

Oracle® VM

Release Notes for 3.4.1

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Preface

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The Oracle VM Release Notes contain information on Oracle VM Release 3.4 and supersedes the product documentation. This document contains last-minute information that could not be included the Oracle VM documentation. Read this document before installing Oracle VM. This document may be updated after it is released. To check for updates to this document, and to view other Oracle documentation, refer to the Documentation section on the Oracle Technology Network (OTN) Web site:

<http://www.oracle.com/technology/documentation/>

The release notes provided for each subsequent release of Oracle VM are published as individual documents at the time that the release is made available. You should check that you are referring the correct document for the release that you are interested in. The release notes for each of the Oracle VM 3.4.x releases is available at:

http://download.oracle.com/docs/cd/E64076_01

This document is intended for users, and administrators of Oracle VM. It includes describes potential issues and the corresponding workarounds you may encounter while using Oracle VM.

Oracle recommends that you read this document before installing and using Oracle VM.

1 Audience

This document is intended for Oracle VM administrators with privileged access to the physical and virtual resources of the Oracle VM environment. This guide assumes that you have an in depth knowledge of Oracle VM (see the [Oracle VM Manager User's Guide](#)), and that you are familiar with Oracle Linux system administration and Linux command line operation.

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: <pre>dd if=/dev/rdsd/c0t1d0s6 of=/dev/rst0 bs=10b \ count=10000</pre>
braces { }	Braces indicate required items: <pre>.DEFINE {macro1}</pre>
brackets []	Brackets indicate optional items: <pre>cvtcrt <i>termname</i> [<i>outfile</i>]</pre>
ellipses ...	Ellipses indicate an arbitrary number of similar items: <pre>CHKVAL <i>fieldname</i> <i>value1</i> <i>value2</i> ... <i>valueN</i></pre>
<i>italics</i>	Italic type indicates a variable. Substitute a value for the variable: <pre><i>library_name</i></pre>
vertical line	A vertical line indicates a choice within braces or brackets: <pre>FILE <i>filesize</i> [K M]</pre>
forward slash /	A forward slash is used to escape special characters within single or double quotes in the Oracle VM Manager Command Line Interface, for example: <pre>create Tag name=MyTag description="HR/'s VMs"</pre>

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.
<i>italic</i>	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.

Conventions

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

Chapter 1 Introduction

Oracle VM is a platform that provides a fully equipped environment for better leveraging the benefits of virtualization technology. Oracle VM enables you to deploy operating systems and application software within a supported virtualization environment. The components of Oracle VM are as follows:

Oracle VM Server for x86

Oracle VM Server for x86 (Oracle VM Server) is a self-contained virtualization environment designed to provide a lightweight, secure, server-based platform to run virtual machines on x86 hardware. Oracle VM Server is based upon an updated version of the underlying Xen hypervisor technology, and includes Oracle VM Agent. It also includes a Linux kernel with support for a broad array of devices and file systems. The Linux kernel is run as Dom0 to manage one or more DomU virtual machines, each of which could be Linux, Oracle Solaris, or Microsoft Windows.

Oracle VM Server for SPARC

Oracle VM Server for SPARC (previously called Sun Logical Domains, or LDomS) is Oracle's server virtualization and partitioning technology on SPARC servers. Oracle VM Server for SPARC leverages the SPARC hypervisor to subdivide supported platforms' resources (CPUs, memory, I/O, and storage) by creating logical domains, also called virtual machines, to take advantage of the massive thread scale offered by SPARC servers and the Oracle Solaris operating system.

Oracle VM Manager

Oracle VM Manager is a server side component that allows you to configure and manage your Oracle VM environment. Oracle VM Manager includes both a command line interface and a web-based user interface, which is a standard Application Development Framework (ADF) web application. Oracle VM Manager provides virtual machine management facilities, including creating virtual machines from installation media or from templates. It provides features such as power on, power off, deleting, importing, deploying, and live migration of virtual machines. Oracle VM Manager also manages resources, including ISO files, virtual machine templates, and shared virtual disks.

This document sets out to describe items of interest and relevance to the current release of Oracle VM. The release notes provided for each subsequent release of Oracle VM are published as individual documents at the time that the release is made available. You should check that you are referring the correct document for the release that you are interested in. The release notes for each of the Oracle VM 3.4.x releases is available at:

http://download.oracle.com/docs/cd/E64076_01

Chapter 2 Installing and Upgrading Oracle VM

The *Oracle VM Installation and Upgrade Guide* explains how to install and upgrade Oracle VM. For instructions on:

- Installing Oracle VM Server, see [Installing Oracle VM Server](#).
- Installing Oracle VM Manager, see [Installing Oracle VM Manager](#).
- Upgrading between Oracle VM 3.x releases, see [Upgrading Oracle VM](#).

Restrictions for Upgrading

You can upgrade Oracle VM between 3.x Releases only; for example, upgrading from Oracle VM Release 3.3.1 to 3.4.1. You cannot upgrade from a Release 2.x to a Release 3.x, however. In this case, you must reinstall Oracle VM Servers and Oracle VM Manager.

Upgrading versions of Oracle VM Manager that are using an Oracle XE database as a back end repository is not supported in this release, as the Oracle XE database is no longer supported under Oracle VM. If you are currently running an Oracle XE database for an existing installation of Oracle VM Manager, you must migrate the Oracle XE database to Oracle SE or Oracle EE before performing an upgrade to Release 3.4.

Chapter 3 What's New in Oracle VM?

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Review the new features and enhancements in each release of Oracle VM.

3.1 What's New in Oracle VM Release 3.4.1?

The new features and enhancements in Oracle VM Release 3.4.1 include:

Installation and Upgrades

Upgrading to Release 3.4

Oracle VM provides scripts that automate the upgrade process and minimize downtime for your virtualization infrastructure.

Upgrading Oracle VM Manager to Release 3.4

Use the `runInstaller.sh` script that is included with the Release 3.4 installation media. See [Upgrading Oracle VM Manager](#) in the *Oracle VM Installation and Upgrade Guide* for more information.

Upgrading Oracle VM Server from Release 3.3.x

Upgrade server pools and multiple Oracle VM Servers directly through the Oracle VM Manager Web Interface. The Oracle VM Manager Web Interface provides an intuitive interface to perform upgrades either individually or across multiple servers at once in batch mode.

- See [Upgrading Oracle VM Server for x86 from Release 3.3.x or Between 3.4.x Errata Releases](#) in the *Oracle VM Installation and Upgrade Guide* for more information on upgrading from Oracle VM Server Release 3.3.x.
- See [Update Server](#) and [Server Update Groups](#) in the *Oracle VM Manager User's Guide* for more information on upgrading from

the Oracle VM Manager Web Interface.

Upgrading Oracle VM Server from Release 3.2.10

Use the [UpgradeServers.py](#) script for Oracle VM Server for x86 or the [./upgrade](#) script for Oracle VM Server for SPARC

- See [Upgrading Oracle VM Server for x86 from Release 3.2.10](#) in the *Oracle VM Installation and Upgrade Guide* for more information on upgrading from Oracle VM Server Release 3.2.10.
- See [Upgrading Oracle VM Agent for SPARC](#) in the *Oracle VM Manager User's Guide* for more information on upgrading Oracle VM Server for SPARC.

Local disk partitioning

Interactive installations of Oracle VM Server allow you to configure disk partitioning. See [Installing Oracle VM Server From a DVD-ROM](#) in the *Oracle VM Installation and Upgrade Guide* for more information.

Enabling Kdump during Oracle VM Server installation

During installation of Oracle VM Server, you can now choose to enable the Kdump service that captures a memory dump from dom0 and stores it on the filesystem to help you debug and diagnose issues in the event of a system crash.

- See [Installing Oracle VM Server From a DVD-ROM](#) in the *Oracle VM Installation and Upgrade Guide* for information on enabling Kdump.
- See [Manually Configuring kdump for Oracle VM Server](#) in the *Oracle VM Administration Guide* for information on configuring Kdump after installation.

Infrastructure

Support for Oracle VM Virtual Appliances

Oracle VM Manager now provides the ability to import and export Oracle VM Virtual Appliances as a single .ova (Open Virtualization Format Archive) file or a set of .ovf (Open Virtualization Format) and .img (disk image) files. See [How are Virtual Appliances Managed?](#) in the *Oracle VM Concepts Guide* for more information on virtual appliances.



Note

In previous releases of Oracle VM, Oracle VM Virtual Appliances were referred to as assemblies.

Automated installation of VNC and Serial Console software

The Oracle VM Manager installer also manages the installation and upgrading of the VNC and Serial Console software package on the Oracle VM Manager host. Reducing administrative overhead during a deployment of the environment.

Storage live migration	<p>You can now perform live migrations of running virtual machines that have virtual disks on local storage. Oracle VM uses features built into the OCFS2 file system on x86 platforms to provide this live migration capability that helps you achieve nearly uninterrupted uptime for virtual machines.</p> <p>Some restrictions apply to storage live migration. In particular, there are various requirements surrounding disk space on the source and target repositories. See How Can a Virtual Machine be Moved or Migrated? in the <i>Oracle VM Concepts Guide</i> for more information.</p> <p>Additionally, performing storage live migration can disrupt the cluster heartbeat function if the server pool file system is not separate to the cluster heartbeat file system. Additionally, you should ensure that you configure separate channels for live migration network traffic and other network functions such as cluster heartbeat. For more information about storage configuration guidelines, see Are there Guidelines for Configuring Storage? in the <i>Oracle VM Concepts Guide</i>. For more information about network channels, see How are Network Functions Separated in Oracle VM? in the <i>Oracle VM Concepts Guide</i>.</p>
Sparse allocation for virtual disks	<p>When creating virtual disks in Oracle VM Manager, you can set the allocation type to either sparse or non-sparse. Sparse allocation creates a virtual disk with an initially small size that dynamically increases with use. Non-sparse allocation creates a virtual disk with a fixed size. See Create Virtual Machine in the <i>Oracle VM Manager User's Guide</i> for more information on creating virtual machines and virtual disk allocation.</p>
Fiber Channel over Ethernet (FCoE) support	<p>Oracle VM provides support for installing Oracle VM Server into FCoE Storage Area Networks (SAN) over some Host Bus Adapters (HBA) or Converged Network Adapters (CNA). See Multipath Installation in the <i>Oracle VM Installation and Upgrade Guide</i> for more information.</p>
Bootting from UEFI	<p>Oracle VM Server can now boot from systems that use Unified Extensible Firmware Interface (UEFI). See Installing Oracle VM Server From a DVD-ROM in the <i>Oracle VM Installation and Upgrade Guide</i> for more information about installing Oracle VM Server in UEFI mode.</p> <p>You can install Oracle VM Server in legacy BIOS mode or UEFI mode. However, you cannot change modes after installation. For example, if you install Oracle VM Server in legacy BIOS mode, you cannot then switch to UEFI mode. If you want to change from legacy BIOS mode to UEFI mode, or from UEFI mode to legacy BIOS mode, you must re-install Oracle VM Server.</p> <p>The following restrictions currently apply to UEFI mode:</p> <ul style="list-style-type: none"> • You cannot create custom partition layouts if you are installing Oracle VM Server in UEFI mode. • You cannot boot Oracle VM Server from SAN, FCoE, or iSCSI if you use UEFI mode.
SOAP API deprecated	<p>The Oracle VM SOAP API is deprecated as of Release 3.4.1.</p>

Oracle VM Utilities use Oracle VM Web Services API	The Oracle VM Utilities version 2.1 now communicate directly with Oracle VM Manager using a Oracle VM API. This change improves performance and usability of the Oracle VM Utilities. Additionally, in this release, a number of the Oracle VM Utilities scripts have been deprecated by the Oracle VM Manager Command Line Interface. For more information, see Using the Oracle VM Utilities in the <i>Oracle VM Administration Guide</i> .
P2V utility on Oracle VM Server ISO file	This release includes the P2V utility on the Oracle VM Server ISO file. You can use the P2V utility to convert physical hosts to virtual machines. For more information, see Converting Physical Hosts to Virtual Machines in the <i>Oracle VM Administration Guide</i> .
OSWatcher Utility Available on Oracle VM Server	As of this release, the OSWatcher utility is installed on Oracle VM Server by default and is enabled to run at boot. OSWatcher (oswbb) is a collection of shell scripts that collect and archive operating system and network metrics to diagnose performance issues with Oracle VM Server. For more information, see Working with the OSWatcher Utility on Oracle VM Server in the <i>Oracle VM Administration Guide</i> .
Repository apparent size	Oracle VM Manager now displays the apparent size, in GiB, of repositories. The apparent size is the total size of the entire repository. For more information, see Repositories Perspective in the <i>Oracle VM Manager User's Guide</i> .
dom0 kernel upgraded	The dom0 kernel for Oracle VM Server is updated to Oracle Unbreakable Enterprise Kernel Release 4 in this release.

Performance and Scalability

Increased supported limits	Oracle VM supports increased configuration limits, including a maximum of 256 virtual CPUs (vCPU) for virtual machines of PVM domain type. See Chapter 6, Configuration Limits for Release 3.4 for a complete list of configuration limits for Oracle VM.
Improved performance	This release of Oracle VM includes several enhancements to overall performance and scalability, including the time it takes to discover a large number of servers.

