Oracle® VM

Manager Getting Started Guide for Release 3.4



Oracle Legal Notices

Copyright © 2011, 2016 Oracle and/or its affiliates. All rights reserved.

This software and related documentation are provided under a license agreement containing restrictions on use and disclosure and are protected by intellectual property laws. Except as expressly permitted in your license agreement or allowed by law, you may not use, copy, reproduce, translate, broadcast, modify, license, transmit, distribute, exhibit, perform, publish, or display any part, in any form, or by any means. Reverse engineering, disassembly, or decompilation of this software, unless required by law for interoperability, is prohibited.

The information contained herein is subject to change without notice and is not warranted to be error-free. If you find any errors, please report them to us in writing.

If this is software or related documentation that is delivered to the U.S. Government or anyone licensing it on behalf of the U.S. Government, then the following notice is applicable:

U.S. GOVERNMENT END USERS: Oracle programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, delivered to U.S. Government end users are "commercial computer software" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, use, duplication, disclosure, modification, and adaptation of the programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, shall be subject to license terms and license restrictions applicable to the programs. No other rights are granted to the U.S. Government.

This software or hardware is developed for general use in a variety of information management applications. It is not developed or intended for use in any inherently dangerous applications, including applications that may create a risk of personal injury. If you use this software or hardware in dangerous applications, then you shall be responsible to take all appropriate fail-safe, backup, redundancy, and other measures to ensure its safe use. Oracle Corporation and its affiliates disclaim any liability for any damages caused by use of this software or hardware in dangerous applications.

Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.

Intel and Intel Xeon are trademarks or registered trademarks of Intel Corporation. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. AMD, Opteron, the AMD logo, and the AMD Opteron logo are trademarks or registered trademarks of Advanced Micro Devices. UNIX is a registered trademark of The Open Group.

This software or hardware and documentation may provide access to or information about content, products, and services from third parties. Oracle Corporation and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to third-party content, products, and services unless otherwise set forth in an applicable agreement between you and Oracle. Oracle Corporation and its affiliates will not be responsible for any loss, costs, or damages incurred due to your access to or use of third-party content, products, or services, except as set forth in an applicable agreement between you and Oracle.

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

Oracle customers that have purchased support have access to electronic support through My Oracle Support. For information, visit http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info or visit http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs if you are hearing impaired.

Abstract

Document generated on: 2016-03-21 (revision: 5492)

Abstract

This tutorial describes how to get started with Oracle VM, and walks you through discovering Oracle VM Servers, registering storage, setting up networking, setting up a storage repository and importing resources into it, creating a server pool and creating virtual machines.

You should read and follow this tutorial if you are new to Oracle VM and want to quickly get up and running.

Table of Contents

Preface	. v
1 Audience	. v
2 Related Documents	. v
3 Command Syntax	. v
4 Conventions	vi
1 Getting Started with Oracle VM	. 1
2 Discover Oracle VM Servers	. 3
2.1 Discovering Oracle VM Servers	. 4
3 Discover Storage	. 7
3.1 Discovering a file server	. 7
3.2 Discovering a SAN server (storage array)	. 9
4 Create a Virtual Machine Network	15
4.1 Creating a virtual machine network	15
5 Create a Server Pool	21
5.1 Creating a server pool	21
6 Create a Storage Repository	25
6.1 Creating a storage repository	25
7 Add Resources to Storage Repository	29
7.1 Importing a virtual appliance	29
7.2 Importing a virtual machine template	30
7.3 Importing an ISO file	32
8 Create Virtual Machines	35
8.1 Creating a virtual machine from a template	35
8.2 Creating a virtual machine from a virtual appliance	37
8.3 Creating a virtual machine from an ISO file	38
8.4 Starting a virtual machine and connecting to the console	42
Glossary	45

Preface

Table of Contents

1	Audience	. v
2	Related Documents	v
3	Command Syntax	. v
4	Conventions	vi

The Oracle VM Manager Getting Started Guide describes key tasks for users who are learning how to work with Oracle VM.

1 Audience

The Oracle VM Manager Getting Started Guide is intended for system administrators and end users who want to get started with Oracle VM.

2 Related Documents

For more information, see the following documents in the Oracle VM documentation set:

- Oracle VM Release Notes
- Oracle VM Installation and Upgrade Guide
- Oracle VM Concepts Guide
- Oracle VM Manager Getting Started Guide
- Oracle VM Manager User's Guide
- Oracle VM Manager Command Line Interface User's Guide
- Oracle VM Administrator's Guide
- Oracle VM Windows Paravirtual Drivers Installation Guide
- Oracle VM Web Services API Developer's Guide
- Oracle VM Security Guide
- Oracle VM Licensing Information User Manual

You can also get the latest information on Oracle VM by going to the Oracle VM Web site:

http://www.oracle.com/us/technologies/virtualization/oraclevm

3 Command Syntax

Oracle Linux command syntax appears in monospace font. The dollar character (\$), number sign (#), or percent character (%) are Oracle Linux command prompts. Do not enter them as part of the command. The following command syntax conventions are used in this guide:

Convention	Description				
backslash \	A backslash is the Oracle Linux command continuation character. It is used in command examples that are too long to fit on a single line. Enter the command as displayed (with a backslash) or enter it on a single line without a backslash:				
	dd if=/dev/rdsk/c0t1d0s6 of=/dev/rst0 bs=10b \ count=10000				
braces { }	Braces indicate required items:				
	.DEFINE {macrol}				
brackets []	Brackets indicate optional items:				
	cvtcrt termname [outfile]				
ellipses	Ellipses indicate an arbitrary number of similar items:				
	CHKVAL fieldname value1 value2 valueN				
italics	Italic type indicates a variable. Substitute a value for the variable:				
	library_name				
vertical line	A vertical line indicates a choice within braces or brackets:				
	FILE filesize [K M]				
forward slash /	A forward slash is used as an escape character in the Oracle VM Manager Command Line Interface to escape the special characters ", ', ?, /, <, >. Special characters need only be escaped when within single or double quotes:				
	create Tag name=MyTag description="HR/'s VMs"				

4 Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
monospace	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

Chapter 1 Getting Started with Oracle VM

This tutorial describes how to get started with Oracle VM, and walks you through discovering Oracle VM Servers, registering storage, setting up networking, setting up a storage repository and importing resources into it, creating a server pool and creating virtual machines.

You should read and follow this tutorial if you are new to Oracle VM and want to quickly get up and running.

This tutorial includes a visual indicator graphic to show you where you are in relation to the tutorial steps, as shown below.



Chapter 2 Discover Oracle VM Servers

Table of Contents

Getting Started						
Discover Oracle VM Servers	Discover storage	Create a virtual machine network	Create a server pool	Create a storage repository	Add resources to storage repository	Create virtual machines

When you log into Oracle VM Manager, the Servers and VMs tab is displayed.

Figure 2.1 Default screen



When you first log in a tutorial is displayed in the **Getting Started** tab. To hide the tutorial, click the **Collapse Pane**, arrow to the right of the management pane.

When you add <u>Oracle VM Servers</u> to your Oracle VM Manager environment, this process is known as <u>discovering</u> Oracle VM Servers. This term is used often in this tutorial. The first thing you should do to set up your virtualization environment is to discover your Oracle VM Servers.

When an Oracle VM Server is discovered, it contains some basic information about itself, and about any immediate connectivity to shared storage arrays, but it is considered to be in an unconfigured state. Any storage attached to the Oracle VM Server is also discovered. For more information on discovering an Oracle VM Server, see Discover Servers.

Depending on your hardware and networking configuration, external storage may be automatically detected during discovery of the Oracle VM Servers. This is always the case with local <u>OCFS2</u> storage on an Oracle VM Server.

When you have discovered your Oracle VM Servers, you should next discover your storage.

2.1 Discovering Oracle VM Servers

This example walks through discovering three Oracle VM Servers. Replace the IP addresses for those of your own servers.

To discover Oracle VM Servers:

- 1. Click the Servers and VMs tab, if not already selected.
- 2. Click **Discover Servers** Is in the toolbar.



3. Enter the Oracle VM Agent password for the Oracle VM Server(s) to be discovered, this should be set to the same password for each server that is intended to be grouped together in a <u>server pool</u>. Also enter the IP addresses or hostnames for the Oracle VM Server(s). Click **OK**.

Liscover Servers		٢
* Oracle VM Agent Password:	•••••	
* IP Addresses/DNS Hostnames:	Ca-virtdoc-server1 ca-virtdoc-server2 ca-virtdoc-server3 10.147.25.191 10.147.25.192 10.147.25.193 10.147.25.194	
Enter DNS hostnames, IP address (Ranges must be in the format 192	es or IP address ranges on separate lines. .168.10.2-10)	
		Cancel OK

The Oracle VM Servers are discovered and added to the **Unassigned Servers** folder in the **Servers and VMs** tab. The displayed name of a discovered Oracle VM Server is the assigned DNS name, and not the IP address. You can edit the name after the Oracle VM Server is discovered. For more information on editing an Oracle VM Server, see Edit Server.

