone' wizard. At the top, it says 'Identify the new zone, then specify a library in which to store the zone metadata.' Below this, there are three main sections: 'Zone Name' with a text box containing 'test_zone2_Clone', 'Description' with an empty text box, and 'Tags' with a table. The 'Tags' section has a search bar and a table with two columns: 'Tag Name' and 'Value'. The table contains one row with 'legacy.tags' and 'agent'. At the bottom, there is a 'Library to store zone metadata:' dropdown menu showing 'Local Storage Library (10-79-204-204)'.

Identify Zone * Indicates Required Field

Identify the new zone, then specify a library in which to store the zone metadata.

* **Zone Name:** test_zone2_Clone

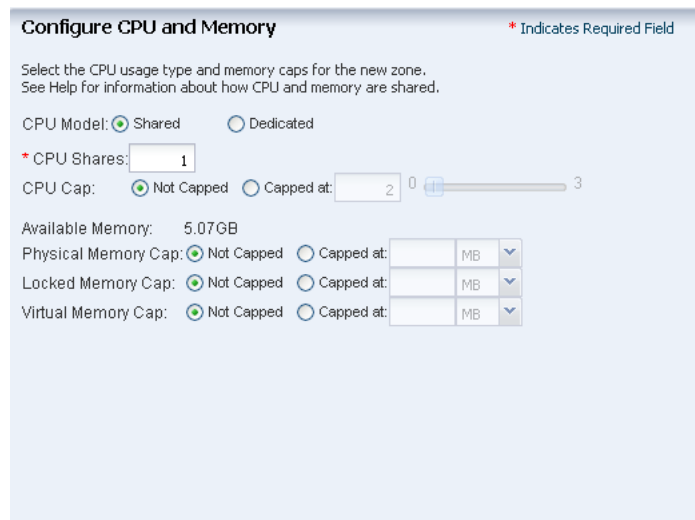
Description:

Tags:

Tag Name	Value
legacy.tags	agent

Library to store zone metadata: Local Storage Library (10-79-204-204)

4. Retain the CPU and memory specification as described for the zone and click **Next**.



The screenshot shows the 'Configure CPU and Memory' wizard. It starts with the instruction 'Select the CPU usage type and memory caps for the new zone. See Help for information about how CPU and memory are shared.' Below this, there are several settings: 'CPU Model' with radio buttons for 'Shared' (selected) and 'Dedicated'; '* CPU Shares' with a text box containing '1'; 'CPU Cap' with radio buttons for 'Not Capped' (selected) and 'Capped at' followed by a slider from 0 to 3; 'Available Memory' showing '5.07GB'; and three memory cap settings (Physical, Locked, and Virtual) each with radio buttons for 'Not Capped' (selected) and 'Capped at' followed by a text box and a unit dropdown menu set to 'MB'.

Configure CPU and Memory * 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: 1

CPU Cap: ☒ Not Capped ☐ Capped at: 2 0 3

Available Memory: 5.07GB

Physical Memory Cap: ☒ Not Capped ☐ Capped at: MB

Locked Memory Cap: ☒ Not Capped ☐ Capped at: MB

Virtual Memory Cap: ☒ Not Capped ☐ Capped at: MB

5. Retain the zone setup parameters and click **Next**.

Specify Zone Setup * Indicates Required Field

Specify language, time zone, terminal-type and root password for the Zone.

Language: C

Time Zone: GMT

Terminal Type: X Terminal Emulator

* Hostname: Myzone11_Clone

* NFSv4 Domain Name: dynamic

Root Password: *Leave empty to keep existing password*

Confirm Password: *Leave empty to keep existing password*

☒ Automatically boot zone when the global zone is booted

☒ Automatically boot zone after creation

6. In the Configure Zone File Systems, retain the file system as described.
- If required, you can change only the Reserved and Quota size of the file system.
- Click **Next**.

Configure Zone File Systems

Select the file systems that you want to manage.

Note - You cannot change the file system from managed to unmanaged.

File System	Man... Stor...	Mount Point	Reserved (GB)	Quota (GB)	Access	Type
/	<input checked="" type="checkbox"/>		8	8.00	Read/Write	filesystem
/export	<input checked="" type="checkbox"/>		2.00	2.00	Read/Write	filesystem

7. Select the library for the zone storage. Enter the size of the virtual disk.
- Click **Next**.

Configure Zone Storage

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

Recommended Storage Size: 20 GB
Currently Accumulated Storage: 20 GB

Storage

+

Library	Virtual Disk Name	Size
Library (10-79-204-204)	test_zone2_C-disk-0	20.00

- Select the IP stack and the networks that must be connected to the zone. In this example, maintain the network connections as described for the selected zone. Enter the IP address for the cloned zone to be connected to the networks.

Click **Next**.

Specify Networks

Specify the type of IP Stack for the zone, and then select and configure the zone network interfaces.

Zone IP Stack: ☐ Exclusive IP Stack ☒ Shared IP Stack

Network Interfaces

+

Network	P-... / VL... ID	NIC	Address Allocation Method	Zone IP
192.0.2.0/24.1	-	nge0	Use Static IP	192.0.2.241
192.0.2.0/24.1	-	e1000g0	Use Static IP	192.0.2.243

- Select **None** for the name service.

Click **Next**.

Specify Naming Services * Indicates Required Field

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

Name Service: ☒ NONE ☐ DNS ☐ NIS ☐ NIS+ ☐ LDAP

10. View the summary of the information provided for the replication.

Click **Finish** to replicate the zone.

Summary

Click Finish to replicate the zone. When the Replicate Zone job is complete, the new zone appears in the Assets.

Zone Name: test_zone2_Clone

Description:

Tags:

Tag Name	Tag Value
legacy.tags	agent

CPU Model: Shared

CPU Shares: 1

CPU Cap:

Physical Memory Cap:

Locked Memory Cap:

Virtual Memory Cap:

Library to store zone metadata: Local Storage Library (10-79-204-204)

Language: C

Time Zone: GMT

Terminal Type: xterm

Host: test_zone2_Clone

The zone replication job is started and you can view the new zone in the Assets section.

What's Next?

You can manage the lifecycle of your zones. See [Related Articles and Resources](#) for more information about zones.

Related Articles and Resources

The Oracle Enterprise Manager Ops Center 12c documentation is located at http://docs.oracle.com/cd/E59957_01/index.htm.

See the following guides for more information:

- *Oracle Enterprise Manager Ops Center Virtualize Reference* for information about zones and server pools.

- *Oracle Enterprise Manager Ops Center Administration Guide* for information about user roles and permissions.
- *Oracle Enterprise Manager Ops Center Command Line Interface*

See the Operate How To available at http://docs.oracle.com/cd/E59957_01/nav/operate.htm.

See the Deploy How To available at http://docs.oracle.com/cd/E59957_01/nav/deploy.htm.

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