The following table highlights performance improvements for the Oracle VM Manager Web Interface from Release 3.3.x to Release 3.4.1:

Action in the Oracle VM Manager Web Interface	First time	Subsequent times
Logging in	85%	80%
Switching from Status Overview to Statistics on the Health tab	23% faster response time	1 second
Expanding the Server Pools folder on the Servers and VMs tab	66% faster response time	0 seconds

Action in the Oracle VM Manager Web Interface	First time	Subsequent times
Switching from the Servers and VMs tab to the Health tab	62% faster response time	73% faster response time

Security

Improved character handling for filters	Improvements to Oracle VM Manager allow for better handling of characters used in filter fields to improve matching capabilities and to provide improved protection against attempted SQL injection attacks.
Improved handling of user passwords	This release of Oracle VM includes changes to how user passwords are stored on the system so that they are not exposed on the command line.
FIPS 140-2 Validation	This release supports enabling FIPS mode for OpenSSL to be compliant with Federal Information Processing Standard (FIPS) Publication 140-2. For more information about FIPS and Oracle VM security, see the <i>Oracle VM Security Guide</i> . Information on enabling FIPS mode for OpenSSL is provided in the <i>Oracle Linux 6 Security Guide</i> , available at: http://docs.oracle.com/cd/E37670_01/

Usability and Serviceability

Device mappings	Virtual machine configuration details under the Servers and VMs tab in the Oracle VM Manager Web Interface display device mappings that allow you to easily identify which physical resources, such as disks in the repository, correspond to virtual resources, such as virtual disks assigned to virtual machines. See Virtual Machines Perspective in the <i>Oracle VM Manager User's Guide</i> for more information.
Object topology view	You can view graphical representations, and generate reports, of virtual machine object nodes and attributes to quickly locate resources and view information about those resources. See Display VM Hierarchy Viewer in the <i>Oracle VM Manager User's Guide</i> for more information.
Context sensitive help	Online help for Oracle VM now launches directly from elements in the Oracle VM Manager Web Interface to the relevant help topics. This online help system eliminates the need to navigate through help topics to find information. See Help Icon in the <i>Oracle VM Manager User's Guide</i> for more information.
User preferences	Oracle VM Manager stores certain user preferences across sessions. See User Preference Persistence in the <i>Oracle VM Manager User's Guide</i> for more information about user preferences.
Simple names for repository objects	Oracle VM Manager persists simple names for repository objects as metadata. As a result, the simple names are retained when the repository is transferred to a different instance of Oracle VM Manager. Likewise, the metadata allows you to easily recover the simple names

	<p>in cases where Oracle VM Manager is manually restored without a database backup. For more information, see How is Object Metadata Stored in a Repository? in the <i>Oracle VM Concepts Guide</i>.</p>
Generating XML reports	<p>Oracle VM Manager lets you generate XML reports on objects, the object attributes, and direct subobjects. You can generate reports for virtual machines, Oracle VM Servers, server pools, and storage. For more information, see Reports in the <i>Oracle VM Manager User's Guide</i>.</p>
Configuring database backups	<p>The Preferences tab in the Oracle VM Manager Web Interface lets you set the interval for backing up the MySQL database and number of backups to keep. For more information, see Preferences in the <i>Oracle VM Manager User's Guide</i>.</p>
Listing the locations of virtual machine disks	<p>Oracle VM Manager provides detailed information on the location of virtual machine disks to facilitate backup tasks.</p> <ul style="list-style-type: none"> • See Virtual Machines Perspective in the <i>Oracle VM Manager User's Guide</i> for more information about locating virtual machine disks in the Oracle VM Manager Web Interface. • See the <i>Oracle VM Manager Command Line Interface User's Guide</i> for more information about various commands that return attributes for the location of virtual machine disks.
Monitoring Oracle VM Server through SNMP	<p>This release provides an SNMP shared object module that lets you retrieve details about Oracle VM Server, monitor Oracle VM Server health, and return a list of running virtual machines. See Monitoring Oracle VM Server with SNMP in the <i>Oracle VM Administration Guide</i> for more information on the Oracle VM Server shared object module.</p>
Viewing virtual machine configuration files	<p>Oracle VM lets you easily retrieve the configuration files for virtual machines (vm.cfg).</p> <ul style="list-style-type: none"> • See View Virtual Machine Configuration File in the <i>Oracle VM Manager User's Guide</i> for more information on viewing a virtual machine configuration file in the Oracle VM Manager Web Interface. • See getVmCfgFileContent in the <i>Oracle VM Manager Command Line Interface User's Guide</i> for more information on viewing a virtual machine configuration file in the Oracle VM Manager Command Line Interface.
Avoiding multiple physical disk allocation	<p>Oracle VM provides detailed information about how physical disks are in use to avoid multiple physical disk allocation.</p> <ul style="list-style-type: none"> • See Physical Disks Perspective in the <i>Oracle VM Manager User's Guide</i> for more information on working with physical disks. • See Local Storage in the <i>Oracle VM Concepts Guide</i> for more information about local storage and physical disks.

**Note**

The Oracle VM Server object module applies to x86 systems only. This object module does not apply to Oracle VM Server for SPARC.

Virtual IP addresses for server pools

The field to specify a virtual IP address (VIP) while creating a server pool is deprecated in this release but available for backwards compatibility.

- See [Create Server Pool](#) in the *Oracle VM Manager User's Guide* for information on creating a server pool.
- See [What is a Master Server and a Virtual IP Address?](#) in the *Oracle VM Concepts Guide* for more details on why VIPs are deprecated for server pools in this release.

3.2 What's New in Oracle VM Release 3.3.4?

Oracle VM Release 3.3.4 includes separate patches for Oracle VM Manager, Oracle VM Server, and Oracle VM Agent for SPARC as follows:

- Oracle VM Manager: patch ID [20492250](#).
- Oracle VM Server: patch ID [20492240](#).
- Oracle VM Agent for SPARC: patch ID [20492222](#).

Download the patches from [My Oracle Support](#).

The new features and enhancements in Oracle VM Release 3.3.4 include:

Infrastructure

- **Oracle Unbreakable Enterprise Kernel (UEK) update:** This release of Oracle VM includes UEK Release 3 Quarterly Update 7 [kernel-uek-3.8.13-118](#).
- **Update to netfront and netback drivers:** Along with UEK Release 3 Quarterly Update 7, this release of Oracle VM delivers updates to the netfront and netback drivers.
- **Package and library updates:** The following changes apply to this release of Oracle VM:
 - The [udev](#) RPM file is updated in this release.
 - The [libxml2](#) RPM file is updated in this release.
 - The [libxml2-python](#) RPM file is updated in this release.
 - The [UEK3 QU7](#) RPM file is included in this release.
- **Updates to the irqbalance package:** This release updates the [irqbalance](#) package to [irqbalance-1.0.9-2](#) so that interrupts are now better balanced across available dom0 CPUs to improve network I/O performance.
- **Multipath configuration for Oracle Sun ZFS Appliance:** This release includes the Oracle SUN ZFS Storage 7330 in the [multipath.conf](#) file.

Installation and Upgrades

- **Compatibility Fix for Different Release Versions of Oracle VM Server During Upgrade:** This release includes changes to facilitate the upgrade of different versions of Oracle VM Server.

Security

- **FIPS-Compliant OpenSSL Library Supported for Oracle VM Server:** As of this release, it is possible to install and configure the FIPS-compliant OpenSSL library on Oracle VM Server as per the instructions provided in the Oracle Linux 6 Security Guide at:

http://docs.oracle.com/cd/E37670_01/

If you are following the instructions provided in the Oracle Linux 6 Security Guide, there is a step where you enable FIPS in the kernel by editing `/etc/grub.conf` and adding the `fips=1` option to the 'kernel' line. For this to work on an Oracle VM Server, the `fips=1` option must be added to the 'module' line instead.

- **Critical patch updates:** This release of Oracle VM includes security fixes from critical patch updates for Oracle WebLogic Server, Oracle Java 7, and Oracle MySQL.
- **Ciphersuite update:** The ciphersuite selection configuration is updated in this release of Oracle VM to support a higher level of security.

Oracle VM Security Advisories

This release includes the following Oracle VM Security Advisories:

Table 3.1 Oracle VM Security Advisories

Advisory Identifier	Severity	Description
OVMSA-2016-0014	Important	Oracle VM 3.3 Unbreakable Enterprise kernel security update
OVMSA-2016-0013	Critical	Oracle VM 3.3 glibc security update
OVMSA-2016-0011	Moderate	Oracle VM 3.3 sos security update
OVMSA-2016-0009	Moderate	Oracle VM 3.3 bind security update
OVMSA-2016-0007	Important	Oracle VM 3.3 xen security update
OVMSA-2016-0006	Important	Oracle VM 3.3 ntp security update
OVMSA-2016-0005	Important	Oracle VM 3.3 kernel-uek security update
OVMSA-2016-0004	Moderate	Oracle VM 3.3 gnutls security update
OVMSA-2016-0003	Moderate	Oracle VM 3.3 nss security update
OVMSA-2016-0002	Moderate	Oracle VM 3.3 rpcbind security update
OVMSA-2016-0001	Moderate	Oracle VM 3.3 openssl security update
OVMSA-2015-0156	Important	Oracle VM 3.3 bind security update
OVMSA-2015-0155	Moderate	Oracle VM 3.3 openssl security update
OVMSA-2015-0154	Important	Oracle VM 3.3 kernel-uek security update
OVMSA-2015-0153	Moderate	Oracle VM 3.3 libpng security update
OVMSA-2015-0152	Moderate	Oracle VM 3.3 libxml2 security update
OVMSA-2015-0150	Important	Oracle VM 3.3 kernel-uek security update
OVMSA-2015-0147	Important	Oracle VM 3.3 kernel-uek security and bugfix update
OVMSA-2015-0145	Critical	Oracle VM 3.3 nss, nss-util, and nspr security update

Advisory Identifier	Severity	Description
OVMSA-2015-0144	Moderate	Oracle VM 3.3 kernel-uek security update
OVMSA-2015-0141	Important	Oracle VM 3.3 xen security update
OVMSA-2015-0140	Important	Oracle VM 3.3 ntp security update
OVMSA-2015-0123	Important	Oracle VM 3.3 openldap security update
OVMSA-2015-0122	Important	Oracle VM 3.3 kernel-uek security update
OVMSA-2015-0120	Important	Oracle VM 3.3 libXfont security update
OVMSA-2015-0119	Important	Oracle VM 3.3 bind security update
OVMSA-2015-0118	Moderate	Oracle VM 3.3 nss-softokn security update
OVMSA-2015-0117	Moderate	Oracle VM 3.3 pam security update
OVMSA-2015-0116	Moderate	Oracle VM 3.3 net-snmp security update
OVMSA-2015-0115	Moderate	Oracle VM 3.3 sqlite security update
OVMSA-2015-0114	Important	Oracle VM 3.3 kernel-uek security update
OVMSA-2015-0113	Low	Oracle VM 3.3 kernel-uek security update
OVMSA-2015-0111	Important	Oracle VM 3.3 xen security update
OVMSA-2015-0109	Important	Oracle VM 3.3 kernel-uek security update
OVMSA-2015-0107	Moderate	Oracle VM 3.3 curl security update
OVMSA-2015-0106	Important	Oracle VM 3.3 libuser security update
OVMSA-2015-0105	Important	Oracle VM 3.3 bind security update
OVMSA-2015-0104	Moderate	Oracle VM 3.3 kernel-uek security update
OVMSA-2015-0103	Moderate	Oracle VM 3.3 sudo security update
OVMSA-2015-0102	Moderate	Oracle VM 3.3 ntp security update
OVMSA-2015-0101	Moderate	Oracle VM 3.3 gnutls security update
OVMSA-2015-0100	Moderate	Oracle VM 3.3 grep security update
OVMSA-2015-0099	Moderate	Oracle VM 3.3 net-snmp security update
OVMSA-2015-0098	Moderate	Oracle VM 3.3 python security update
OVMSA-2015-0097	Moderate	Oracle VM 3.3 libxml2 security update
OVMSA-2015-0095	Important	Oracle VM 3.3 xen security update
OVMSA-2015-0094	Moderate	Oracle VM 3.3 kernel-uek security update

3.3 What's New in Oracle VM Release 3.3.3?

Oracle VM Release 3.3.3 includes separate patches for Oracle VM Manager, Oracle VM Server, and Oracle VM Agent for SPARC as follows:

- Oracle VM Manager: patch ID [20492250](#).
- Oracle VM Server: patch ID [20492240](#).
- Oracle VM Agent for SPARC: patch ID [20492222](#).

Download the patches from [My Oracle Support](#).