Server Pools Name Unassigned Servers No Server Ca-server1001.us.oracle.com ca-server1003.us.oracle.com Ca-server1003.us.oracle.com ca-virtdoc-ovs1.us.oracle.com Ca-virtdoc-ovs1.us.oracle.com ca-virtdoc-ovs2.us.oracle.com Ca-virtdoc-ovs4.us.oracle.com ca-virtdoc-ovs4.us.oracle.com Ca-server1001.us.oracle.com ca-virtdoc-ovs4.us.oracle.com	Pools found	Tag(s) Keymap	Virtual IP M	aster Server	Pool File System	
)		>
Job Summary: 21 Total Jobs 0 Pending 0	In Progress 🔞 14 Failed	Aborted 🙆 7 Con	mplete	-		
escription Status	Progress Me	essage Times	stamp	Duration	Abort	Details
scover Server on 10.147.25.194 Success		Dec 0	9, 2015 9:50:43 am	5s	Abort	Details
scover Server on 10.147.25.193 Success		Dec 0	9, 2015 9:50:32 am	5s	Abort	Details
		Dec 0	9, 2015 9:50:19 am	5s	Abort	Details

Chapter 3 Discover Storage

Table of Contents

3.1 Discovering a file server	7
3.2 Discovering a SAN server (storage array)	. 9

Getting Started						
Discover Oracle VM Servers	Discover storage	Create a virtual machine network	Create a server pool	Create a storage repository	Add resources to storage repository	Create virtual machines

Storage refers to two different types of disk space: the space available for environment resources such as virtual machine templates and ISO files, and the logical or physical disks used by *virtual machines*.

Virtual machines use two types of storage, as follows:

- Virtual disks: disk image files on a file system.
- Raw physical disks: LUNs accessed directly by the virtual machine.

A storage repository can be any of the following:

- iSCSI: Abstracted LUNs or raw disks accessible over existing Ethernet infrastructure (SAN Servers).
- FCP: Abstracted LUNs or raw disks accessible over Fibre Channel host bus adapters (SAN Servers).
- NFS: File-based storage over existing Ethernet infrastructure (NAS or File Servers).

The first step, before you can discover storage, is to configure the storage repositories that contain environment resources. You configure the storage repository outside of the Oracle VM environment. This step includes tasks such as creating and exporting file system mounts on an NFS server. For more information about discovering and configuring storage, see Storage Tab.

In addition to the storage entities you require for storage repositories, you should make sure you leave at least 12 GB of disk space for each <u>server pool file system</u>. The server pool file system is used to hold the server pool and cluster data, and is also used for cluster heartbeating. You create server pool file systems the same way you create storage entities for storage repositories. For more information about the use and management of clusters and server pools, see How do Server Pool Clusters Work?.

Your storage may have been automatically discovered when you discovered your Oracle VM Servers. If not, you must discover it. If your storage server exposes a writable file system, discover the file server using the procedure in Discover File Server. If your storage server exposes raw disks (SAN volumes, iSCSI targets and LUNs) discover the SAN servers using the procedure in Discover SAN Server.

The following examples show how to discover a file server, and a SAN server so that your storage is ready to be used to create a storage repository or server pool file system.

3.1 Discovering a file server

This example uses a *file server* storage type (an NFS share). Replace the IP address for that of your own file server.

To discover a file server:

- 1. Click the **Storage** tab.
- 2. Select Discover File Server 🛎 from the toolbar.

1	He <u>a</u> lth <u>S</u> ervers and VMs <u>F</u>	epositories <u>N</u> etworking <u>Sto</u> rage Reports and Resources <u>J</u> ob	s
	File Servers SAN Servers Local File Systems Shared File Systems	View - Perspective: File Servers 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	0

3. The **Discover a File Server** wizard is displayed. Select the Oracle VM Storage Connect plug-in for the storage type, in this case we are using the **Oracle Generic Network File System** Oracle VM Storage Connect plug-in. Enter a name for the storage, and the IP address of your file server, then click **Next**.

e Server Parameters	* Storage Plug-in:	Oracle Generic Network File System (1.1.0) -
d Admin Servers	* Name:	MyNFSServer
ant Defrach Convers	* Access Host (IP) Address:	ca-sastor1.us.oracle.com
eur Reliesit Servers	Uniform Exports:	S
ct File Systems		
	Description: NFS filer for storage re	epositories and server pool file systems.
	Description: NFS filer for storage re	positories and server pool file systems.
	Description: NFS filer for storage re	epositories and server pool file systems.
	Description: NFS filer for storage re	epositories and server pool file systems.

4. Assign one or more Oracle VM Servers to perform any required administration on the file server. Click **Next**.

File Server Parameters Add Admin Servers Select Refresh Servers Select File Systems Select File Systems Select File System Select F	省 Discover a File Server				٥
	File Server Parameters Add Admin Servers Select Refresh Servers Select File Systems	Select the Server(s) that can be used for a System in a clustered Server Pool.) Available Admin Server(s):	dministra	tion. (Selecting one or more Admin Servers) Selected Admin Server(s): Ca-server1001.us.oracle.com ca-server1002.us.oracle.com ca-virtdoc-ovs1.us.oracle.com ca-virtdoc-ovs2.us.oracle.com ca-virtdoc-ovs3.us.oracle.com ca-virtdoc-ovs4.us.oracle.com	is required when using a Network File
Dravious Cancel Nevt					Provinus Concel Next

5. If any file systems on the file server contain existing virtual machine resources they are listed on this step of the wizard. Select the corresponding check box to discover the content of the selected file

systems. This allows Oracle VM Manager to add the existing resources to the system. Click **Finish** to complete the file server discovery.

Server Parameters			,
Admin Servers	Name F		
		nte on ca-sastori us oracle com:/export/huild dr. conving	6
ect Refresh Servers		nts on ca-sastor1.us.oracle.com/export/ca-2n1036.dbcn_tcndumn	
ect File Systems		nfs on ca-sastor1.us.oracle.com:/export/ca-adc-xen5 migration	
		nfs on ca-sastor1.us.oracle.com:/export/ca-ostest304 tmpl bldr	
		nfs on ca-sastor1.us.oracle.com:/export/dbdumps	
		nfs on ca-sastor1.us.oracle.com:/export/git_svn_dr	
		nfs on ca-sastor1.us.oracle.com:/export/mwtest	8
		nfs on ca-sastor1.us.oracle.com:/export/virtdoc-admin1	
		nfs on ca-sastor1.us.oracle.com:/export/virtdoc-repo1	
		nfs on ca-sastor1.us.oracle.com:/export/virtdoc-repo2	
		nfs on ca-sastor1.us.oracle.com:/export/virtdoc-svrpool1	
		nfs on ca-sastor1.us.oracle.com:/export/virtdoc-svrpool2	

At the end of the file server discovery a refresh operation is triggered to make sure all file systems available on the file server appear in Oracle VM Manager. When the operation is complete, the available file systems are displayed in the management pane when you select the file server.

You can change the name of the file systems by selecting the file system in the table and clicking **Edit File System** \checkmark in the management pane toolbar.

🖆 🍯 🧪 💥 🚱 🛛 🕐	View +	Perspective:	File Systems	- / 3	🗶 🔞 💷 🔇 🛛	Name Filter:			<u>G</u> o
File Servers	Namo		Event Severity	Refreshed		Size (GiB)		Llood By	Description
MyNFSServer	Indulte	— ~	Event Seventy	Reffestieu	Free	Used	Total	Oseu By	Description
SAN Servers	nfs on ca	sastor1.us.or	Informational	No	1,969.89	5,198.11	7,168.00		
Local File Systems	nfs on ca	sastor1.us.or	Informational	No	27,000.54	65.16	27,065.70		
Shared File Systems	nfs on ca	sastor1.us.or	Informational	No	17.24	2.38	19.62		
	nfs on ca	sastor1.us.or	Informational	No	27,000.54	0.00	27,000.54		
	nfs on ca	sastor1.us.or	Informational	No	899.76	0.24	900.00		
	nfs on ca	sastor1.us.or	Informational	No	27,000.54	104.02	27,104.56		
	nfs on ca	sastor1.us.or	Informational	No	23.77	6.23	30.00		
	nfs on ca	sastor1.us.or	Informational	No	1.00	0.00	1.00		
	nfs on ca	sastor1.us.or	Informational	No	150.00	0.00	150.00		
	nfs on ca	sastor1.us.or	Informational	Yes	100.00	0.00	100.00		
	nfs on ca	sastor1.us.or	Informational	Yes	27,000.54	0.00	27,000.54		
Job Summary: 🛄 36 Total Jobs	s 🐻 0 Pending 📮 0	In Progress	🗟 14 Failed 🚺	0 Aborted	22 Complete				
Description	Status	Progress	Messa	je i	Timestamp		Duration	Abort	Details
Refresh File System: nfs on ca-sastor1.us.	oracle.com Success				Dec 09, 2015 10:26	i:03 am	1s	Abort	Details

3.2 Discovering a SAN server (storage array)

This example uses an iSCSI SAN server. Replace the information here for that of your own SAN server.