The new features and enhancements in Oracle VM Release 3.3.3 include:

Infrastructure

- **Support for Fibre Channel over Ethernet (FCoE):** Oracle VM now includes drivers to detect Converged Network Adapters (CNA). These drivers make it possible to install Oracle VM Server into an FCoE SAN. (20140781)
- **Maximum vCPU limit:** The maximum vCPU limit of 128 for Oracle VM Server for SPARC is removed in this release. (20576711)
- **Support of Converged Network Adapters:** The Oracle VM Server installer is updated in this release to support more Converged Network Adapters (CNA) such as HP FlexFabric 10Gb 2-port 536FLB Adapter, Broadcom 57840S CNA, etc. (20492419)
- **Updated hwdata package:** The hwdata package has been updated to `hwdata-0.233-11.1.el6.noarch.rpm` to list recently released network adapters. (20854084)
- **Updated OvmClient.jar library:** The corporate signing authority for the `OvmClient.jar` library has been updated. (20488470)
- **Updated virtual machine console packages:** The `ovmcore-console-1.0-42.rpm` package has been added to the Oracle VM Manager Web Interface and is updated on the Oracle VM Manager ISO. (20138989)
- **Oracle VM Server dracut packages:** This release adds the `dracut-fips` package and the `dracut-network` package to the Oracle VM Server ISO. This release also includes updates to the `dracut-004` package and the `dracut-kernel` package. (20829905)

Installation and Upgrades

- **Installer check before upgrading:** As of this release, the Oracle VM Manager installation program now checks for sufficient `/tmp` space before starting an upgrade of Oracle VM. (20347269)
- **Delete running jobs:** The Oracle VM Manager upgrade script now allows you to delete running jobs so that the upgrade can proceed. (20103466)

Networking

- **Support for TCP-based NFS Repository Mounts:** Repositories hosted on an NFS share are mounted using TCP by default, with the option to fallback to UDP, in this release. (14692942)
- **Add Python networking package:** This release adds the `python-ipaddr-2.1.9-3.el6.noarch.rpm` package to Oracle VM Server for improved IPv6 support. (20855848)

Performance

- **Improved navigation performance in the Oracle VM Manager Web Interface:** This release provides improved performance when navigating to VLAN information. (20814204)
- **Quicker response times in the Oracle VM Manager Web Interface Health tab:** This release provides improved performance when navigating through the **Health** tab. (20963394)
- **Retrieving available servers for virtual machines:** This release improves the time it takes to retrieve a list of available servers for virtual machines. (20982855)
- **Improved performance when expanding tree nodes in the Oracle VM Manager Web Interface:** This release provides improved performance when expanding a tree node that contains a large number of servers. (20305165)

Security

- **Oracle MySQL patch update:** This release of Oracle VM includes the April 2015 Critical Patch Update for MySQL. (20916257)
- **Oracle WebLogic patch update:** This release of Oracle VM includes the April 2015 Critical Patch Update for WebLogic. (20918659)
- **Oracle Java patch update:** This release of Oracle VM includes the April 2015 Critical Patch Update for Java. (20918735)
- **UEK3 quarterly update:** This release of Oracle VM includes the UEK3 quarterly update 5. (20594222)
- **Xen security advisories:** The following Xen security advisories are included in this release:
 - XSA-136 (CVE-2015-4164)
 - XSA-134 (CVE-2015-4163)
 - XSA-135 (CVE-2015-3209)

Oracle VM Security Advisories

This release includes the following Oracle VM Security Advisories:

Table 3.2 Oracle VM Security Advisories

Advisory Identifier	Severity	Description
OVMSA-2015-0040	Important	Oracle VM 3.3 kernel-uek security update
OVMSA-2015-0054	Moderate	Oracle VM 3.3 krb5 security update
OVMSA-2015-0055	Moderate	Oracle VM 3.3 glibc security update
OVMSA-2015-0056	Important	Oracle VM 3.3 kernel-uek security update
OVMSA-2015-0057	Critical	Oracle VM 3.3 Xen security update
OVMSA-2015-0060	Important	Oracle VM 3.3 kernel-uek security update
OVMSA-2015-0064	Important	Oracle VM 3.3 Xen security update
OVMSA-2015-0065	Moderate	Oracle VM 3.3 Openssl security update
OVMSA-2015-0067	Important	Oracle VM 3.3 Xen security update
OVMSA-2015-0070	Moderate	Oracle VM 3.3 Openssl security update
OVMSA-2015-0071	Important	Oracle VM 3.3 cups security update
OVMSA-2015-0072	Important	Oracle VM 3.3 kernel-uek security update
OVMSA-2015-0073	Moderate	Oracle VM 3.3 nss security update

3.4 What's New in Oracle VM Release 3.3.2?

Oracle VM Release 3.3.2 includes separate patches for Oracle VM Manager, Oracle VM Server, and Oracle VM Agent for SPARC as follows:

- Oracle VM Manager: patch ID [20492250](#).
- Oracle VM Server: patch ID [20492240](#).
- Oracle VM Agent for SPARC: patch ID [20492222](#).

Download the patches from [My Oracle Support](#).

The new features and enhancements in Oracle VM Release 3.3.2 include:

Performance

- **Performance Monitoring:** This release adds support for Oracle VM performance monitoring. (19707131)
- **Caching Job States:** Oracle VM Manager Web Interface now caches the states of jobs to improve performance. (19903847)
- **CPU Load of the MySQL Process:** Several performance improvements have been implemented to lower the CPU load of the MySQL process. (19563329)
- **Looking Up Objects by Name:** Oracle VM Manager Web Interface provides improved performance when looking up an object based on its name. (19482992)
- **Method Call Improvement:** Improves the performance of the `OvmWsClient.getWsUtilities()` Oracle VM Web Services API call. (19402315)
- **Virtual Machine Shutdown Time:** Virtual machines now shut down faster, especially for virtual machines with a large amount of memory. (18489484)

Usability

- **Expanding Server Lists:** Oracle VM Manager Web Interface is now more responsive and quicker when expanding lists of Oracle VM Servers. (19879474 and 19385050)
- **Scrolling through Large Tables:** Oracle VM Manager Web Interface provides improved performance when scrolling through large tables such as the **Unassigned Virtual Machines** folder. (19879459)
- **Searching for Jobs:** Oracle VM Manager Web Interface now provides results quicker when searching for jobs. (19590118)
- **Querying Statistics:** Oracle VM Manager Web Interface provides improved performance when querying Oracle VM Manager statistics. (19563481)
- **Servers and VMs Tab Displays as Default:** The **Servers and VMs** tab now displays when opening the Oracle VM Manager Web Interface. (19429440)
- **Opening Menu with Right Mouse Button:** Oracle VM Manager Web Interface provides improved performance when opening context menus with the right mouse button. (19402302)
- **Prevent VNIC Changes for Running Virtual Machines:** Oracle VM now includes a rule to prevent virtual network interface card (VNIC) changes in the network while virtual machines are running. (19644535)

Installation and Upgrades

- **Upgrade Support:** This release adds support to upgrade from Oracle VM Release 3.2.9 to Oracle VM Release 3.3.2. (20122857)
- **Discover Servers After Upgrade:** This release adds support to discover Oracle VM Release 3.2 Servers after upgrading to Oracle VM Release 3.3. (19958455)
- **Prevent Oracle VM Manager Upgrade with Running Jobs:** Oracle VM now includes a rule to prevent an upgrade of Oracle VM Manager when jobs are still running (19562031)

Infrastructure

- **Updated Virtual Machine Console:** This release includes an updated virtual machine console package, [ovmcore-console-1.0-42](#), to the Oracle VM Manager installation ISO. (20138989)
- **Import OVF 2.1 VM Templates:** Oracle VM now provides support for importing Oracle VM Templates that are created according to the OVF 2.1 specification. (19639096)
- **Improved NUMA Support:** Oracle VM provides improved NUMA support for PCI devices. (20088513)
- **Xen Command Support:** Adds support for the `-p` option to the `xendomains/auto-start` feature of Xen. (20087455)
- **Update to the dom0 Kernel:** Updates the dom0 kernel to a newer Oracle Unbreakable Enterprise Kernel Release 3 [3.8.13-55.1.3.el6uek](#). (20028783)
- **Update to OpenSSL Package:** This Oracle VM Release includes the latest OpenSSL package. (19933498)
- **Support for Larger Number of Virtual CPUs:** This Oracle VM release adds support for a larger number of virtual CPUs. (19564352)
- **Support for an HP Server:** Oracle VM now supports installing Oracle VM Server on an HP DL580 G8 server. (19295185)
- **Oracle Virtual Networking Package:** This Oracle VM release adds the Oracle Virtual Networking (OVN) user package, [orclovn-user-6.0.r7588-1](#), to Oracle VM Server. (19159220)

Security

This release includes the following Oracle VM Security Advisories:

Table 3.3 Oracle VM Security Advisories

Advisory Identifier	Severity	Description
OVMSA-2015-0022	Critical	Oracle VM 3.3 glibc security update
OVMSA-2014-0018	Critical	Oracle VM 3.3 bash security update
OVMSA-2015-0026	Important	Oracle VM 3.3 xen security update
OVMSA-2014-0014	Important	Oracle VM 3.3 nss security update
OVMSA-2014-0015	Important	Oracle VM 3.3 nss-util security update
OVMSA-2014-0012	Important	Oracle VM 3.3 openssl security update
OVMSA-2014-0023	Important	Oracle VM 3.3 nss security update
OVMSA-2014-0021	Important	Oracle VM 3.3 bash security update
OVMSA-2014-0017	Important	Oracle VM 3.3 glibc security update
OVMSA-2014-0025	Important	Oracle VM 3.3 xen security update
OVMSA-2014-0080	Important	Oracle VM 3.3 libXfont security update
OVMSA-2014-0032	Important	Oracle VM 3.3 openssl security update
OVMSA-2014-0038	Important	Oracle VM 3.3 xen security update
OVMSA-2015-0031	Important	Oracle VM 3.3 xen security update
OVMSA-2015-0034	Important	Oracle VM 3.3 kernel-uek security update
OVMSA-2015-0036	Important	Oracle VM 3.3 freetype security update

Advisory Identifier	Severity	Description
OVMSA-2014-0087	Important	Oracle VM 3.3 jasper security update
OVMSA-2015-0004	Important	Oracle VM 3.3 xen security update
OVMSA-2015-0006	Important	Oracle VM 3.3 jasper security update
OVMSA-2014-0083	Important	Oracle VM 3.3 rpm security update
OVMSA-2014-0082	Important	Oracle VM 3.3 nss security update
OVMSA-2014-0085	Important	Oracle VM 3.3 ntp security update
OVMSA-2014-0084	Important	Oracle VM 3.3 bind security update
OVMSA-2015-0003	Moderate	Oracle VM 3.3 glibc security update
OVMSA-2015-0033	Moderate	Oracle VM 3.3 bind security update
OVMSA-2015-0037	Moderate	Oracle VM 3.3 unzip security update
OVMSA-2015-0039	Moderate	Oracle VM 3.3 openssl security update
OVMSA-2015-0005	Moderate	Oracle VM 3.3 openssl security update
OVMSA-2014-0086	Moderate	Oracle VM 3.3 mailx security update
OVMSA-2014-0033	Moderate	Oracle VM 3.3 glibc security update
OVMSA-2014-0031	Moderate	Oracle VM 3.3 libxml2 security update
OVMSA-2014-0036	Moderate	Oracle VM 3.3 wget security update
OVMSA-2014-0030	Moderate	Oracle VM 3.3 rsyslog security update
OVMSA-2014-0034	Moderate	Oracle VM 3.3 krb5 security update
OVMSA-2014-0035	Moderate	Oracle VM 3.3 cups security update

3.5 What's New in Oracle VM Release 3.3.1?

The new features and enhancements in Oracle VM Release 3.3.1 include:

Programmability

- **Fully Supported Web Services API:** Oracle VM Manager now exposes a fully supported Oracle VM Web Services API that offers both SOAP and REST interfaces to program any action supported within Oracle VM. See the [Oracle VM Web Services API Developer's Guide](#) for more information.

Performance

- **New Statistics and Events model:** The statistics and events model has been entirely rewritten to offer significant performance gains. A queued job task is in place to monitor the number of generated statistics and to adjust the threshold automatically during periods where the number of statistics exceeds the threshold.
- **Oracle VM Server Notification Thresholding:** Oracle VM Server notifications can increase the number of generated events and jobs impacting on performance and filling log files to make them unusable. A facility has been provided to control and limit the number of notifications that an Oracle VM Server can generate by setting notification thresholds.
- **Huge Page Support:** Support for Huge Pages (or Super Pages) has been added to allow guests, hosted on an x86-based server pool, to take advantage of this functionality to improve performance and reduce the I/O that results from page lookups in virtualized environments. See [Create Virtual Machine](#) in the *Oracle VM Manager User's Guide* for more information on Huge Page support.

- **Improvements to Guest VM Messaging:** A change to the Oracle VM Guest Additions messaging facility to support multiple key-value pairs in a single message reduces the number of jobs generated within Oracle VM Manager, resulting in significant performance gains. See [Sending Messages to Virtual Machines](#) in the *Oracle VM Concepts Guide* for more information on guest virtual machine messaging.
- **Other Code Changes:** Various portions of the code-base have been rewritten to enhance performance in environments that have been scaled up to make use of many disks, storage repositories, Oracle VM Servers or virtual machines.

Security

- **Service Consolidation:** The number of required ports open in a deployment, and the mechanisms that are used for components to communicate have been reduced through the consolidation of various services and the global use of the Oracle VM Web Services API. These changes reduce the number of potential attack vectors available to malicious users. See the [Oracle VM Security Guide](#) for more information.
- **Certificate-based Authentication:** The Oracle VM Agent now uses SSL certificates to authenticate requests from Oracle VM Manager when an Oracle VM Server is discovered. This reduces the possibility that a malicious user can perform a brute-force dictionary attack to authenticate against an Oracle VM Server that is under the ownership of an Oracle VM Manager instance. Furthermore, certificate-based authentication can be used for all Oracle VM Web Services API requests, to ease automation while retaining a better security model for authentication. See the *Oracle VM Security Guide* for more information on SSL in Oracle VM.