To discover a SAN server:

- 1. Click the **Storage** tab.
- 2. Click Discover SAN Server 🖹 in the toolbar.

I	Hegith S	ervers and VMs	Repositories	Networkin	g St <u>o</u> rag	e Reports and R	esources ,	lobs			
	88	3		View -	Perspective:	SAN Servers 🚽 🛛 🔓	/×0	1 (2)			
	File Servers		Nomo	A 177	Status	Size (GiB)				Description	
	> 🔓 SAN S	SAN Servers		INdille	. .	Status	Allocated	Free	Used	Total	Description
	📄 Local	File Systems		Unmanage	d FibreChann		0.00	0.00	0.00	0.00	
	📄 Share	d File Systems		Unmanage	d ISCSI Stor		0.00	0.00	0.00	0.00	

3. The **Discover SAN Server** wizard is displayed. Enter a name for the SAN server and optional description. Select **iSCSI Storage Server** from the **Storage Type** drop-down list, and the plug-in type for your SAN server, which in this example is **Oracle Generic SCSI Plugin**. Click **Next**.

B Discover SAN Server			٥
	t Nama	Mulcoclination	
Discover SAN Server	" Name:	MyISCSIServer	
Access Information (if required)	Description:	A SAN server to host server pool file systems and repositories.	
Set Storage Name (if required)			
Add Admin Servers	Storage Type:	iSCSI Storage Server	
Manage Access Group (if required)	* Storage Plug-in:	Oracle Generic SCSI Plugin (.	
	Plug-in Private Data:		
	* Admin Host:		
	* Admin Username:		
	* Admin Password:		
			Cancel Next

4. The Access Information step is displayed.

Discover SAN Server	View 🗸 💠 🥢 💥					
	Access Host	Access Port	Access Username			
Access Information (if required)	No data to display					
Set Storage Name (if required)						
Add Admin Servers						
Manage Access Group (if required)						
	Use CHAP (Applies to all A	cess Hosts): 🗌				

Enter one or more access hosts to create network paths to the storage. To add multiple paths (for *multipathing*), add multiple access hosts. Click **Create New Access Host** * to add access hosts for the SAN server.

The **Create Access Host** dialog box is displayed.

Create Access Ho	st	
* Access Host:	10.172.76.130	
* Access Port:	3260	
Access Username:		
Access Password:		
Enable CHAP for Password.	or all Access Hosts to enable the	Username and
		Cancel OK

Enter the IP address and access port of the host that has access to the SAN server. Typically, this is the IP address of the SAN server and the default access port of 3260. Click **OK**.

cover SAN Server	View 🗸 💠 🧪 💥		
	Access Host	Access Port	Access Username
ccess Information (if required)	10.172.76.130	3260	
et Storage Name (if required)			
dd Admin Servers			
lanage Access Group (if required)			
	Use CHAP (Applies to all	Access Hosts): 🗌	

Repeat this step for each access host, for example, you may have access hosts such as 10.172.76.130, 10.172.76.131, 10.172.77.130, and 10.172.77.131 to enable multipathing. When you have entered all access hosts, click **Next**.

- 5. For most SAN servers the wizard moves straight to the Add Admin Servers step. However, if you have vendor-specific storage hardware with an admin host handling more than one storage array, such as certain HP EVAs and EMC arrays, enter the name of the array to be used for the new SAN server. The wizard recognizes this type of storage and displays the Set Storage Name step when applicable. Enter the storage name and click Next.
- 6. The Add Admin Servers step is displayed.

Discover SAN Server	Available Server(s)	Selected Server(s)
Access Information (if required) Set Storage Name (if required) Add Admin Servers Manage Access Group (if required)		MyServer1 MyServer2 MyServer3 ca-virtdoc-ovs2.us.oracle.com ca-virtdoc-ovs3.us.oracle.com ca-virtdoc-ovs4.us.oracle.com
	Admin servers need network connectivity	to the admin port of the network storage server.

Use the arrow buttons to move the required Oracle VM Servers to the **Selected Servers** box. This selects which Oracle VM Servers are to be made available to perform Oracle VM related admin operations on the SAN server. Click **Next**.

7. The Manage Access Group step is displayed.

iscover SAN Server	View 🗸 🕂 🦯 💥
	Name Description
ccess Information (if required)	Default access group @ MyISCSI
et Storage Name (if required)	
dd Admin Servers	
anage Access Group (if required)	
	Access groups may be managed in the 'Storage' area by selecting the 'Access Group' perspective for a SAN server.

This example uses a generic ISCSI SAN server, so a default access group is created. Select the default access group in the table and click **Edit Access Group** \checkmark , then select the **Storage Initiators** tab in the **Edit Access Group** dialog box.

Access Group Storage Initiat	ors	
vailable Storage Initiators:		Selected Storage Initiators:
	> > \$	ca-virtdoc-ovs1.us.oracle.com:iqn.1988-1 ca-virtdoc-ovs2.us.oracle.com:iqn.1988-1 ca-virtdoc-ovs3.us.oracle.com:iqn.1988-1 ca-virtdoc-ovs4.us.oracle.com:iqn.1988-1 MyServer1:iqn.1988-12.com.oracle:3edeč MyServer2:iqn.1988-12.com.oracle:381f6 MyServer3:iqn.1988-12.com.oracle:63b2
		(())))

Select and move the Oracle VM Servers into the **Selected Storage Initiators** box to add storage initiators to each Oracle VM Server. Click **OK**.

- 8. Click **Finish** to complete the SAN server discovery operation.
- 9. Select the SAN server in the navigation pane, and select **Physical Disks** from the **Perspective** dropdown list in the management pane. The list of physical disks on the server is listed in the table. These disks are automatically presented to the selected Oracle VM Servers.

🖆 📙 🥖 💥 🐏 🛛 🕄	View - Perspe	ctive: Physical Disk	s 🗾 🕂 🖊 🗶 🐂 💾 🦉	Name	Filter 📩			<u>G</u> 0
File Servers	Name 🔺	Event Severity	Size (GiB) Server	Status	Shareable	Description	VM(s)	
SAN Servers	FreeBSD (1)	Informational	50.0 ca-virtdoc-ovs2	online	No			
MyISCSIServer	FreeBSD (2)	Informational	50.0 ca-virtdoc-ovs2	online	No			
Generic iSCSI Volume Group	FreeBSD (3)	Informational	20.0 ca-virtdoc-ovs2	online	No			
Unmanaged EibreChannel Storage Array	FreeBSD (4)	Informational	1024.0 ca-virtdoc-ovs2	online	No			
Charter Line Sustainer Course Final Local File Systems	FreeBSD (5)	Informational	20.0 ca-virtdoc-ovs2	online	No			
	FreeBSD (6)	Informational	40.0 ca-virtdoc-ovs2	online	No			
	FreeBSD (7)	Informational	40.0 ca-virtdoc-ovs2	online	No			
Shared File Systems	FreeBSD (8)	Informational	20.0 ca-virtdoc-ovs2	online	No			
	FreeBSD (9)	Informational	50.0 ca-virtdoc-ovs2	online	No			

Job Summary: 41 Total Jobs 🔞 0 Pending 🔋 1 In Progress 3 Failed 3 Complete									
Description	Status	Progress	Message	Timestamp	Duration	Abort	Detail		
Add Storage Initiator: iqn.1988-12.com.oracle:8cc249	Child Job Q			Dec 08, 2015 4:4		Abort	Detail		
Add Storage Initiator: iqn.1988-12.com.oracle:cfac251	Success			Dec 08, 2015 4:3	18ms	Abort	Detail		
Add Storage Initiator: ign 1988-12 com oracle:91cd33	Success			Dec 08 2015 4:3	29ms	Abort	Detail		

Chapter 4 Create a Virtual Machine Network

Table of Contents

Getting Started						
Discover Oracle VM Servers	Discover storage	Create a virtual machine network	Create a server pool	Create a storage repository	Add resources to storage repository	Create virtual machines

Oracle VM has a number of network functions: Server Management, Live Migrate, Cluster Heartbeat, Virtual Machine, and Storage. The Server Management, Live Migrate and Cluster Heartbeat roles are automatically assigned to the management network when you discover Oracle VM Servers. The Virtual Machine and Storage roles are not automatically created, and you must manually create these. The Storage role is only required for iSCSI-based storage, so for the purposes of the NFS-based storage used in this tutorial, is not required. We do, however, need to create a network with the Virtual Machine role. This can be assigned to the existing management network, or a new network can be created and the Virtual Machine role assigned to it. This tutorial shows you how to create a new network and assign the Virtual Machine role to it. See Understanding Networks for information on creating and configuring networks.

4.1 Creating a virtual machine network

This example creates a virtual machine network using network interface cards (NICs) on the Oracle VM Servers discovered earlier. In this example we are using bonded Ethernet ports. Each Oracle VM Server should have a set of Ethernet ports to use for the virtual machine network. Oracle recommends at least two ports per Oracle VM Server, one for the management network, and one for a network with the Virtual Machine role. Replace the information in this example with that of your Oracle VM Servers and environment.

To create a virtual machine network:

1. Click the **Networking** tab, then the **Networks** subtab.

- Networks	5 I	VLAN Interfaces	Virtual NICs						
View 👻 🍦	/ 🗙 🕄)							
					N	etwork Channe	s		
Name		ID	Server	Server Management	Cluster Heartbeat	Live Migrate	Storage	Virtual Machine	Description
10 147 24 0		0a931800		1	√	V			

Click Create New Network... + in the toolbar to start the Create Network wizard. In this example we
use the Ethernet ports on each Oracle VM Server to create a network for virtual machine traffic. Select
Create a network with Ports/Bond Ports/VLAN Interfaces and click Next.



3. At the **Create Network** step of the wizard, enter a name for the network and select the network functions. The **Network Uses** fields are where you decide which network functions are to be assigned to the network. Select **Virtual Machine** and click **Next**.

e and Use. VMNetwork etwork shared between ual machines.	Network Uses:	 Management Live Migrate Cluster Heartbeat ✓ Virtual Machine Storage 	

4. At the **Select Ports** step of the wizard, we need to add an Ethernet port from each Oracle VM Server and add them to the network. Click **Add New Ports...** + .

	view 🕈 🌗	/ 🗶					
	Port Name	Server	MTU	Addressing	IP Address	Netmask	Bonding
orts	No data to displ	ay					
IN Interfaces							

5. The Add Ports to Network dialog box is displayed.



Expand the **Unassigned Servers** folder until you see all the ports for each Oracle VM Server. Select a free port to use on each Oracle VM Server for the network and click **OK**.

6. The Select Ports step of the wizard is displayed again. Click Next.

ate Network	View 👻 💠 🥢	<pre>/ ×</pre>					
	Port Name	Server	MTU	Addressing	IP Address	Netmask	Bonding
ect Ports	eth1 on ca-serv	ca-server1001.u	1500	None			No
	eth1 on ca-serv	ca-server1002.u	1500	None			No
ect VLAN Interfaces	eth1 on ca-serv	ca-server1003.u	1500	None			No

7. The **Select VLAN Interfaces** step of the wizard is displayed. In this example we are not using VLAN interfaces, so click **Finish** to create the network.

		<i>6.0</i>						
	Name	VLAN ID	Server	Port	MTU	Addressing	IP Address	Netmask
	No data to display							
nterfaces								

The virtual machine network is created and listed in the table. This virtual machine network is ready to use when creating virtual machines.

Health Servers a	nd VMs <u>R</u> epositories	Networking	St <u>o</u> rage	Repor <u>t</u> s a	nd Resources	Jobs	-				(
View 🗸 💠 🥢 💥	3										_
				N	letwork Channel	Is					
Name 🔺		Server	Server Management	Cluster Heartbeat	Live Migrate	Storage	Virtual Machine	Description			
0.147.24.0	0a931800		√	√	√						
/yVMNetwork	10c7bce77c						√	A network s	hared between virt	tual machines.	
Job Summary:	🗍 53 Total Jobs 🛛 🔞 0 Per	nding 🔋 🛛 In P	Progress 🔞 14 F	Failed 🙆 🖸	Aborted 🚳	39 Complete					
Description		Status	Progress	Message	Times	tamp		Duration	Abort	Details	
Add Ethernet Port: eth	on ca-server1003.us.oracle.c	Success			Dec 0	9, 2015 10:45:4	43 am	12s	Abort	Details	Ê
Add Ethernet Port: eth1	on ca-server1002.us.oracle.c	Success			Dec 0	9, 2015 10:45:2	29 am	12s	Abort	Details	-

Chapter 5 Create a Server Pool

Table of Contents

Getting Started						
Discover Oracle VM Servers	Discover	Create a virtual machine network	Create a server pool	Create a storage repository	Add resources to storage repository	Create virtual machines

A <u>server pool</u> contains a group of <u>Oracle VM Servers</u>, which as a group perform <u>virtual machine</u> management tasks, such as <u>High Availability</u> (HA), implementation of resource and power management policies, access to networking, storage and repositories.

5.1 Creating a server pool

This example creates a server pool using the discovered Oracle VM Servers, and the server pool file system on the file system-based storage (NFS server). You need an IP address to use as the virtual IP address to enable clustering and HA. Replace the server pool information in this example with that of your environment.

To create a server pool:

- 1. Click the **Servers and VMs** tab.
- 2. Click Create Server Pool 🖄 in the toolbar.



3. The **Create a Server Pool** wizard is displayed. Enter the server pool information.

create Server Pool	* Server Pool Name:	MyServerPool		
dd Convoro	Virtual IP Address for the Pool:			
du servers	VM Console Keymap:	en-us (English, United States)	-	
ags(Optional)	VM Start Policy:	Best Server	•	
	Secure VM Migrate:			
	Clustered Server Pool:	S		
	Timeout for Cluster:	120 🖨 Seconds		
	Storage for Server Pool:	Network File System O Physical I	Disk	
	* Storage Location:		9	
	Description:			

Enter a name for the server pool. Note that you may also enter a virtual IP address for the server pool, however this is only used if all of the servers within the server pool belong to a release prior to Oracle VM Server Release 3.4.1.

Select **Clustered Server Pool** to enable clustering of the Oracle VM Servers in the server pool, which is required to enable HA.

The <u>server pool file system</u> is used to hold the server pool and cluster data, and is also used for cluster heartbeating. If you are using a file server for the server pool file system, select **Network File System** as the storage type to use for the server pool. If you are using a physical disk on a storage array as the server pool file system, select **Physical Disk** as the storage type. Click **Storage Location** to search for the server pool file system.

Network File Server: MyNFSServer V	lame Filter:		<u>G</u> 0	
Name	Size (GiB)	Free Size (GiB)	Refreshed	Path
nfs on ca-sastor1.us.oracle.com:/export/virtdo	100.0	100.0	Yes	ca-sastor1.us.oracle.com:/export/virtdoc-re
nfs on ca-sastor1.us.oracle.com:/export/virtdo	27000.54	27000.54	Yes	ca-sastor1.us.oracle.com:/export/virtdoc-re
nfs on ca-sastor1.us.oracle.com:/export/virtdo	50.0	50.0	Yes	ca-sastor1.us.oracle.com:/export/virtdoc-sv.
nfs on ca-sastor1.us.oracle.com:/export/virtdo	15.0	15.0	Yes	ca-sastor1.us.oracle.com:/export/virtdoc-sv.

Select the file system to use for the server pool file system and click OK.

Create Server Pool	* Server Pool Name:	MyServerPool	
Add Servers	Virtual IP Address for the Pool:		
Tags(Ontional)	VM Console Keymap:	en-us (English, United States)	
rags(optional)	VM Start Policy:	Best Server 🔹	
	Secure VM Migrate:		
	Clustered Server Pool:		
	Timeout for Cluster:	120 🖨 Seconds	
	Storage for Server Pool:	Network File System O Physical Disk	
	* Storage Location:	nfs on ca-sastor1.us.oracle.com:/export 🔍	
	Description:	A clustered server pool.	

Click Next to add Oracle VM Servers to the server pool.

4. The **Add Servers** step of the wizard is displayed. The **Hypervisor Filter** field allows you to specify the hypervisor type to use for the server pool. Add Oracle VM Servers to the **Selected Servers** column and click **Finish**.

Market Create a Server Pool					0
Create Server Pool Add Servers Tags(Optional)	Hypervisor Filter: Available Server(s Ca-virtdoc-ovs1.u ca-virtdoc-ovs2.u ca-virtdoc-ovs3.u ca-virtdoc-ovs4.u	Oracle VM x86) s.oracle.com s.oracle.com s.oracle.com s.oracle.com	Second seco	Selected Server(s) ca-server1001.us.oracle.com ca-server1003.us.oracle.com ca-server1003.us.oracle.com	lustered
				Previous <u>C</u> ancel Ne <u>x</u> t	<u>F</u> inish

The Oracle VM Servers are added to the server pool and ready to use to create virtual machines.

🖪 🛅 📓 🔍 🔇	View + P	Perspective: Server P	ools	<u> </u>	🐸 🛓 🖄 🖉 🏅	🗶 🥍 📫 🛗 🛙	1	*
Server Pools	Name	A 5	√ Tag(s) Ke	ymap V	/irtual IP	Master Server	Pool File System	
myserverPou ca-server1001.us.oracle.com ca-server1002.us.oracle.com ca-server1003.us.oracle.com ca-virtdoc-ovs2.us.oracle.com ca-virtdoc-ovs2.us.oracle.com ca-virtdoc-ovs2.us.oracle.com ca-virtdoc-ovs4.us.oracle.com Unassigned Virtual Machines		л 	ing rag etr	u3)	Jerver Foul File Syste	
Job Summary: 📋 49 Total Jobs 🔞 0 Pen	ding 🛛 📮 O In	Progress 🛛 🔯 14 Fail	ed 🛛 🚺 🛛 Abort	ed 🛛 🖗 35 Compl	lete			
escription	Status	Progress	Message	Timestamp		Duration	Abort Deta	ils
dd Server Pool: MyServerPool to Resource Group:	Success			Dec 09, 2015 1	.0:36:40 am	22ms	Abort Deta	ils
	0			D 00 0045 4		0.4-	A la sut	

For more information on creating server pools and adding Oracle VM Servers, see Create Server Pool and Edit Server Pool .