Usability and Serviceability

- **New Virtual Machine Console:** The virtual machine console has been redesigned to use JavaScript and HTML5 features. There is no longer any requirement to install or run software locally on the client computer. The new console runs within the web-browser, and only requires that the browser is capable of supporting the technologies used. Most modern browsers are supported. This change reduces complexity and provides a more reliable console tool. See [Accessing the Virtual Machine Console](#) in the *Oracle VM Concepts Guide* for more information on the virtual machine console.
- **Virtual Machine Configuration File View:** It is now possible to view the virtual machine configuration file for any virtual machine directly within the Oracle VM Manager Web Interface and Oracle VM Manager Command Line Interface, to provide more transparency for the configuration that is actually applied to a virtual machine when it is started by the hypervisor. See [View Virtual Machine Configuration File](#) in the *Oracle VM Manager User's Guide* for more information on viewing the virtual machine configuration file.
- **Stack Trace Removal:** The Oracle VM Manager Command Line Interface no longer has stack trace information in job error messages. This makes it easier to read the more useful content of error messages.
- **Job Details Improvements:** The Oracle VM Manager Web Interface job details view (displayed by clicking the **Details** button in the **Job Summary** pane) has been improved with more appropriate information, and stack trace information has been removed. The job stack trace information is still available, but has been moved to the **Jobs** view. See [Job Details](#) in the *Oracle VM Manager User's Guide* for more information on job details.

Reliability

- **Database Consolidation:** Only the bundled Oracle MySQL Enterprise database is supported as a back end repository for the Oracle VM Manager. Removal of support for other Oracle Database types

allows Oracle VM Manager to have more control over regular automated database backup, support for database consistency checking tools, and other facilities required to improve reliability and performance. Furthermore, by limiting support to the bundled database, it is possible to improve troubleshooting documentation and tools.

- **Database Object Consistency Checking:** Tools are now in place to check the status of objects stored within the database, along with their relationships and references. These tools can assist in tuning the database and can help resolve potential database issues. Consistency checks are performed alongside the automated backup facility.
- **Inbound Migration Lock:** A new feature allows you to protect an Oracle VM Server from attempts to move or migrate other virtual machines to that server. This allows you to run selected virtual machines on a specified Oracle VM Server, and to be certain that no other virtual machines are started on the server, consuming resources that may be mission critical for some applications. See [How Can I Protect Virtual Machines?](#) in the *Oracle VM Concepts Guide* for more information.

Networking

- **Addition of Network Bridges and Virtual Switches to Model:** The Oracle VM Manager core model has been updated to provide better representation of network bridge and virtual switch objects as they exist on each Oracle VM Server. This helps to resolve issues where bridges or virtual switches have been created manually on an Oracle VM Server, and provides the mechanism to develop tools to better handle bridge and virtual switch configuration. See [Understanding Networks](#) in the *Oracle VM Concepts Guide* for information on network architecture.
- **Improved VLAN Support:** VLAN support has been completely restructured. The previous model, which involved configuring VLAN Groups and VLAN Segments, was inflexible, confusing, and could sometimes impact on the Management Network. VLAN support has been simplified, and introduces the concept of a VLAN Interface, allowing you to simply define which ports are used for which VLAN tags. You can define VLAN Interfaces as you need them and many of the restrictions on using VLANs have been removed. See [How are VLANs Used in Oracle VM?](#) in the *Oracle VM Concepts Guide* for information on VLANs.
- **Added Support for HTTP Proxies:** Oracle VM Manager now has added support to define an HTTP proxy to use when importing an assembly, virtual disk, or virtual CDROM. This change expands on the ability to define a proxy when importing a template or virtual machine.

SPARC Support

- **Support for iSCSI, Fibre Channel, ZFS and Local Disk for Virtual Machine Assignment:** iSCSI and Fibre Channel disks can now be discovered for SPARC systems, and can be directly assigned to virtual machines running in a SPARC server pool. Configuring storage repositories on these disks is currently not supported. Local disks, ZFS volumes and NFS exports can be discovered on SPARC systems and can be used for repositories, or can be assigned for use by any virtual machine running on the same server.
- **Package Management and SPARC Upgrades:** Added support for package management within the Oracle VM Agent has made it possible to manage future SPARC server upgrades directly from Oracle VM Manager. Changes to the upgrade tools within Oracle VM Manager allow you to define Server Update Groups where you can specify the IPS repository that should be used to perform future upgrades. See [Creating Server Update Repositories in Oracle VM Manager](#) in the *Oracle VM Installation and Upgrade Guide* for information on creating Server Update Groups for SPARC.
- **Support for HA Virtual Machines:** Virtual machines running in a SPARC server pool can now be configured for high availability if the storage for the server pool is using an NFS file system. See [How does High Availability \(HA\) Work?](#) in the *Oracle VM Concepts Guide* for information on high availability.

- **Improved Network Support:** The following network functionality is now supported on Oracle VM Server for SPARC systems:
 - Active-Backup network bonding.
 - VLAN integration.
 - Jumbo Frames and MTU configuration on network port and bond configuration.

Installation and Upgrades

- **Oracle VM Server Installation Partitioning:** The Oracle VM Server Installer now handles all disk partitioning itself, to optimize installation. Part of this process make sure that only the maximum required disk space for the Oracle VM Server software is used. Any remaining disk space is automatically partitioned to be used as a discoverable local disk that can be used to host a storage repository, or attached to a virtual machine hosted on the server. This improvement to disk space usage ensures the best possible use of machine resources. This change is only supported for locally hosted boot disks and does not apply to SAN disks.

Documentation

- **New Guides and Improved Interface Coverage:** The documentation has been restructured to provide more comprehensive coverage. The [Oracle VM Manager User's Guide](#) has been structured to map more directly onto the Oracle VM Manager Web Interface, to make it easier to find information in the context of user interface related items. A new guide, the [Oracle VM Concepts Guide](#), has been created to cover more conceptual information, and to answer many more generic questions about the architecture and configuration of an Oracle VM deployment. The previously named *Oracle VM Utilities Guide* has been replaced with the [Oracle VM Administration Guide](#), which provides broader coverage of all items relating to the underlying administration of an Oracle VM deployment, including handling backups, configuring SSL certificate,s and general troubleshooting. A new [Oracle VM Web Services API Developer's Guide](#) has been created to provide some general guidelines, and an introduction to programming against the Oracle VM Web Services API.

Infrastructure

- **Infrastructure Changes in Oracle VM Manager:** Much of the technology used to enable Oracle VM Manager has been updated to take advantage of new features, improved performance and security fixes. Major changes to these components include:
 - Oracle WebLogic Server upgraded to 12c.
 - Java upgraded to version 7.
 - MySQL Database upgraded to version 5.6.

The Oracle VM Manager Web Interface and the Oracle VM Manager Command Line Interface have been rewritten to use the new Oracle VM Web Services API to provide further consolidation.

- **Infrastructure Changes in Oracle VM Server:** Major changes to the underlying technology used for Oracle VM Server on x86 hardware have been implemented, including:
 - Xen hypervisor upgraded to version 4.3.
 - Dom0 kernel upgraded to Oracle Linux 6.
 - Linux kernel (used in dom0) updated to Oracle Unbreakable Enterprise Kernel 3 (UEK3).

3.6 What's New in Oracle VM Release 3.2.1?

The new features and enhancements in Oracle VM Release 3.2 include:

Performance, Scalability and Security

- **Support for Oracle VM Server for SPARC:** Oracle VM Manager can now be used to discover SPARC servers running Oracle VM Server for SPARC, and perform virtual machine management tasks.
- **New Dom0 Kernel in Oracle VM Server for x86:** The Dom0 kernel in Oracle VM Server for x86 has been updated so that it is now the same Oracle Unbreakable Enterprise Kernel 2 (UEK2) as used in Oracle Linux, for complete binary compatibility with drivers supported in Oracle Linux. Due to the specialized nature of the Oracle VM Dom0 environment (as opposed to the more general purpose Oracle Linux environment) some Linux drivers may not be appropriate to support in the context of Oracle VM, even if the driver is fully compatible with the UEK2 kernel in Oracle Linux. Do not install any additional drivers unless directed to do so by Oracle Support Services.

Installation

- **MySQL Database Support:** MySQL Database is used as the bundled database for the Oracle VM Manager management repository for simple Installations. Support for an existing Oracle SE/EE Database is still included within the installer so that you can perform a custom installation to take advantage of your existing infrastructure. Simple Installation using the bundled MySQL Database is fully supported within production environments.
- **Discontinued inclusion of Oracle XE Databases:** Oracle VM Manager no longer bundles the Oracle XE database as a back end database. If you are currently running Oracle VM Manager using Oracle XE and you intend to upgrade you must first migrate your database to Oracle SE or Oracle EE.
- **Oracle VM Server Support Tools:** A meta-package is provided on the Oracle VM Server ISO enabling you to install packages to assist with support. These packages are not installed automatically as they are Oracle VM Server does not depend on them. Installation of the meta-package and its dependencies may assist with the resolution of support queries and can be installed at your own discretion. Note that the `sudo` package was previously installed as a dependency for Oracle VM Server, but that this package has now been made a dependency of the `ovs-support-tools` meta-package. If you require `sudo` on your Oracle VM Server installations, you should install the `ovs-support-tools` meta-package.

Usability

- **Oracle VM Manager Command Line Interface (CLI):** The new Oracle VM Manager Command Line Interface can be used to perform the same functions as the Oracle VM Manager Web Interface, such as managing all your server pools, servers and guests. The CLI commands can be scripted and run in conjunction with the Web Interface, thus bringing more flexibility to help you deploy and manage an Oracle VM environment. The CLI supports public-key authentication, allowing users to write scripts without embedding passwords, to facilitate secure remote login to Oracle VM Manager. The CLI also includes a full audit log for all commands executed using the facility. See the [Oracle VM Manager Command Line Interface User's Guide](#) for information on using the CLI.
- **Accessibility options:** Options to display the UI in a more accessible way for screen readers, improve the contrast, or increase the font size. See [Oracle VM Manager Accessibility Features](#) in the *Oracle VM Manager User's Guide* for more information.
- **Health tab:** Monitor the overall health and status of your virtualization environment and view historical statistics such as memory and CPU usage. See [Health Tab](#) in the *Oracle VM Manager User's Guide* for information on using the **Health** tab.

- **Multi-select of objects:** Select one or more objects to perform an action on multiple objects, for example, upgrading multiple Oracle VM Servers in one step, rather than upgrading them individually. See [Multi-Select Functionality](#) in the *Oracle VM Manager User's Guide* for information on using the multi-select feature.
- **Search for objects:** In many of the tab management panes and in some of the dialog boxes you can search for objects. This is of particular benefit to large deployments with many objects such as virtual machines or Oracle VM Servers. See [Name Filters](#) in the *Oracle VM Manager User's Guide* for information on using the search feature.
- **Tagging of objects:** It is now possible to tag virtual machines, servers and server pool objects within Oracle VM Manager to create logical groupings of items, making it easier to search for objects by tag.
- **Alphabetized tables and other UI listings:** Items listed in tables and other UI listings are now sorted alphabetically within Oracle VM Manager by default, to make it easier to find objects in larger deployments.
- **Present repository to server pools:** In addition to presenting a storage repository to individual Oracle VM Servers, you can now present a repository to all Oracle VM Servers in one or more server pools. See [Present or Unpresent Repository](#) in the *Oracle VM Manager User's Guide* for more information.
- **OCFS2 timeout configuration:** An additional attribute has been added to allow you to determine the timeout in seconds for a cluster when configuring a clustered server pool within Oracle VM Manager.
- **NFS refresh servers and access lists for non-uniform exports:** For NFS configurations where different server pools are exposed to different exports, it is now possible to configure non-uniform exports and access lists to control how server pool refreshes are performed. For more information on this feature, see [Access Groups Perspective](#) in the *Oracle VM Manager User's Guide*.
- **Configure multiple iSCSI access hosts:** You can now configure multiple access hosts for iSCSI storage devices
- **Sizes of disks, ISOs and vdisks:** Oracle VM Manager now shows the sizes of disks, ISOs and vdisks within the virtual machine edit dialog, to make it easier to select a disk.
- **Automated backups and easy restore:** Oracle VM Manager installations taking advantage of the bundled MySQL Enterprise Edition Database include fully automated database backups and a quick restore tool that can help with easy database restoration.
- **Serial console access:** A serial console java applet has been included within Oracle VM Manager to allow serial console access to virtual machines running on both SPARC and x86 hardware. This facility complements the existing VNC-based console access to virtual machines running on x86 hardware.
- **Set preferences for recurring jobs:** Facilities have been provided within Oracle VM Manager to control the preferences for recurring jobs. These include the ability to enable, disable or set the interval for tasks such as refreshing repositories and file systems; and to control the server update repository checking task.
- **Processor Compatibility Groups:** Since virtual machines can only be migrated between servers that use compatible processor types, Oracle VM Manager now provides the ability to define Processor Compatibility Groups to enable you to pick which servers a virtual machine can be migrated between.
- **Configure additional Utility and Virtual Machine roles:** New roles are now supported on Oracle VM Servers to control the type of functionality that the server will be responsible for. The Virtual Machine role is required in order for an Oracle VM Server to run a virtual machine. Oracle VM Servers configured with the Utility role are favoured for performing operations such as file cloning, importing of templates, the creation of repositories, and other operations not directly related to running a virtual machine.

- **Directly import a virtual machine:** It is now possible to directly import a virtual machine using Oracle VM Manager, no longer requiring that you first import to a template and then clone.
- **Virtual machine start policy:** You can now specify a start policy for a virtual machine, determining whether to always start the virtual machine on the server on which it has been placed, or to start the virtual machine on the best possible server in the server pool.
- **Hot-add a vNIC to a virtual machine:** It is now possible to add a vNIC directly to a running virtual machine from within Oracle VM Manager.
- **Send messages to a virtual machine:** Facilities have been provided within Oracle VM Manager to send messages directly to a virtual machine in the form of key-value pairs.
- **NTP configuration:** Ensuring that time is synchronized across all servers is important. Oracle VM Manager now provides a facility to bulk configure NTP across all servers.