The next step is to create a storage repository to use for virtual machine resources.

Chapter 6 Create a Storage Repository

Table of Contents

6.1 Creating a storage repository 25

Getting Started		
Discover Oracle VM Servers	er e virtual machine network	Create a storage repository Add resources to storage repository Create virtual machines

A storage repository is where Oracle VM resources may reside on the storage you registered in Chapter 3, *Discover Storage*. Resources include <u>virtual machines</u>, <u>templates</u> for virtual machine creation, virtual machine virtual appliances</u>, ISO files (DVD image files), shared virtual disks, and so on.

You use Oracle VM Manager to create and configure storage repositories, and to present one or more storage repositories to Oracle VM Servers. When the storage repository is accessible, you can start adding storage resources and building virtual machines with those resources.

For more information about storage repositories, see Understanding Repositories.

6.1 Creating a storage repository

This example creates a storage repository to store virtual machine resources using an NFS file server. We use the larger of the file systems on our repository. Replace the file server and other names used in this example with that of your own environment.

To create a storage repository:

- 1. Click the Repositories tab.
- 2. Select Create New Repository... + from the toolbar.

He <u>a</u> lth <u>S</u> ervers and VMs	<u>R</u> epositories	Networking Storage Reports and Resources Jobs
 Show My Repositories Show All Repositories 	-	View • Perspective: Repositories • • • • • • • • • • • • • • • • • • •

3. In the **Create a Data Repository** dialog box, enter information about the repository.

-	* Repository Name:	MvNESRepository		
Repository Information				
Present to Servers	* Repository Location:	Network File Server Physical Disk		
	* Network File System:	nfs on ca-sastor1.us.oracle.com:/export/v	Q	
	Share Path:			
	Description:			

Enter a name for the repository. If you are using a file server for the repository, select **Network File Server** as the storage type to use for the **Repository Location**. If you are using a physical disk on a storage array for the repository, select **Physical Disk** as the storage type. Click to search for the storage location to use.

Network File Server:	MyNFSServer	lame Filter:		<u>G</u> 0	
Name		Size (GiB)	Free Size (GiB)	Refreshed	Path
nfs on ca-sastor1.us.ora	cle.com:/export/virtdo	100.0	100.0	Yes	ca-sastor1.us.oracle.com:/export/virtdoc-re
nfs on ca-sastor1.us.ora	cle.com:/export/virtdo	27000.54	27000.54	Yes	ca-sastor1.us.oracle.com:/export/virtdoc-re
ofs on ca-sastor1.us.ora	cle.com:/export/virtdo	50.0	50.0	Yes	ca-sastor1.us.oracle.com:/export/virtdoc-sv.

Select a file system in the table and click **OK**.

Click Next to present the new the new storage repository to Oracle VM Servers.

4. To enable your Oracle VM Servers to use the repository, you must *present* it to the Oracle VM Servers. Select the Oracle VM Servers and move them to the **Present to Server(s)** column and click **Finish**.

	Available Server(s)	Present to Server(s)
Repository Information	ca-virtdoc-ovs1.us.oracle.com	ca-server1001.us.oracle.com
Dresent to Convers	ca-virtdoc-ovs2.us.oracle.com	ca-server1002.us.oracle.com
Present to Servers	ca-virtdoc-ovs3.us.oracle.com	ca-server1003.us.oracle.com
	ca-virtdoc-ovs4.us.oracle.com	
		- 20
		8
		<i>m</i>

The repository is listed in the **Repositories** tab. To see information about the repository, expand the **Repositories** folder.

 Show My Repositories Show All Repositories Repositories Repositories ISOs VM Files VM Files VM Trimplates Vintual Appliances Virtual Disks 	Perspective: Info Image: Comparison of the system of
---	--

Job Summary: 158 Total Jobs 10 Pene	ding 🛛 🛱 0 In P	rogress 🛛 🔯 14 Fa	iled 🚺 0 Aborted	I 🙆 44 Complete			
Description	Status	Progress	Message	Timestamp	Duration	Abort	Details
Refresh File System: nfs on ca-sastor1.us.oracle.com	Success			Dec 09, 2015 10:55:47 am	808ms	Abort	Details
Present Repository: MyNFSRepository to Server: ca	Success			Dec 09, 2015 10:55:47 am	219ms	Abort	Details
Present Depository: MuNECDepository to Converse	Cuesees		m	Dec 00, 2015 10-55-46 am	040mo	Abort	Dotaile V

Chapter 7 Add Resources to Storage Repository

Table of Contents

7.1 Importing a virtual appliance	29
7.2 Importing a virtual machine template	30
7.3 Importing an ISO file	32

Getting Started					
Discover Oracle VM Servers	Create a virtual machine network	Create a server pool	Create a storage repository	Add resources to storage repository	Create virtual machines

<u>Virtual machines</u> require some form of installation media, whether it be a <u>virtual machine template</u>, virtual disk, ISO file, or mounted ISO file. Different <u>domain</u> types may require different installation source files. You can read about the different installation media in How is a Guest OS Installed on a Virtual Machine?.

The following examples show you how to import a <u>virtual appliance</u>, a virtual machine template, and an ISO file which are used in later steps to create virtual machines. A virtual machine template contains virtual machine configuration information, virtual disks that contain the operating system and any application software, packaged as an Oracle VM template file. A virtual appliance is similar to a virtual machine template, but in the open standard Open Virtualization Format (OVF) format. Older Oracle VM template files were packaged as Oracle VM template files, and the more recent templates are packaged in OVF format as virtual appliances. An operating system ISO file is an image of the CDROM or DVD used to perform an operating system installation.

In this tutorial we use a virtual appliance, a virtual machine template and an Oracle Linux ISO file downloaded from the Oracle Software Delivery Cloud:

https://edelivery.oracle.com/linux

To complete all the examples in this tutorial, download an Oracle VM template, either in the OVF format or as an Oracle VM template. Also download an ISO file of the Oracle Linux operating system. Uncompress (unzip) the Oracle VM template file so that it is in the *template*.tgz format, not the downloaded *template*.zip format. If you downloaded an Oracle VM template in OVF format, uncompress (unzip) the file so that it is in the *template*.during) the file so that it is in the *template*.ova format. Save the template files and ISO file on a web server. Templates and other installation media must be available on a web server, ftp server or NFS share before being imported into Oracle VM Manager.

7.1 Importing a virtual appliance

This example shows you how to import a <u>virtual appliance</u>. If you downloaded an Oracle VM template from the Oracle Software Delivery Cloud which contains a *template*.ova file, you should use this procedure to import the virtual appliance. A virtual appliance is the most recent format that Oracle uses to publish Oracle VM templates. Replace the name and URL of the following example with that of your virtual appliance.

To import a virtual appliance:

1. Click the **Repositories** tab. Select the repository in which to import the virtual appliance. Click **Virtual Appliances** in the navigation tree.

2. Click Import Virtual Appliance... de in the management pane toolbar.



3. The **Import Virtual Appliance** dialog box is displayed. Enter the URL to the virtual appliance you downloaded and stored on a web server, and the IP address or hostname of an optional proxy server to use when importing the virtual appliance. Click **OK** to import the virtual appliance.

🖢 Import Virtual Appliance		0
* Virtual Appliance download location:	http://ca-virtdoc-firestarter.us.oracle.com/share /OVM_OL7U1_x86_64_PVHVM.ova	
Proxy:		
Create VM: Server Pool:	None 🔽	
	Cancel	0 <u>K</u>

The import job can take some time to complete. When the import job is complete, the new virtual appliance is listed in the table.

 Show My Repositories Show All Repositories Repositories Repositories Sos Wirepository ISOs VM Files VM Templates Virtual Appliances Virtual Disks 		View + A Name V OVM_OL7	A PUL x86_64_PVHVM. Jul_x86_64_PVHVM. Jul_x86_64_PVHVM. Description U1_x Oracle Linu:	Image: Machines x OL7 update 1	Origin http://ca-virtdoc-firestarter Virtual Appliance Vi for x86_64	Description Import URL: http: ritual Disks	D 11865b57a7
Job Summary: 25 Total Jobs Description	s 🙆 0 Pendi	ing 📮 0 In P	rogress 🙆 2 Faile	d 🞑 0 Abort	ed 🗟 23 Complete	nestamn [turation
Job Summary: 25 Total Jobs Description	s CO Pendi	ing 📮 0 In P Status	rogress 2 Faile Progress	d 🚺 0 Aborto Message	ed 🚨 23 Complete	nestamp []	Duration
Job Summary: 25 Total Jobs Description Refresh metadata for File System: nfs on ca	s CO Pendi	ing 📮 0 In P Status Success	rrogress 🙆 2 Faile Progress I	d 🚺 0 Aborto Message	ed 🔀 23 Complete Tir De	nestamp E c 08, 2015 3:4 1	Duration 23ms
Job Summary: 25 Total Jobs Description Refresh metadata for File System: nfs on c: mport Virtual Appliance to Repository: MyR	s o Pendi ca-sastor1 s Repository s	ing 0 In F Status Success Success	rogress 🙆 2 Falle Progress I	d 🔽 0 Abort Message	ed 🔓 23 Complete Tir De De	nestamp [c 08, 2015 3:4 1 c 08, 2015 3:4 1	Duration 23ms m.39s

7.2 Importing a virtual machine template

This example shows you how to import a <u>virtual machine template</u>. If you downloaded an Oracle VM template from the Oracle Software Delivery Cloud which contains an *template*.tgz file, you should use this procedure to import the template. This format of a template is the older format used by Oracle to publish Oracle VM templates. Replace the name and URL of the template with that of your template.

To import a virtual machine template:

- 1. Click the **Repositories** tab. Select the repository in which to import the template. Select **VM Templates** in the navigation tree.
- 2. Click Import VM Template... din the management pane toolbar.

He <u>a</u> lth <u>S</u> ervers and VMs	<u>R</u> epositories	Networking	St <u>o</u> rage Repo	or <u>t</u> s and Resources	<u>J</u> obs
 Show My Repositories Show All Repositories Show All Repositories Repositories MyRepository ISOs VM Files VM Files VM Templates Virtual Appliances Virtual Disks 	*	View - 🛃 Name No data to display		Max. Memor (MB)	Max. Proce

3. The **Import VM Template** dialog box is displayed. Enter the URL to the template you downloaded and stored on a web server, and the IP address or hostname of an optional proxy server to use when importing the template. Click **OK** to import the template.

port VM Template to	Repository: MyRepository	
VM Template URLs:	http://ca-virtdoc-firestarter.us.oracle.com/share /OVM_OL5U7_template.tgz	
Proxy:		
iony:		
	Cancel	OK

The import job can take some time to complete. When the import job is complete, the new template is listed in the table.

	-	Name		Domain Type	Max. Memory (ME Memory (MB)	Max. Processors	Processors	Operating System	Descriptio
		▼ OVM_OL5U7_t	emplate.tgz	Xen PVM	2048	2048	2	2	None	Import UR
✓ Image: Very Repositories ✓ Image: Very Repository ✓ Image: Very Repository Image: Very Repositories ✓ Image:		Configur	ation	Networks	Disks	100	Boot C	irder:		
VM Files		Operating Sys	tem: None	Loon_template.tgz	Priority:	50	Networ	k Boot Path:		
VM Templates		Max. Process	ors: 2		Mouse Type:	OS Default	Restar	Action On Crash:	Restart	
Virtual Appliances		Processors:	2		Domain Type:	Xen PVM				
Virtual Disks		Max. Memory	(MB): 2048		High Availability:	No				
		Memory (MB):	2048		Huge Pages:	No				
		ID:	000	04fb0000140000fb4	7ffad0551660b					
		Description: Config File Ab Config File Mo	solute Path: ca- bunted Path: /O\	priod vitable inest port URLs: [http://ca sastor1.us.oracle.c /S/Repositories/000	a-virtdoc-firestarter.u om:/export/virtdoc-re 04fb0000030000891	is.oracle.com/share epo1/Templates/000 516d9e73d2eb8/Ten	/OVM_OL5U7_tem /4fb0000140000fb4 nplates/0004fb000	nplate.tgz] 7ffad0551660b/vm 0140000fb47ffad05	n.cfg 551660b/vm.cfg	
	1									
a Job Summany 0 27 to	1	fere D Die Derer	@ 25-#		25 comolete					
Job Summary: 27 Tota Description	I Jobs 🐻 Pen	ding 🛱 0 In Progra	ess 🔞 2 Faile	ed 🚺 0 Aborted	25 Complete	Tim	estamp D	uration	Abort	Detai
Job Summary: 27 Tota Sescription Verfresh metadata for File System: nf	I Jobs 🐻 0 Pen	ting 0 In Progra Status Pro Success	ess 🔞 2 Faile gress	ed 🚺 0 Aborted Message	25 Complete	Tim	estamp D : 08, 2015 3:5 1:	uration	Abort Abort	Detai

7.3 Importing an ISO file

This example shows you how to import the Oracle Linux ISO file you downloaded from the Oracle Software Delivery Cloud. Replace the name and URL of the ISO file with that of your file.

To import an ISO file:

- 1. Click the **Repositories** tab. Select the repository in which to import the ISO file. Select **ISOs** in the navigation tree.
- 2. Click Import ISO... de in the management pane toolbar.



3. The Import ISO dialog box is displayed.

Enter the URL to the ISO file you want to import, and the IP address or hostname of an optional proxy server to use when importing the ISO file. Click **OK** to import the ISO file.

🖢 Import ISO		0
* ISO download location:	http://ca-virtdoc-firestarter.us.oracle.com/share /OracleLinux-R7-U0-Server-x86_64-dvd.iso	
Proxy:		
		<u>C</u> ancel O <u>K</u>

The import job can take some time to complete. When the import job is complete, the ISO file appears in the table.

Show All Repositories Name Stize (GiB) Description OracleLinux-R6-U2-Server-x86_64-dvd.iso 3.34 Import URL: http://ca-virtdoc-firestarter.us.oracle V WyRepositories V VM Files VM Templates Virtual Disks	Show My Repositories	View 🗸 👌	u 🥖 🗙 🖫 📀					
OracleLinux-R6-U2-Server-x86_64-dvd.iso 3.34 Import URL: http://ca-virtdoc-firestarter.us.oracle OracleLinux-R7-U0-Server-x86_64-dvd.iso 3.89 Import URL: http://ca-virtdoc-firestarter.us.oracle OracleLinux-R7-U0-Server-x86_64-dvd.iso Server-x86_64-dvd.iso Server-x86_64	Show All Repositories	Name		\blacksquare	Size (GiB)	Description		
© Repositories ♥ MyRepositories ♥ MyRepository ● ISOs ● VM Files ● Virtual Appliances ● Virtual Disks	-	OracleLinu:	x-R6-U2-Server-x86	64-dvd.iso	3.34	Import URL: http://ca-vi	rtdoc-firestarter.us.o	racle
Image: Solution of the solutio			x-R7-U0-Server-x86	64-dvd.iso	3.89	Import URL: http://ca-vi	rtdoc-firestarter.us.o	racle
	V C. MyRepository SOS VM Files VM Templates Virtual Appliances Virtual Disks	Rows Selecte	display					
	Job Summary: 🗍 16 Total Jobs 🐻 0 Per					Timestamp	Duration	
escription Status Progress Message Timestamp Duration	Job Summary: 16 Total Jobs C 0 Per	Status	Progress	Message				
escription Status Progress Message Timestamp Duration effects in Success Dec 08, 2015 3:3 142ms	Job Summary: 16 Total Jobs 60 Per escription efresh metadata for File System: nfs on ca-sastor1	Status Success	Progress	Message		Dec 08, 2015 3:3	. 142ms	
escription Status Progress Message Timestamp Duration effects in the state of the s	Job Summary: 16 Total Jobs 0 Per escription efresh metadata for File System: nfs on ca-sastor1 nport Virtual CDROM to Repository: MyRepository	Status Success Success	Progress	Message		Dec 08, 2015 3:3 Dec 08, 2015 3:3	. 142ms . 35s	

See Understanding Repositories for information on importing, managing and using virtual machine resources.

Chapter 8 Create Virtual Machines

Table of Contents

8.1 Creating a virtual machine from a template	35
8.2 Creating a virtual machine from a virtual appliance	37
8.3 Creating a virtual machine from an ISO file	38
8.4 Starting a virtual machine and connecting to the console	42

Getting Started						
Discover Oracle VM Servers	Discover storage	Create a virtual machine network	Create a server pool	Create a storage repository	Add resources to storage repository	Create virtual machines

When you have a <u>virtual machine template</u> (either as an Oracle VM template or an <u>virtual appliance</u>), or an ISO file that contains an the installation files for an operating system, you can create a <u>virtual machine</u>. If you use a virtual machine template, you need to <u>clone</u> the template to create a virtual machine. If you use the OVF template format, you first need to create an Oracle VM template from the OVF file, then use that template to clone a virtual machine. If you use an installation source ISO file, you can create a virtual machine directly from the ISO file. The examples in this tutorial first use a template, a virtual appliance, and then an ISO file to create virtual machines. A final example shows you how to start a virtual machine and connect to the virtual machine's console.

8.1 Creating a virtual machine from a template

This example uses the virtual machine template you imported in Section 7.2, "Importing a virtual machine template" to create a virtual machine, and deploy it in the server pool.

To create a virtual machine from a template:

- 1. Click the Servers and VMs tab.
- 2. Click Create Virtual Machine at in the toolbar.