3.7 What's New in Oracle VM Release 3.1.1?

The new features and enhancements in Oracle VM Release 3.1.1 include:

Performance, Scalability and Security

- **Updated Xen Hypervisor:** Xen is updated to Release 4.1.2.
- **New Dom0 Kernel in Oracle VM Server for x86:** The Dom0 kernel is now the same Oracle Unbreakable Enterprise Kernel 2 (UEK2) as used in Oracle Linux, for complete binary compatibility with drivers supported in Oracle Linux. Due to the specialized nature of the Oracle VM Dom0 environment (as opposed to the more general purpose Oracle Linux environment) some Linux drivers may not be appropriate to support in the context of Oracle VM, even if the driver is fully compatible with the UEK2 kernel in Oracle Linux. Do not install any additional drivers unless directed to do so by Oracle Support Services.
- **Jumbo Frames Support:** Fully supports different MTU sizes. See [Create Bond Port](#) in the *Oracle VM Manager User's Guide* for information on setting the network MTU size.
- **LUN Resizing:** A LUN (either used as a storage repository or a server pool file system) also resizes the OCFS2 file system.
- **Backup/Restore Access to OCFS2 Storage Repositories:** Present OCFS2 storage repositories as NFS shares to enable access to external tools in order to back up and copy storage repository contents. See [Repository Exports Perspective](#) in the *Oracle VM Manager User's Guide* for more information on enabling back ups of storage repositories.
- **Move OCFS2 Repositories Between Server Pools:** Remove an OCFS2 storage repository from one server pool and add it to another. The process of moving a storage repository from one server pool to another has been streamlined to facilitate easier disaster recovery and more storage agility.

Installation

- **Multipath Boot from SAN:** Oracle VM Server can be installed to perform boot from multipath SAN without requiring any type of local storage.

Usability

- **Create Virtual Machine Templates:** Virtual machines can be cloned as templates, templates can be used to create other templates, and a template can be created in a similar way as creating a virtual

machine using a wizard. See [Clone a Virtual Machine or Template](#) in the *Oracle VM Manager User's Guide* for information on creating virtual machine templates.

- **Clone Virtual Machines and Templates:** Cloning a virtual machine or template (including the configuration information, disk resources, storage and networking). See [Clone a Virtual Machine or Template](#) in the *Oracle VM Manager User's Guide* for more information on moving and cloning virtual machines and templates.
- **Hot Add vCPUs:** Add virtual CPUs on the fly to a running virtual machine. See [Edit Virtual Machine](#) in the *Oracle VM Manager User's Guide* for information on editing a virtual machine and adding vCPUs to a running virtual machine.
- **Discover Multiple Oracle VM Servers Using Hostnames and IPs:** Discover Oracle VM Servers by entering or pasting in multiple hostname or IP addresses in a text field, instead of entering each IP address individually. See [Discover Servers](#) in the *Oracle VM Manager User's Guide* for information on discovering Oracle VM Servers.
- **Virtual Machine Keyboard Mapping:** Support for keyboard mapping for different languages for each individual virtual machine, not just for the server pool. See [Create Virtual Machine](#) in the *Oracle VM Manager User's Guide* for information on the keyboard mapping when creating a virtual machine.
- **Virtual Machine Console:** If the a virtual machine console is in use by another user, you can take over control of the virtual machine console. See [Launch Console](#) in the *Oracle VM Manager User's Guide* for information on the virtual machine console.
- **User Interface Enhancements:** Significant user interface enhancements improve ease of use, make work flows more intuitive, and reduce the amount of clicks required to perform tasks. See [Using Oracle VM Manager](#) in the *Oracle VM Manager User's Guide* for information on the Oracle VM Manager user interface.
- **Drag and Drop:** Objects can be dragged and dropped in the user interface. See [Drag and Drop](#) in the *Oracle VM Manager User's Guide* for information using the drag and drop feature.

3.8 What's New in Oracle VM Release 3.0.3?

The new features and enhancements in Oracle VM Release 3.0.3 include:

Performance, Scalability and Security

- **Anti-Affinity Support:** Define which virtual machines cannot reside on the same Oracle VM Servers. Use this feature to achieve better availability by ensuring that critical resources do not reside on a shared single point of failure. See [Anti-Affinity Groups Perspective](#) in the *Oracle VM Manager User's Guide* for information on anti-affinity .
- **Change Oracle VM Agent Password:** The Oracle VM Agent password for all Oracle VM Servers in a server pool can be changed from Oracle VM Manager.

Installation

- **Maintain Oracle VM Manager Identity After Reinstall:** See [Installing Oracle VM Manager](#) in the *Oracle VM Installation and Upgrade Guide* for information on how to reinstall Oracle VM Manager and maintain the previous UUID.

Usability

- **User Interface:** Improved wizards to allow smooth operation and closely match operational needs.

- **Virtual Machines:** Explicitly set maximum memory when creating virtual machines. Flexibility to update virtual disk attributes. Choose thick or thin provision. CDROM dynamic update. Virtual machine console does not require username/password. See [Understanding Virtual Machines](#) in the *Oracle VM Concepts Guide* for information on these new virtual machine features.
- **Live Migration Assistant:** During live migration, only *allowed* target Oracle VM Servers can be selected in the Live Migration dialog box. An additional section entitled **Why don't I see other servers to migrate to?** shows why migrating to a given server is not possible. Anti-affinity and hardware factors such as CPU family are taken into account.
- **Maximum Guest Memory:** The new **Create Virtual Machine** wizard contains a maximum memory setting. This is the maximum amount of RAM you can configure for the running virtual machine.

3.9 What's New in Oracle VM Release 3.0.2?

The new features and enhancements in Oracle VM Release 3.0.2 include:

Performance, Scalability and Security

- **Updated Xen 4.0 Hypervisor:** More efficient power management capabilities, broader hardware support, and better performance, scalability and security for both hardware virtualized and paravirtualized guests.
- **Updated Dom0 Linux Kernel with Newer Drivers:** Better hardware support for higher performance, with the latest Unbreakable Enterprise Kernel.
- **Improved Scalability:** Capable of supporting Oracle VM Servers with up to 160 CPUs and 2 TB memory.
- **Updated OCFS2 1.8 Cluster File System:** Instant clone support in OCFS2 1.8 enables significantly faster virtual machine provisioning and cloning.
- **Support for OVF:** Use Oracle VM Manager to import a broad range of Open Virtualization Format (OVF) based software assemblies produced by Oracle to accelerate application deployment. See [How are Virtual Appliances Managed?](#) in the *Oracle VM Concepts Guide* for information on working with assemblies.

Network and Storage Configuration and Management

- **Network Configuration and Management:** All Oracle VM Server logical network configuration and management is now performed using Oracle VM Manager, for example, NIC port bonding, and configuring VLAN Networks. See [Understanding Networks](#) in the *Oracle VM Concepts Guide* for information on network management in Oracle VM Manager.
- **Storage Configuration and Management:** The Oracle VM Storage Connect framework enables Oracle VM Manager to directly access the resources and functionality of existing storage systems, supporting native storage services such as SAN or NFS storage creation, deletion, expansion. This allows Oracle VM Manager to automatically discover available storage and create new storage repositories, or to map raw storage directly to virtual machines. See [Storage Tab](#) in the *Oracle VM Manager User's Guide* for information on storage management.

Physical and Virtual Status and Resource Information

- **Resource Information:** Performance statistics are available for CPU, memory, disk and network for each physical Oracle VM Server and virtual machine. Events are displayed for each physical and virtual

object, such as port up/down status. IP address and other configuration information is displayed directly in the user interface.



Note

Not all metrics are exposed through the Oracle VM Manager user interface.

Policy-Based Resource Management

- **Distributed Resource Scheduling (DRS) for Capacity Management:** DRS provides real-time monitoring of Oracle VM Server utilization with the goal to rebalance a server pool to provide consistent resources to the running virtual machines. DRS migrates load away from heavily-loaded Oracle VM Servers to less-loaded Oracle VM Servers.
- **Distributed Power Management (DPM) to Optimize Server Pool for Minimum Power Consumption:** DPM complements DRS to reduce the Oracle VM Servers in a server pool when there are periods of low resource utilization. DPM can automatically add capacity as needed when resource utilization increases.

See [What are Server Pool Policies?](#) in the *Oracle VM Concepts Guide* for information on using DRS and DPM.

Usability

- **User Interface:** Based on the latest Oracle Application Development Framework (ADF), Oracle VM Manager now includes a fully interactive tree view and automatic refresh to show the real-time state of the physical and virtual environment. See [Using Oracle VM Manager](#) in the *Oracle VM Manager User's Guide* for information on using the new user interface.
- **Virtual Machines:** Specify the boot order (for example: disk, CDROM) to simplify installs. Directly attach raw storage or virtual disks (vdisks). See [Understanding Virtual Machines](#) in the *Oracle VM Concepts Guide* for information on virtual machines.

Chapter 4 Notable Bug Fixes

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Each Oracle VM release includes bug fixes that improve performance, usability, or resolve significant issues. Because each release contains many bug fixes, it is beyond the scope of this document to provide an exhaustive list of each bug fix. Rather, this chapter highlights the more notable bug fixes in each release.

4.1 Bug Fixes in Oracle VM 3.4.1

Oracle VM Release 3.4.1 includes the notable bugs that have been fixed in the earlier 3.3.x errata releases. Additionally, Oracle VM 3.4.1 includes a number of enhancements, as described in [Section 3.1, "What's New in Oracle VM Release 3.4.1?"](#).

Oracle VM Manager build 1369 is an errata update for the Release 3.4.1 build 1350. Build 1369 offers fixes for bugs that were identified after build 1350 was released. Oracle VM Manager Release 3.4.1 build 1369 has been validated in combination with Oracle VM Server Release 3.4.1 build 1351 and Oracle VM Agent for SPARC Release 3.4.1 build 1350.

Notable bugs fixed in Oracle VM Manager Release 3.4.1 build 1369 are as follows:

- Fixes an issue where the upgrade does not complete when VM origin URLs or network install path is greater than 512 characters. (23003986)
- Fixes an issue where OVA files with URLs that are greater than 512 characters cannot be imported. (23012337)
- Fixes an issue where the user cannot proceed beyond the web UI login prompt after successfully entering user credentials. (23017746)
- Fixes an issue where in some cases the pre-upgrade script fails with an error "cannot concatenate 'str' and 'javainstance' objects". (23031621)

4.2 Bug Fixes in Oracle VM 3.3.4

The following notable bugs are fixed in Oracle VM Release 3.3.4:

- Resolves a problem where in some cases that an Oracle VM Manager event (ArchiveTask) does not have the proper status. (22300975)
- Fixes a problem with the UI where in some cases the parent job is marked as completed in the job summary; however, the children jobs are still running. (22101966)

- Corrects a problem where the database backup hangs on an upgrade if there is a root keystore. (21804503)
- Corrects a problem that Oracle VM Manager failed to be installed on Oracle Linux 6.7. (21548314)
- Sets the default CLI client inactivity timeout value to 45 minutes to allow for the copy of large files. (21547396)
- Fixes an issue where the Java processes grow very large with many VMs. (21368302)
- Enhances the periodic database cleanup process when it is unable to keep up with many VMs and the database grows over time. (21320889)
- Enhances the discovery process by dropping invalid Page83 ID events from the Server. (21121751)
- Fixes an issue that prevents users to add more than 4 virtual disks to Solaris 10 guest (Oracle Solaris 10 1/13) with the domain type Xen_HVM_PV_Drivers. (20626989)
- Fixes a compatibility issue in Oracle VM Agent database (Berkeley DB) during the server upgrade. (22821483)
- Fixes a problem where a PVHVM guest cannot start when Xen virtual disk is on the driver domain. (22242513)
- Fixes a problem that Oracle VM Server installation failed on the HP BL465C GEN8. (21906833)
- Fixes a problem that HVM guest failed to launch using xl command. (21748894)
- Fixes a Xen hypervisor bug that caused race condition under certain situation. (21544772)
- Fixes an issue where kdump was not working when X2APIC is set to "enable". (21197271)
- Fixes an issue where the deprecated ETHTOOL_OFFLOAD_OPT needs to be converted to ETHTOOL_OPTS in network startup script upgrading from Oracle VM Server 3.3.1. (20989506)
- Improves the memory release during a graceful VM shutdown. (20816684)
- Fixes an issue where the LRO setting should be disabled when the interface is part of a bridge. (20390557)
- Fixes a problem where the kickstart installation failed for a specific VLAN interface. (20011623)
- Fixes an issue where rebooting a large VM (256G memory and higher) took over 4 minutes. (19731529)
- Fixes a problem where a VM cannot be started when the images are stored on the NFS server of another VM. (18889929)
- Resolves an issue where the Oracle VM Agent does not come up with Python 2.7 which is the default for Solaris 11.3. (21976240)
- Fixes a problem where the Manager was unable to discover a SPARC server with a virtual switch. (21302405)

4.3 Bug Fixes in Oracle VM 3.3.3

The following notable bugs are fixed in Oracle VM Release 3.3.3:

- Disables the transitional YUM repository temporarily during an upgrade to ensure a successful upgrade between Oracle VM Server 3.3.x errata releases. (20330043)