Health Servers and VMs Repositories	<u>N</u> etworki	ng St <u>o</u> rag	je Rej	oor <u>t</u> s and	Resources	Jobs
	View +	Perspective:	Server Poo	ls		🔍 📴 🍙
Server Pools	Name MyServer	Pool1		Tag(s)	Keymap en-us	Virtual IP
▷ MyServerPool2	MyServer	Pool2			en-us	

3. The **Create Virtual Machine** wizard is displayed. Select the **Clone from an existing VM Template** option and then click **Next**.



4. The Create Virtual Machine wizard prompts you to specify details for the virtual machine.

針 Create Virtual	Machine	0
VM Name:	MyVMFromTemplate	
Description:	A virtual machine created from a template.	
Clone Count:	1 Name Index: 0	
* Repository:	MyRepository -	
* VM Template:	OVM_OL5U7_X86_64_PVM_10GB.tgz	
* Server Pool:	MyServerPool1	
(i) Note: The rep	ository will be locked for the duration of the Simple C	lone operation.
		<u>C</u> ancel <u>F</u> inish

Enter the number of virtual machines to create from the template in the **Clone Count** field. Select the storage repository in which to store the virtual machine files. Select the virtual machine template from the **VM Template** field. Enter a name for the virtual machine(s) in the VM Name field. Select the server pool on which to deploy the virtual machine(s) from the **Server Pool** field. Click **Finish**.

The template is cloned to create one or more virtual machines. The cloning job may take some time. When the clone job is completed, the virtual machine is deployed to an Oracle VM Server in the server pool. To see the virtual machine, select the server pool in the navigation pane and select **Virtual Machines** from the **Perspective** drop-down list in the management pane toolbar.

8.2 Creating a virtual machine from a virtual appliance

This example uses the virtual appliance you imported in Section 7.1, "Importing a virtual appliance" to create a virtual machine, and deploy it in the server pool.

To create a virtual machine from a virtual appliance:

- 1. Click the Servers and VMs tab.
- 2. Click Create Virtual Machine at in the toolbar.

Health Servers and VMs Repositories	<u>N</u> etworki	ng St <u>o</u> raç	je Rej	oor <u>t</u> s and	Resources	<u>J</u> obs
B. 22 at 9. 0	View -	Perspective:	Server Poo	Is	<u> </u>	ف 🖭 🖄
Server Pools	Name		\blacksquare	Tag(s)	Keymap	Virtual IP
▷ ➡ MyServerPool1	MyServer	Pool1			en-us	
▷ MyServerPool2	MyServer	Pool2			en-us	

3. The Create Virtual Machine wizard is displayed. Select the Clone from an existing Virtual Appliance option and then click Next.



4. The Create Virtual Machine wizard prompts you to specify details for the virtual machine.

💣 Create Virtual Ma	achine		0
* Repository:	MyRepository	T	
* Virtual Appliance:	OVM_OL6U1_x86_64_PVHVM.ova	T	
Server Pool:	MyServerPool1	*	
	Available Virtual Appliance VM(s):	Selected Virtual Appliance VM(s): OVM OL6U1 x86 64 PVHVM	
		8	
		3	
			<u>C</u> ancel <u>E</u> inish

Select the repository in which to create the virtual machine configuration files from the **Repository** menu. Select the virtual appliance from which you want to create the virtual machine from the **Virtual Appliance** menu. Select the server pool in which you want to deploy the virtual machine from the **Server Pool** menu. Select the virtual machines that you want to create from the **Available Virtual Appliance VM(s)** column. Confirm the virtual machines in the **Selected Virtual Appliance VM(s)** column. Click **Finish**.

Oracle VM Manager creates one or more virtual machines from the selected virtual appliance(s). The job to create the virtual machine may take some time. When the job is completed, Oracle VM Manager deploys the virtual machines to the server pool you specified. If you did not specify a server pool, the virtual machines are deployed to the **Unassigned Virtual Machines** folder in the **Servers and VMs** tab. You can then migrate each virtual machine to a compatible server or server pool.

8.3 Creating a virtual machine from an ISO file

This example uses the ISO file you imported in Section 7.3, "Importing an ISO file" to create a virtual machine, and deploy it in the server pool.

To create a virtual machine from an ISO file:

- 1. Click the Servers and VMs tab.
- 2. Click Create Virtual Machine at in the toolbar.

Health Servers and VMs Repositories	<u>N</u> etworkin	ng St <u>o</u> raç	je Rep	oor <u>t</u> s and	Resources	Jobs
B. 22 2 Q	View -	Perspective:	Server Poo	ls	<u>-</u>	🔍 📑 🛃 💩
V M Server Pools	Name		\blacksquare	Tag(s)	Keymap	Virtual IP
▷ MyServerPool1	MyServerF	Pool1			en-us	
▷ P MyServerPool2	MyServerF	Pool2			en-us	

3. The Create Virtual Machine wizard is displayed. Select the Create a new VM option and then click Next.



4. The **Create Virtual Machine** wizard is displayed. In the **Create Virtual Machine** step, select the server pool you created earlier, the repository you created as the location to store the virtual machine configuration file, and enter a name for the virtual machine. Click **Next**.

eate Virtual Machine	* Server Pool:	MyServerPool1	Operating System:	Oracle Linux 6	-
t un Notworko	Server:	MyServer1	Mouse Device Type:	OS Default	-
a up Networks	* Repository:	MyRepository -	Keymap:	en-us (English, United	States) -
range Disks	* Name:	MyOL6Vm	Domain Type:	Xen HVM	-
ot Options		Enable High Availability 3	Start Policy:	Current Server	-
gs(Optional)		📃 Enable Huge Pages 🛈	Max. Memory (MB):	512 🖨	_
	Description:	An Oracle Linux 6 virtual machine installed from an ISO	Memory (MB):	512 🖨	
		inc.	Max. Processors:	1 🚔 🕚	
			Processors:	1	
			Priority:	50 🖨	
			Processor Cap %:	100 🚔	
			Restart Action On Cras	h: Restart	-

5. In the **Setup Networks** step, add one or more VNICs to the virtual machine. To dynamically create a VNIC, select the **Dynamically Assign Mac** check box and click **Add VNIC**. The VNIC is added to the virtual machine, and a MAC address is assigned when the create virtual machine job is submitted. Click **Next**.

1 1 2
\bigtriangledown
Add VNIC
Laure a state

 In the Arrange Disks step, create a virtual disk to use as the virtual machine's hard disk and select the ISO to use to create the virtual machine. For slot 0, select Virtual Disk from the Disk Type drop-down list. Click Create a Virtual Disk +.

Overste Minturel Marshime	Set the	slot positions for y	your IS	Os and disks:				
create virtual Machine	Slot	Disk Type		Name	Size (GiB)	Actions		
et up Networks	0	Virtual Disk	-	Empty	N/A	🔍 🕂 🖉 🖇	٢	
range Disks	1	Empty	•					
	2	Empty	•					
oot Options	3	Empty	•					
ags(Optional)								

The **Create Virtual Disk** dialog box is displayed. Select the repository on which to create the virtual disk, enter a name for the disk, and enter the size of the disk. Click **OK**.

* Repository:	MyRepository -	
* Virtual Disk Name:	MyVMDisk	
* Size (GiB):	20.0 (1)	
Description:	Base install disk for my virtual machine.	
Shareable:		
Allocation Type:	Sparse Allocation 🗾 📵	
		<u>C</u> ancel O <u>K</u>

For slot 1 select CD/DVD from the Disk Type drop-down list. Click Select a Virtual Machine Disk 9.

	Slot	Disk Type		Name	Size (GiB)	Actions		
Networks	0	Virtual Disk	-	MyVMDisk	20.0	Q 4	· / X	
na Diala	1	CD/DVD	•	Empty CDROM	0.0	Q @		
je Disks	2	Empty	•			-		
Options	3	Empty	•					
Optional)								

The Select an ISO dialog box is displayed. Select the ISO file and click OK.

😅 Select a	an ISO			
O Leave	Slot Empty			
Select	an ISO			
Select	Name	Size (GiB)	Repository	
۲	OracleLinux-R6-U2-Server-x86_64-dvd.iso	3.34	MyRepository	
				<u>C</u> ancel O <u>K</u>

You have now created a virtual disk to use as the virtual machine's hard disk, and added the ISO file which contains the operating system to be installed. Click **Next**.

	Slot	Disk Type		Name	Size (GiB)	Actions			
o Networks	0	Virtual Disk	•	MyVMDisk	20.0	9	+ /	/ X	
go Dieke	1	CD/DVD	•	OracleLinux-R6-U2-S	3.34	Q (<u>à</u>		
ye Diaka	2	Empty	•						
Options	3	Empty	•						

7. In the **Boot Options** step, select the boot media and order for your virtual machine. Click **Finish**.

Create Virtual Machine	Select your boot options PXE	CDROM	
Set up Networks		Disk	
Arrange Disks		> >>	<u>ح</u>
Boot Options			
Tags(Optional)			又
			Previous <u>C</u> ancel Ne <u>x</u> t <u>F</u> inish

The virtual machine is created and deployed to an Oracle VM Server in the server pool. To see the virtual machine, select the server pool in the navigation pane and select **Virtual Machines** from the **Perspective** drop-down list in the management pane toolbar.