- Fixes an issue in the statistic query builder for the file system. (20364416)
- Fixes a problem with the upgrade script that was causing it to fail after the first step in the process. (20372446)
- Fixes a null pointer exception error with Page83 when attempting to delete a server from a pool or model. (20373362)
- Fixes a problem where resizing existing LUNs did not always work. (20397450)
- Fixes a problem with an SSL handshake exception when adding a customer SSL certificate. (20702236)
- Fixes a server sorting problem in the navigation panel in the Oracle VM Manager Web Interface. (20814532)
- Fixes an issue where the console did not display information about virtual machines after an upgrade. (20828842)
- Fixes an issue where user was not able to register multiple storage arrays. (20958122)
- Fixes an issue that caused autobackup feature to hang. (21123499)
- Fixes an error condition where sometimes after rebooting a virtual machine, an ext4 filesystem error is displayed. (19357800)
- Fixes long server discovery time with a large number of disks on Oracle VM Server for SPARC. (20158892)
- Fixes Discover_Network failure with "no device found for vswitch" message on Oracle VM Server for SPARC. (20593971)
- Disables GRO on new installs when routing/bridging with IXGBE driver. (19514003)
- Fixes an issue with a VLAN created over a bond, where it may not come up on restart if the MAC address of the bond changes. (19802253)
- Fixes an issue where dom0 kernel reported "Can't map rx data" with bnx2x 10Gb NICs (20397398)
- Fixes a problem where refreshing a file server would sometimes return the error message "too many values to unpack". (20510340)
- Fixes an issue when upgrading from Oracle VM Server 3.2 the ETHTOOL_OFFLOAD_OPT parameter name changed to ETHTOOL_OPTS in ifcfg files. (20526276)
- Fixes a problem with select hardware configurations where dom0 does not come back online after a reboot. (20659992)
- Fixes an issue where guests were not shutting down correctly. (20663386)
- Fixes a problem where a Brocade HBA does not detect storage and shows the error "kernel: Can't locate firmware cbfw-3.2.3.0.bin". (20682061)
- Fixes a deadlock problem when calling logging functions in XendBootloader. (20752002)
- Fixes an intermittent issue where a virtual machine would not bootup after a successful shutdown. (20781679)
- Fixes an issue where InfinBand Virtual Functions were being put "Out of Service" when large virtual machines were being started or shutdown. (21133414)

- Fixes a problem where memory release was slow during a graceful shutdown of a virtual machine. (21133543)
- Fixes a problem when rebooting a large virtual machine takes a long time and causes the XM CMD to hang. (21133626)
- Fixes an issue where Live Migration with the -SSL option fails with a bad descriptor error. (21269578)

4.4 Bug Fixes in Oracle VM 3.3.2

The following notable bugs are fixed in Oracle VM Release 3.3.2:

- Fixes an issue that causes network discover to fail when Oracle VM Agent for SPARC is installed on Oracle Solaris 11.2 under certain configuration. (20646623)
- Fixes an issue that causes changing the MTU to fail when the dlmp service is enabled. (20185577)
- Fixes an issue that causes the action of taking ownership to fail when the control domain runs Oracle Solaris 11.2. (20185575)
- Fixes an issue that causes Oracle VM Agent for SPARC to fail on Oracle Solaris 11.2 control domain. (18371968)
- Fixes a server upgrade issue where fba (Brocade Fibre Channel HBA Driver) is not loaded for the FC slots. (20729090)
- Fixes an issue where the virtual machine status shows "domain-unnamed" after live migration. The fix is delivered with newer Xen package (xen-4.3.0-55.el6.22.18 or later). (20687187)
- Fixes an issue that live migration from earlier Oracle VM Server versions to 3.3.2 leaves Linux PVHVM guest in a hung state. The fix is delivered with newer Xen package (xen-4.3.0-55.el6.22.18 or later). (19517860)
- Fixes an issue that idle virtual machines may use more CPU resources than they need. (20138111)
- Fixes a network setting issue by using the "ETHTOOL_OPTS" directive instead of "ETHTOOL_OFFLOAD_OPTS". (19731130)
- Fixes "unauthorized access" errors when an Oracle VM Server has been removed from a clustered server pool. (19725961)
- Fixes an issue where the virtual machine cannot ssh to a server located outside the Oracle VM environment. (19589497)
- Fixes an issue when stopping a virtual machine. (19557384)
- Fixes the issue where an HVM guest may reboot under certain configuration. (19440731)
- Fixes the issue where a PXE boot installation fails when there is no DNS resolution. (19181050)
- Fixes incorrect copying of small files. (19121000)
- Fixes an issue where Oracle VM Server cannot be installed on a server that has a LUN attached with a Windows file system. (19173545)
- Fixes an issue that caused some other software installation to fail. (19181087)
- Fixes a user interface issue when cloning Oracle VM templates using Internet Explorer 9. (20077741)

- Fixes an issue with the SOS Report Tool to include the vm.cfg files and Ethtool data. (19952640)
- Fixes the issue where the VM START ON BEST Server Policy does not balance the load correctly. (19982628)
- Fixes a time-out issue for Oracle VM Manager Web Services during long-running operations. (19788626)
- Fixes the issue where a successfully launched Job is killed after multiple launch attempts. (19636855)
- Fixes an issue to show the correct virtual machine console of the selected virtual machine. (19590077)
- Fixes the issue where adding an Oracle VM Server that has its management network interface in a VLAN, didn't add the IP address and hostname to the /etc/hosts file. (19587036)
- Fixes an issue that caused an upgrade failure. (19526524)
- Fixes an upgrade issue where the MTU is inconsistent between the Bridges and the Virtual Interfaces (VIFs). (19241260)
- Fixes the issue that some special characters were not handled correctly when using Firefox browser to access the serial console. (19187642)
- Fixes the issue where non-sparse Virtual Disks became sparse after resizing them via the Oracle VM Manager. (19146857)
- Fixes the issue where sparse copying of virtual disks did not work in SPARC environments. You must run Oracle Solaris 11.2 or greater within the control domain. (14851945)
- Fixes the issue where Oracle VM Manager shows the disk size as 0 when using multipath devices and the first device in the list is passive. (19131600)
- Fixes the issue that Control-C is mishandled in serial console. (19004079)
- Fixes the issue that the serial console fails to display long entries correctly. (18969505)
- Fixes the issue of non-US keyboard mapping when accessing virtual machine console. (18089107)
- Fixes the issue that the cursor is not displayed in the serial console for SPARC guest. (18085387)
- Updates MySQL to the newer version 5.6.21. (20062369)
- Includes the latest critical patch update for Weblogic from October 2014. (19346370)
- Includes Java 7 critical patch updates in Oracle VM Manager (19346310)

4.5 Bug Fixes in Oracle VM 3.3.1

The following notable bugs are fixed in Oracle VM Release 3.3.1:

- Fixes an issue with uninstalling Oracle WebLogic Server during uninstalling Oracle VM Manager. (16203060)
- Fixes an issue where the Oracle VM Manager does not initialize after installing and starting it. (16202979)
- Fixes an issue where an object cannot be deleted.(16823781)
- Fixes an "Object Not Found" exception when deleting a file system mount. (17219387)

- Fixes an issue where it is not possible to upgrade due to a JDBC connection error. (17250224)
- Fixes a performance issue to speed up the discovery process of a physical LUN. (17447037)
- Fixes an issue to properly handle duplicated storage initiators when deleting an Oracle VM Server. (17263779)
- Adds support to specify the network ID when editing a Virtual NIC via the Oracle VM Manager Command Line Interface. (17294253)
- Fixes an issue in which VLAN objects were deleted during discovery. (16886580)
- Fixes the failure which occurred when trying to add more than four disks on Solaris 10. (16939432)
- Fixes an issue where ISCSI log out fails with the error "FAILED TO DELETE NODE RECORD FOR PORTAL". (16886208)
- Fixes the exception when Oracle VM Manager is started and shows the error "FAILED TO START MODEL ENGINE - JAVA.LANG.NULLPOINTEREXCEPTION". (17192350)
- Fixes the exception that occurs during the Storage Connect plug-in upgrade when Oracle VM Manager cannot access the plug-in. (16855900)
- Fixes a performance issue to speed up job debug transcript. (16988868)
- Fixes the issue where jobs are missing start and end times. (17192350)
- Fixes the issue to make sure a server local network does not have any ports allocated to it before creating the network. (17173360)
- Fixes an issue that prevented Oracle VM Server from upgrading to a version not supported by Oracle VM Manager. (16225828)
- Fixes an issue with redundant "refresh storage layers" operations in the case of multiple LUNs presented to an access group. (16345107)
- Fixes an issue with "Object Not Found" exceptions during parallel operations which include discovery and VM delete. (16569334)
- Fixes Null Pointer Exception in the event of a null Storage Connect plug-in. (16843328)
- Fixes problem importing a VM on SPARC servers. (16441398)
- Improves Oracle VM Manager performance. (16600883)
- Displays the correct version number for Oracle VM Manager during installation or upgrade. (16473785)
- Fixes incorrect object count for virtual machines in the Oracle VM Manager log files. (16382730)
- Prevents thread leaks when stopping multiple virtual machines sequentially or in parallel when using the Oracle VM Manager CLI. (16357202)
- Prevents a Null Pointer Exception when removing a LUN from an Access Group. (16357417)
- Fixes a rare condition when the starting command of a virtual machine did not get executed. (16051311)
- Fixes a security vulnerability exposed by Oracle VM Manager upgrade process. (16239127)
- Fixes the "Object Not Found" issue when a virtual disk file has been manually removed (or renamed). (16226364)

- Fixes a memory leak issue after exiting the Oracle VM Manager Command Line Interface when running the `exit.sh` script. (16236217)
- Adds certain event classes required by some Oracle software. (16092276)
- Fixes the issue that the Oracle VM Guest Additions (VM-API) send keys and values are logged in events. (16179187)
- Adds support in Oracle VM Manager Command Line Interface for returning the "Page83 ID" when listing physical disks. (15950559)
- Improves the time needed to scrub the free memory during installation or boot time for Oracle's Sun Server X2. (14829299)
- Fixes an issue where weak cipher connections are allowed for secure live migration. (16721961)
- Fixes an issue where the Oracle VM Agent allows weak cipher connections. (16721654)
- Fix which includes Xen tools (QEMU) patches to make hot-plug for vCPU work correctly. (17562626)
- Fixes an issue where the (deprecated) `modprobe.conf` file was still used for bonding configuration. (16892503)
- Updates the `ethtool` package to support the `-f` option. (17264204)
- Fixes an issue where OVMWATCH reports the wrong UUID on live migration. (16453997)
- Fixes an issue where HVM virtual machines in an OVF assembly have a limit of four virtual disks. (16609127)
- Fixes an issue with mounting EMC Power Path volumes. (16511097)
- Fixes an issue where the network interface does not come up after reboot in LACP mode. (16495256)
- Fixes an issue where PV virtual machines cannot connect to network when using 31 virtual interfaces. (16039922)
- Fixes an issue that failover failed on bond using `ixgbe` driver with jumbo frames enabled. (16886409)
- Disables the bridge `multicast_snooping` to avoid potential packet drop from the guests. (16746299)
- Fixes an upgrade issue to return the correct UUID when discovering an Oracle VM Server with an SMBIOS newer than version 2.6. (16221689)
- Sets a maximum of 20 vCPUs for Dom0 on large systems to provide better out-of-the-box 10Gb Ethernet performance. (15865742)
- Adds IPMI lanplus interface support. (14777351)
- Fixes an issue where a SPARC virtual machine may fail to access its ZFS pool after restart from Oracle VM Manager. (16909866)
- Fixes the issue where duplicated warning message is displayed when logging into the control domain. (16173730)
- Adds package dependency on NTP to ensure it is present. (16297871)
- Fixes the issue that Oracle SPARC M5 servers are not correctly identified. (16383869)

- Provides the update script to perform Oracle VM Agent upgrade on SPARC. (16383971)

4.6 Bug Fixes in Oracle VM 3.2.1

The following notable bugs are fixed in Oracle VM Release 3.2.1:

- Fixes the issue where during server discovery, Oracle VM attempted to discover all file server mounts even if the server was not in the file server's admin server list. (14573204)
- Improves the handling of slave ports with differing MTU settings during bond creation. (13929346)
- Adds check for network port value, prevents a null pointer exception from being thrown. (14653155)
- Fixes the "Object Not Found" issue when hitting the Escape button in the VLAN dialog box. (15827079)
- Adds support for dynamically changing the cluster store cache size. The default cache size is now 150K. (15850684)
- Fixes the issue where the latest update of Microsoft Internet Explorer versions 7, 8 and 9 failure to connect to Oracle VM Manager over HTTPS . (14754924)
- Fixes the issues where closing the browser leaves open jobs in Oracle VM Manager in a bad state. (15838028)
- Removes unnecessary locks when creating VNICs in a multi-threaded operation. (14054156)
- Fixes the issue when discovering a virtual machine that has disks in a undiscovered repository or has undiscovered physical disks. (14104117)
- Object not found where vdisks are left stale in certain multi-thread operations.(14043681)
- Oracle VM Manager hangs after a restart due to various tasks running jobs in the global context. (14175298)
- Stale lock issue on multithreaded server where object not found error happens in some rare situations. (14108096)
- Oracle VM Manager fails to discover the server or start the server after the server hardware configuration (i.e. BIOS) was modified. (14169237)
- HTTP cannot be disabled. (13524729)
- Oracle VM Manager UI time-out issue where the default value is not long enough for storage repository creation. (13925232)
- List of target servers (and "other servers") is not ordered by name when migrating a virtual machine. (14160596)
- Size of the "Edit Vlan Group" window should display all information correctly. (14160610)
- Navigation tree (servers) is not ordered by name. (14160581)
- Upgrade process must not continue when the Oracle VM Manager cannot be stopped. (14305714)
- Issue in server rediscovery due to the YUM repository URL reset. (14228607)
- iSCSI initiators are no longer associated with the ZFS Storage Appliance Access Groups after a restart of the Oracle VM Manager . (14180913)

4.7 Bug Fixes in Oracle VM 3.1.1

The following notable bugs are fixed in Oracle VM Release 3.1.1:

- Outage scenario requires acknowledging multiple events on multiple objects. (13845733)
- The installer does not allow the reuse of an existing database. (13744793)
- Cannot remove server pool file system from Oracle VM Manager if the server pool file system is corrupted. (13601257)
- Unable to create a repository on a LUN that already has partitions on it. (13596838)
- HVM guests failed to start or panic when MEM is not equal to MAXMEM. (13560881)
- Cannot remove VM and Oracle VM Server from Oracle VM Manager if the Oracle VM Server goes away. (13473061)
- OCFS2 storage repository size is not updated in core and user interface even if repository is refreshed. (13449381)
- Oracle VM Server boot over multipath SAN fails to initialize DM MP devices. (13341598)
- VM start is pending. (13044663)
- API for CPU utilization returning negative values. (12999197)
- Resizing a physical disk/LUN does not resize the file system. (12962538)
- Oracle VM Server fails to boot from multipath SAN disks. (12682785)
- Unable to upgrade from Oracle VM Server Release 3.0.3 to Oracle VM Server Release 3.1.1 on an HP ProLiant BL680c G5 Server. (14690247)

4.8 Bug Fixes in Oracle VM 3.0.3

The following notable bugs are fixed in Oracle VM Release 3.0.3:

- Oracle VM Manager upgrade improvements significantly reduces upgrade time.
- IP addresses entered in Oracle VM Manager are always validated to ensure correct formatting. An error message is displayed if the IP address is not properly formatted.
- The Linux kernel device manager (udev) has been improved to increase performance. The most significant improvement is that the time udev takes to run after booting the server has been shortened from 2-3 minutes to just seconds, eliminating system *'hangs'* and other problems in systems which are sensitive to start-up time.
- When the management network also fulfills the role of virtual machine network, a bridge for virtual machine network connectivity is created on Oracle VM Servers as they are added to the environment. As a result, virtual machines will continue to work properly when migrated to a new Oracle VM Server.
- DHCP is able to be used for VLAN Group interfaces. (13322814)
- Both Oracle VM Server and the Unbreakable Enterprise Kernel (UEK) have been patched to prevent the flood of kernel warning messages caused by illegal configuration of certain Broadcom NetXtreme II XGb ([bnx2x](#)) network controllers. If an illegal configuration is detected, only one warning message per controller card is displayed.

- Several network throughput issues with certain Broadcom NetXtreme II XGb ([bnx2x](#)) network controllers on Oracle VM Server have been resolved: default TPA settings have no adverse effect on network throughput, and network between virtual machines and NFS storage no longer hangs with [bnx2x](#) controllers.
- When using the untagged VLAN segment, the user must configure IP address information on the NIC port, not on the VLAN interface. This eliminates duplicate configurations and any associated risks of misconfiguration.
- A late locking scheme has been implemented for networks on virtual machine clones: the virtual NIC connection in the virtual machine is only locked at the end of the clone operation. As a result, locking issues with Ethernet networks no longer occur when multiple virtual machines are cloned in parallel from the same template.
- In Oracle VM Manager , the **Acknowledge All Events** button effectively clears **all** events, not just the items visible in the current list view.

Chapter 5 Supported Guest Operating Systems

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The guest virtual machines you create must be one of the supported configurations listed in this section. The supported guest operating systems differ virtual machines created in x86-based server pools, and SPARC-based server pools.

5.1 Oracle VM Server for x86 Supported Guest Operating Systems

On Oracle VM Server for x86, guest virtual machines based on Linux and Solaris can be either Hardware Virtualized (HVM) or Hardware Virtualized with PV Drivers (PVHVM).

The following table lists support for virtual machines with an HVM domain type and a Linux operating system. Refer to the notes that follow the table for additional support information.

Table 5.1 HVM-Supported Linux Guest Operating Systems

Guest Operating System	HVM 32-bit	HVM 64-bit
Oracle Linux Release 7.x	N/A	Yes
Oracle Linux Release 6.x	Yes	Yes
Oracle Linux Release 5.x	Yes	Yes
Oracle Linux Release 4.x	Yes	Yes
Red Hat Enterprise Linux 7.x	N/A	Yes
Red Hat Enterprise Linux 6.x	Yes	Yes
Red Hat Enterprise Linux 5.x	Yes	Yes
Red Hat Enterprise Linux 4.x	Yes	Yes
CentOS 6.x	Yes	Yes
CentOS 5.x	Yes	Yes
CentOS 4.x	Yes	Yes
SUSE Linux Enterprise Server 11.x	No	Yes



Note

Additional support information for HVM-supported Linux guest operating systems is as follows:

- You can create HVM guest virtual machines for Oracle Linux, Red Hat Enterprise Linux, and CentOS. However, the Xen PV drivers are included by default with the kernels. Creating PVHVM guest virtual machines is recommended for hardware virtualization to improve performance.

- The minimum required kernel version for SUSE Linux Enterprise Server (SLES) 11 is [3.0.31-0.9](#).

The following table lists support for virtual machines with a PVHVM domain type and a Linux operating system. Refer to the notes that follow the table for additional support information.

Table 5.2 PVHVM-Supported Linux Guest Operating Systems

Guest Operating System	PVHVM 32-bit	PVHVM 64-bit
Oracle Linux Release 7.x	N/A	Yes
Oracle Linux Release 6.x	Yes	Yes
Oracle Linux Release 5.x	Yes	Yes
Oracle Linux Release 4.x	Yes	Yes
Red Hat Enterprise Linux 7.x	N/A	Yes
Red Hat Enterprise Linux 6.x	Yes	Yes
Red Hat Enterprise Linux 5.x	Yes	Yes
Red Hat Enterprise Linux 4.x	Yes	Yes
CentOS 6.x	Yes	Yes
CentOS 5.x	Yes	Yes
CentOS 4.x	Yes	Yes
SUSE Linux Enterprise Server 11.x	No	Yes



Note

Additional support information for PVHVM-supported Linux guest operating systems is as follows:

- Oracle Linux, Red Hat Enterprise Linux, and CentOS 5.x include the Xen PV drivers in the [kernel-xen](#) variant of the kernel. Oracle Linux 5.x also includes the PV drivers in [kernel-uek](#), the Unbreakable Enterprise Kernel (UEK). Creating PVHVM guest virtual machines is recommended for hardware virtualization with these kernels.
- Oracle Linux, Red Hat Enterprise Linux, and CentOS 4.x require the [kernel-xenU](#) variant of the kernel to use the PV drivers mode.
- The minimum required kernel version for SUSE Linux Enterprise Server (SLES) 11 is [3.0.31-0.9](#).
- To start a PVHVM guest on SLES 11, you must perform the following steps:
 1. Install the operating system and upgrade to the [3.0.31-0.9](#) kernel version.
 2. Shutdown the virtual machine.
 3. In Oracle VM Manager, set the domain type for the virtual machine to [Xen PVM](#).
 4. Restart the virtual machine.

The following table lists support for virtual machines with either an HVM or a PVHVM domain type and a Solaris operating system. Refer to the notes that follow the table for additional support information.

Table 5.3 HVM and PVHVM-Supported Solaris Guest Operating Systems

Guest Operating System	PVHVM 32-bit	HVM 32-bit	PVHVM 64-bit	HVM 64-bit
Oracle Solaris 11	N/A	N/A	Yes	N/A
Oracle Solaris 10	Yes	N/A	Yes	N/A

**Note**

Additional support information for HVM and PVHVM-supported Solaris guest operating systems is as follows:

- Oracle Solaris support begins with Solaris 10 1/13 (update 11). The Solaris 10 or Solaris 11 OS runs as a hardware virtual machine (HVM), which requires HVM support (Intel VT or AMD-V) on the underlying hardware platform. By default, Solaris 10 or Solaris 11 OS has the required PV drivers installed as part of the OS. Oracle Solaris 10 supports x86 32-bit and 64-bit architecture. 32-bit or 64-bit mode is selected at OS boot time by examining the hypervisor and the underlying hardware. Oracle Solaris 11 supports x86 64-bit architecture only.

For details about Oracle software certification, refer to My Oracle Support Document 464754.1, titled *Certified Software on Oracle VM* at <https://support.oracle.com/oip/faces/secure/km/DocumentDisplay.jspx?id=464754.1>.

Also visit the Oracle VM resource page at <http://www.oracle.com/us/technologies/virtualization/oraclevm/resources/index.html> to learn about the support plans for available for Oracle VM, Oracle Linux and Oracle Solaris.

Table 5.4 CPU Paravirtualized Supported Guest Operating Systems

Guest Operating System	Paravirtualized 32-bit	Paravirtualized 64-bit
Oracle Linux Release 7.x	No	No
Oracle Linux Release 6.x	Yes	Yes
Oracle Linux Release 5.x	Yes	Yes
Oracle Linux Release 4.x	Yes	Yes
Red Hat Enterprise Linux 7.x	No	No
Red Hat Enterprise Linux 6.x	Yes	Yes
Red Hat Enterprise Linux 5.x	Yes	Yes
Red Hat Enterprise Linux 4.x	Yes	Yes
CentOS 6.x	Yes	Yes
CentOS 5.x	Yes	Yes
CentOS 4.x	Yes	Yes
SUSE Linux Enterprise Server 11.x	No	Yes

Table 5.5 Microsoft Windows Supported Guest Operating Systems

Guest Operating Systems	64-bit	32-bit
Microsoft Windows Server 2012 R2	Yes	N/A
Microsoft Windows Server 2012	Yes	N/A
Microsoft Windows Server 2008 R2 SP1	Yes	N/A

Guest Operating Systems	64-bit	32-bit
Microsoft Windows Server 2008 SP2	Yes	Yes
Microsoft Windows Server 2003 R2 SP2	Yes	Yes
Microsoft Windows 10	Yes	Yes
Microsoft Windows 8.1	Yes	Yes
Microsoft Windows 8	Yes	Yes
Microsoft Windows 7 SP1	Yes	Yes
Microsoft Windows Vista SP2	Yes	Yes



Note

For a list of Microsoft Windows guest operating systems that Oracle VM supports with the Oracle VM Paravirtual Drivers for Microsoft Windows, see [Oracle VM Paravirtual Drivers Installation Guide](#).

Table 5.6 Oracle VM Paravirtual Drivers for Microsoft Windows Supported Releases

Oracle VM Release	Oracle VM Paravirtual Drivers for Microsoft Windows Release 3.0.1	Oracle VM Paravirtual Drivers for Microsoft Windows Release 3.2.2	Oracle VM Paravirtual Drivers for Microsoft Windows Release 3.2.3	Oracle VM Paravirtual Drivers for Microsoft Windows Release 3.4.1
Oracle VM 3.0	Yes	No	No	No
Oracle VM 3.1	Yes	No	No	No
Oracle VM 3.2	Yes	Yes	Yes	Yes
Oracle VM 3.3	No	Yes	Yes	Yes
Oracle VM 3.4	No	Yes	Yes	Yes

5.2 Oracle VM Server for SPARC Supported Guest Operating Systems

Guest virtual machines in an Oracle VM Server for SPARC-based server pool must run at:

- Oracle Solaris 10 11/06 as a minimum.
- Oracle Solaris 10 1/13 or later as a recommended guest OS.

See *Creating and Starting a Guest Domain* in the *Oracle VM Server for SPARC 3.3 Administration Guide*:

http://docs.oracle.com/cd/E62357_01/html/E62358/creatingandstartingguestdomain.html

For detailed information about supported firmware and operating systems, see *System Firmware Versions and Oracle Solaris OS Versions*:

http://docs.oracle.com/cd/E62357_01/html/E62360/ldomsrequiredsoftwarepatches.html

For information about specific patches and additional information about support guest operating systems, see the *Oracle VM Server for SPARC 3.3 Release Notes*:

http://docs.oracle.com/cd/E62357_01/html/E62362/

Chapter 6 Configuration Limits for Release 3.4

Configuration limits for Oracle VM represent tested and recommended limits, and are fully supported by Oracle.

Table 6.1 Oracle VM Manager Maximums

Item	x86 Maximum	SPARC Maximum
Oracle VM Servers in a server pool (unclustered)	64	64
Oracle VM Servers in a server pool (clustered)	32	32
Number of servers	256 (16 servers * 16 server pools)	256 (16 servers * 16 server pools)
Number of server pools	16	16
Number of configured virtual machines	5120 (20 virtual machines * 256 servers)	5120 (20 virtual machines * 256 servers)
Number of running virtual machines	2,560 (10 virtual machines per server * 256 servers)	32768 (128 virtual machines per server * 256 servers) <ul style="list-style-type: none"> • Fujitsu M10-4S, this limitation is 65536 (256 virtual machines per server * 256 servers) • Oracle SPARC M-series servers, this limitation is 128 virtual machines per server * the number of physical domains (PDOMs). Each physical domain acts as its own server with its own set of logical domains.



Note

Some performance tuning is required in Oracle VM environments where you manage more than 80 instances of Oracle VM Server with a single instance of Oracle VM Manager. In these environments, you should increase JVM memory allocation to 8G and reduce the interval of statistics collection. See the following topics for more information:

- [Increasing the Memory Allocated to Oracle WebLogic Server](#) in the *Oracle VM Administration Guide*
- [Preferences](#) in the *Oracle VM Manager User's Guide*

Oracle Support can apply additional tuning configurations to optimize Oracle VM Manager performance, such as reducing the number of events that Oracle VM Manager processes. Contact Oracle Support for more information.

Table 6.2 Oracle VM Server Maximums

Item	x86 Maximum	SPARC Maximum
CPU's	288 (Tested) 384 (Designed)	Equivalent to the number of available CPU's.