8.4 Starting a virtual machine and connecting to the console

When a virtual machine is created, it is deployed to the server pool in a *stopped* state. This step of the tutorial starts the virtual machine created with an ISO file, and logs into the virtual machine console.

To start a virtual machine and connect to the console:

- 1. Click the **Servers and VMs** tab. Select the server pool in which the virtual machine is deployed in the navigation pane.
- 2. From the Perspective field in the management pane, select Virtual Machines from the drop-down list.



3. Select the virtual machine in the table and click **Start** \triangleright in the management pane toolbar.

Health Servers and VMs Repositories	<u>N</u> etworkin	ig St <u>o</u>	orage	Repor <u>t</u> s	and Resources	Jobs
B. 🖭 🖈 🖌 🗙 🔍 🕐 💧	View •	Perspectiv	ve: Virtua	I Machine	s 🗾	∕ ×⊳∎
V M Server Pools	Name	\blacksquare	Status	Tag(s)	Event Severity	Server
▷ MyServerPool1	MyOL6	Vm	Stopped	MyTag	Informational	MyServer1
▷ P MyServerPool2	▷ MyOL7	VM	Running		Informational	MyServer2

4. When the virtual machine is running, you can connect to the virtual machine's console and log in, if required. To connect to the console, click **Launch Console** I in the management pane toolbar.

Health Servers and VMs Repositories	Networking	St <u>o</u> rage	Reports and Resources	<u>J</u> obs	
B. 🗷 🔐 🥒 🗙 🔍 🧿	View + P	erspective: Virtua	I Machines 🗾	∕ x ⊳ ∎	👤 oly 💈
V P Server Pools	Name	▲ Status	Tag(s) Event Severity	Server	Max. Memo
▷ MyServerPool1	MyOL6Vn	n Running	MyTag Informational	MyServer1	512
▷ P MyServerPool2	▷ MyOL7VN	A Running	Informational	MyServer2	2048

5. The virtual machine console is displayed. Log in and interact with the virtual machine as you would through any other VNC session.

This example shows the initial installation screen for the virtual machine created with the Oracle Linux operating system ISO file.

Connected (encrypted) to: MyOL6Vm	Ctrl Alt	Ctri-Alt-Del
Oracle VM Console		
Welcome to Uracle Linux Server for x86_64 Disc Found To begin testing the media before installation press OK. Choose Skip to skip the media test and start the installation. Skip S	screen	

See Create Virtual Machine for more information on creating virtual machines.

Glossary

С

clone

The action or result of making an exact copy of an object. The object may be a virtual machine, virtual machine template, ISO file, or virtual disk. Cloning is similar to copying and maintains the integrity of the original object, while creating a new object based on the original. A clone customizer may be used to define cloning options to specify details of where the object components may reside when cloned, such as in a different storage repository.

D

discover

The process of adding systems as objects within Oracle VM Manager is known as *discovery*. When you add Oracle VM Servers and storage to your Oracle VM environment, Oracle VM Manager uses the information provided to connect to the resource and perform verification. During this process, information is usually exchanged between the server and the manager. In the case of an Oracle VM Server, Oracle VM Manager obtains information about the server, its network connectivity and any storage that is already attached to the server. Depending on your hardware and networking configuration, external storage may be automatically detected during discovery of Oracle VM Servers. This is always the case with local OCFS2 storage on an Oracle VM Server.

While storage can be automatically discovered during the process of discovering Oracle VM Servers, you may need to perform storage discovery for resources that are not already attached to any of your Oracle VM Servers. It is important that storage is configured outside of the Oracle VM environment prior to discovery. Depending on the storage type, you can perform different storage discovery operations from within Oracle VM Manager.

dom0

An abbreviation for *domain zero*. The management domain with privileged access to the hardware and device drivers. Dom0 is the first domain started at boot time. Dom0 has more privileges than domU. It can access the hardware directly and can manage the device drivers for other domains. It can also start new domains.

See Also: control domain

domain

A configurable set of resources, including memory, virtual CPUs, network devices and disk devices, in which virtual machines run. A domain is granted virtual resources and can be started, stopped and rebooted independently.

See Also: dom0

See Also: domU

See Also: control domain

domU

An unprivileged domain with no direct access to the hardware or device drivers. Each domU is started by dom0.

Η

high availability

High availability (HA) help ensure the uninterrupted availability of a virtual machine. If HA is configured for your virtual machine, and if the Oracle VM Server on which it is running fails or shuts down, the virtual machine is

restarted on another available Oracle VM Server in the server pool. The server pool must be clustered. You must enable high availability for both the server pool and the virtual machine.

Μ

multipath

The technique of creating more than one physical path between the server CPU and its storage devices. It results in better fault tolerance and performance enhancement. Oracle VM supports multipath I/O out of the box. Oracle VM Servers are installed with multipathing enabled because it is a requirement for SAN disks to be discovered by Oracle VM Manager

0

OCFS2

Oracle Cluster File System (OCFS2) is a general-purpose shared-disk cluster file system for Linux capable of providing both high performance and high availability. OCFS2 is developed by Oracle and is integrated within the mainstream Linux kernel. OCFS2 is used within Oracle VM to facilitate clustered server pools, storage of virtual machine images and for the purpose of allowing guests to share the same file system.

A clustered server pool always uses an OCFS2 file system to store the cluster configuration and to take advantage of OCFS2's heartbeat facility. There are two types of heartbeats used in OCFS2 to ensure high availability:

- The disk heartbeat: all Oracle VM Servers in the cluster write a time stamp to the server pool file system device.
- The network heartbeat: all Oracle VM Servers communicate through the network to signal to each other that every cluster member is alive.

These heartbeat functions exist directly within the kernel and are fundamental to the clustering functionality that Oracle VM offers for server pools. The server pool file system should be stored on a separate NFS server or on a small LUN if possible, as OCFS2's heartbeat facility can be disturbed by intensive I/O operations taking place on the same physical storage.

A storage repository configured on a LUN-based repository must be linked to a clustered server pool due to the nature of the OCFS2 file system. As a result, LUN-based repositories cannot be shared between multiple server pools, although it is possible to move an OCFS2 repository from one server pool to another.

For more information on OCFS2, please refer to https://oss.oracle.com/projects/ocfs2/.

Oracle VM Manager

Oracle VM Manager is the management platform, which offers an easy-to-use, web-browser interface as well as a command-line interface (CLI). Oracle VM Manager tracks and manages the resources available in your virtual environment and allows you to easily manage Oracle VM Server pools. Oracle VM Manager lets you manage the virtual machine life cycle, including creating virtual machines from templates or from installation media, deleting, powering off, uploading, deployment and live migration of virtual machines. Oracle VM Manager also lets you manage resources including ISO files, templates and shared virtual disks.

Oracle VM Server

A self-contained virtualization environment designed to provide a lightweight, secure, server-based platform for running virtual machines. The Oracle VM Server comprises a hypervisor and a privileged domain (called dom0) that allow multiple domains or guest operation systems (such as Linux, Solaris, and Windows) to run on one physical machine. Includes Oracle VM Agent to enable communication with Oracle VM Manager.

The Oracle VM Server for x86 incorporates an open source Xen hypervisor component, which has been customized and optimized to integrate into the larger, Oracle - developed virtualization server. The Oracle

VM Server for x86 is also responsible for access and security management and generally acts as the server administrative entity, because the hypervisor's role is limited.

On Oracle VM Server for SPARC systems, the SPARC hypervisor is built into the SPARC firmware and is generally referred to as the Logical Domains Manager (LDOM). As with the Xen hypervisor, each virtual machine is securely executed on a single computer and runs its own guest Oracle Solaris operating system

S

server pool

Logically an autonomous region that contains one or more physical Oracle VM Servers. Presents a unified view of the storage where the virtual machines reside, and groups the users of these virtual machines into a single community called a *group*, in which each user is a server pool member.

Each server pool can have up to 32 physical servers. Each Oracle VM Server can be a member of only one server pool. The server pool is the operational unit of Oracle VM. Policies are configured and enforced at the server pool level.

A minimum cluster of three Oracle VM Server nodes in each server pool is strongly recommended for high availability. If one node in the cluster experiences a hardware failure or is shut down for maintenance, failover redundancy is preserved with the other two nodes. Having a third node in the cluster also provides reserve capacity for production load requirements.

V

virtual appliance

A package created as a single .ova (Open Virtualization Format Archive) file or a set of .ovf (Open Virtualization Format) and .img (disk image) files. Virtual appliances contain one or more virtual machines and include the virtual disks and the inter-connectivity between the virtual machines.

In previous releases, virtual appliances were known as assemblies.

virtual machine (VM)

A guest operating system and the associated application software that runs within Oracle VM Server. May be paravirtualized or hardware virtualized machines. Multiple virtual machines can run on the same Oracle VM Server.

virtual machine template

A template of a virtual machine. Contains basic configuration information such as the number of CPUs, memory size, hard disk size, and network interface card (NIC). Create virtual machines based on a virtual machine template using Oracle VM Manager.