Item	x86 Maximum	SPARC Maximum
		<ul style="list-style-type: none"> • Oracle SPARC M7-16 this is equal to 4096 • Oracle SPARC M6 this is equal to 3072. • Oracle SPARC M5 this is equal to 1536. • Oracle SPARC T5 this is equal to 1024. • Fujitsu M10 this is equal to 2048 (fully configured).
Virtual CPUs per host	4096	<p>8 per core on Oracle M-series and Oracle T-series</p> <ul style="list-style-type: none"> • Oracle SPARC M5 has 6 cores per socket. • Oracle SPARC M6 has 12 cores per socket. • Oracle SPARC T5 has 16 cores per socket. <p>2 per core on Fujitsu M10</p> <ul style="list-style-type: none"> • Fujitsu M10 has 16 cores per socket.
RAM	6 TB	<p>Equivalent to available RAM.</p> <ul style="list-style-type: none"> • 32 TB on a Fujitsu M10, Oracle SPARC M5 or Oracle SPARC M6. • 2 TB on an Oracle SPARC T7-4. • 8 TB on an Oracle SPARC M7-16. • 4 TB on a Oracle SPARC T5. <p>A small amount of RAM is required for the hypervisor.</p>
Concurrently Running Virtual Machines	1024 The maximum number of concurrently running virtual machines depends on the virtual machine configuration, hardware resources, and workloads the	128 per physical domain (PDOM) Oracle SPARC M5 or M6 each have a maximum of 512 logical domains (128 logical domains per physical domain * 4 physical domains). However, when

Item	x86 Maximum	SPARC Maximum
	virtual machines are running. For this reason, the practical limit for concurrently running virtual machines is 300.	following Oracle best practices that allocate full cores for guests, the maximum number of logical domains is 192 on Oracle SPARC M5 and 384 on Oracle SPARC M6.

Table 6.3 Virtual Machine Maximums

Item	x86 Maximum	SPARC Maximum
Virtual CPUs	<p>PVM: 256</p> <p>HVM: 128</p> <p>PVHVM: 128; or 32 if using Oracle VM Paravirtual Drivers for Microsoft Windows Release 3.2.3.</p>	<p>Equivalent to the number of available CPUs on the server.</p> <ul style="list-style-type: none"> • Oracle SPARC M7-16 available CPUs is equal to 4096. • Oracle SPARC M6 available CPUs is equal to 3072. • Fujitsu M10 (fully configured) available CPUs is equal to 2048. <p>These maximums do not account for CPUs allocated to any other domains, such as the control domain. The hypervisor can allocate subsets of the overall CPU, memory, and I/O resources of a server to any given logical domain.</p>
Virtual RAM on 32-bit guests	<p>PVM: 64 GB</p> <p>HVM: 64 GB</p> <p>PVHVM: 64 GB</p>	N/A
Virtual RAM on 64-bit guests	<p>PVM: 500,000 MB</p> <p>HVM: 1,000,000 MB</p> <p>Exceeding the 1 TB limit may work, but can result in slow boot times and the possibility that the virtual machine hangs at boot and soft lockups occur on the hosting Oracle VM Server.</p> <p>If your environment needs to support live migration for HVM guests, this value must not exceed 1 TB.</p> <p>PVHVM: 2,000,000 MB; or 256 GB if using Oracle VM Paravirtual</p>	<p>Equivalent to the amount of available RAM installed on the server.</p> <ul style="list-style-type: none"> • 32 TB on a Fujitsu M10, Oracle SPARC M5 or Oracle SPARC M6. • 2 TB on an Oracle SPARC T7-4. • 8 TB on an Oracle SPARC M7-16. <p>A small amount of RAM is required for the hypervisor.</p>

Item	x86 Maximum	SPARC Maximum
	Drivers for Microsoft Windows Release 3.2.3.	These maximums do not account for RAM that is allocated to any other domains, such as the control domain. The hypervisor can allocate subsets of the overall CPU, memory, and I/O resources of a server to a given logical domain.
Virtual NICs	PVM: 31 HVM: 8 PVHVM: 8 The limit to the number of virtual disks and virtual NICs is shared when using the Oracle VM Paravirtual Drivers for Microsoft Windows. Therefore, if you define 8 virtual NICs, only 32 virtual disks can be defined for the same virtual machine.	Depends on the total number of available LDC (logical domains channels). Total number of virtual NICs and virtual disks per domain for SPARC is no more than the total number of available LDC (logical domains channels) of the supported SPARC server. For more information, see Using Logical Domain Channels in the <i>Oracle VM Server for SPARC Administration Guide</i> .
Virtual disks	Limits provided here are imposed by the guest kernel and not the hypervisor. The maximums presented depend on the capabilities of the guest operating system. PVM: 104 HVM: 4 IDE (including CD-ROM), 7 SCSI PVHVM: 107; or 40 if using Oracle VM Paravirtual Drivers for Microsoft Windows Release 3.2.3. The limit to the number of virtual disks and virtual NICs is shared when using the Oracle VM Paravirtual Drivers for Microsoft Windows. Therefore, if you define 8 virtual NICs, only 32 virtual disks can be defined for the same virtual machine.	Depends on the total number of available LDC (logical domains channels). Total number of virtual NICs and virtual disks per domain for SPARC is no more than the total number of available LDC (logical domains channels) of the supported SPARC server. For more information, see Using Logical Domain Channels in the <i>Oracle VM Server for SPARC Administration Guide</i> .
Virtual disk size	OCFS2: 64 TB NFS: 10 TB	Equivalent to the size of available disks on the server. The Oracle Solaris limit is 2^{63} .

**Note**

Virtual machine maximums assume a single virtual machine using all available resources.

Table 6.4 Storage Maximums

Item	x86 Maximum	SPARC Maximum
LUNs in a storage array This limit should not be confused with multipath devices. Each identical LUN connected to a single multipath device is considered to be a separate LUN with regard to this limit. For example the following configurations are supported 1,000 LUNs with 2 paths each, 500 LUNs with 4 paths each, 250 LUNs with 8 paths each.	iSCSI: 1000 LUNs and 2000 Paths Fibre Channel (FC): 1000 LUNs and 4000 Paths	2 ³² targets.
OCFS2 volume size	64 TB	N/A
Files per OCFS2 volume	30,000	N/A

Table 6.5 Network Maximums

Item	x86 Maximum	SPARC Maximum
NICs/ports per network bond	256	255 per bond or aggregate.
Network bonds per Oracle VM Server	No limit	No limit
Number of VLANs	1024	1024
Number of MAC addresses	10240	10240

Chapter 7 Known Limitations and Workarounds

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Find information on known limitations and workaround procedures for Oracle VM.

The titles of known issues contain platform designations as follows:

- If an issue applies to Oracle VM Server for x86 only, the title includes *x86 Only*.
- If an issue applies to Oracle VM Server for SPARC only, the title includes *SPARC Only*.
- If an issue applies to both Oracle VM Server and Oracle VM Server for SPARC, the title does not include any platform designation.

7.1 Integration Between Oracle VM Server for SPARC and Oracle VM Manager

In addition to known issues that might apply for a given release of Oracle VM, limitations exist for managing Oracle VM Server for SPARC with Oracle VM Manager.

There are currently several features in Oracle VM Server for SPARC that cannot be represented in Oracle VM Manager. These features include the following:

- Physical I/O domains such as SR-IOV, direct I/O, and root domains.
- Certain network options such as Private VLAN (PVLAN), "vNICs on VNets" or multiple MAC addresses per virtual network device, and Quality of Service (QoS) configurations.

- Crypto accelerators assigned to guest domains. This is a feature on SPARC servers prior to the T4 series that required some administrative effort. With the T4 series and later, crypto accelerators are always available without any administrative effort required.
- Whole-core and max-cores constraints, although these can be configured by editing the configuration file named `/etc/ovs-agent/agent.ini` that is used by the Oracle VM Agent for SPARC on each Oracle VM Server.
- Multiple service domains, also known as 'shadow service domains', which are typically used to provide redundancy. Initial support for these has been implemented in the Oracle VM Agent for SPARC.

There are a number of limitations that exist in Oracle VM Manager for server pools that contain Oracle VM Server for SPARC servers. These limitations include the following:

- ISCSI or Fibre Channel storage cannot be used to store a repository or a server pool cluster file system. However, these disks can be used for direct virtual machine assignment. NFS storage should be used if you need to set up a server pool cluster file system. Either NFS, ZFS or a local disk may be used to configure a repository.
- Huge page support on SPARC systems is not controlled by Oracle VM. All the page sizes available on the underlying hardware are always available to the guest virtual machine.
- Virtual machine suspend and resume functionality is not available for virtual machines running in a SPARC-based server pool.
- Support for a secondary service domain, running alongside the primary service domain, has been added to the Oracle VM Agent. This feature allows you to restart the primary service domain without causing any interruption to network or disk I/O for any of your running virtual machines.

7.2 Cannot Connect to the Oracle VM Manager Web Interface with Microsoft Internet Explorer

In some cases, if you attempt to connect to the Oracle VM Manager Web Interface with Microsoft Internet Explorer version 10 or lower, the Oracle VM Manager Web Interface does not respond when you enter login credentials. No messages are written to the AdminServer.log file to indicate errors or provide debugging information.

Workaround: Do one of the following:

- Reset Internet Explorer settings.
- Use Internet Explorer version 11 or a different browser, such as Mozilla Firefox, to connect to the Oracle VM Manager Web Interface.

Bug 20691432

7.3 The Virtual Machine Console Window in the Oracle VM Manager Web Interface Opens in the Background when using Microsoft Internet Explorer

The virtual machine VNC or serial console windows, that can be opened from within the Oracle VM Manager Web Interface, may initially open in the background and not have immediate focus when using Microsoft Internet Explorer. This means that after you click on the menu option to open a console dialog,

it initially appears as if nothing has happened as the main browser window remains in the foreground. However, the console window has opened but is in the background. This is the result of a bug in the underlying framework that is used for the development of the Oracle VM Manager Web Interface.

Workaround: Do one of the following:

- Check in the Windows task bar to determine whether another window has been opened in the background, or use the Alt-Tab key combination to cycle through open windows.
- Use a different browser, such as Mozilla Firefox or Chrome to connect to the Oracle VM Manager Web Interface.

Bug 21235816

7.4 Inconsistent Value for SPARC Domain Type

In the Oracle VM Manager Web Interface, you can select **OVM/SPARC** as a value for the [Domain Type](#) option used to create or edit a virtual machine. In the Oracle VM Manager Command Line Interface, and in the Oracle VM Web Services API, the value for the [DomainType](#) option can be set as **LDOMS_PVM**. These two values should be understood to be equivalent and refer to the hypervisor that is available on an Oracle VM Server for SPARC.

You are unable to use these values interchangeably and must use the correct value for the interface that you are using to configure the virtual machine. Check the appropriate documentation if you are unsure of the values that can be set for this option.

Workaround: There is no workaround for this issue.

Bug 20786024

7.5 Integer Only Values for the statValue Option

In the Oracle VM Manager Command Line Interface, you must use only integers to specify values for the [statValue](#) option when using the [equalityType](#) option for the [getStatListByQuery](#) command. Floats and decimals are not supported values for the [statValue](#) option.

Workaround: There is no workaround for this issue.

Bug 21046910

7.6 Aborting a Server Discovery Operation Results in Server Listed with an Unknown Operational State

Aborting a server discovery operation within Oracle VM Manager can result in the server being listed within the Oracle VM Manager Web Interface with an unknown operational state. Equally, the server object may appear as locked within the Oracle VM Manager Web Interface. This is because events triggered by the discovery operation may cause the state of the Oracle VM Manager Web Interface to fall out-of-sync with the actual state of the environment.

Workaround: To correct the operational state returned by Oracle VM Manager, rediscover any Oracle VM Servers that are affected. If you wish to remove these servers, delete them after you have performed the discovery operation.

Bug 21495833, 21495187

7.7 Automatic Discovery Operations can Conflict with Server Configuration Operations

In certain rare cases, an automatic server rediscovery is triggered by an error condition at the same time that a server configuration operation is taking place. In this situation, it is possible that this conflict can result in configuration information specific to the Oracle VM Server falling out-of-sync with the information reflected by Oracle VM Manager.

Workaround: To correct the information returned by Oracle VM Manager, rediscover any Oracle VM Servers that are affected.

Bug 21341236

7.8 Solaris 11 x86 Virtual Machine Disk Type Can Cause Kernel Panic on Boot

On Oracle VM, Solaris 11 x86 virtual machines are all installed and run with Xen Virtual Disk (XVD) disks by default. Exporting a Solaris 11 x86 virtual machine as a virtual appliance (OVA), and then importing it to a virtualization platform that supports a different disk type or disk controller, changes the path to the boot disk for the virtual machine. As a result, a kernel panic occurs for the Solaris 11 x86 virtual machine because it cannot locate the boot disk.

Workaround: Use the Solaris 11 x86 live installation ISO to boot the Solaris virtual machine. When the live installation GUI displays, open a terminal window and change to the root user. Run `zpool import -f rpool` and then run `shutdown`. After the virtual machine shuts down, remove the live installation ISO and boot from the disk.

Bug 21253581

7.9 Solaris 10 x86 Virtual Machine Installation Fails To Boot

On Oracle VM, virtual machines that are installed with Solaris 10 directly from the installation ISO may fail to boot immediately after installation and can return the error: 'Bad PBR Sig'.

This bug is related to the way in which virtual disks are referenced in the virtual machine configuration file, where they are configured as Xen Virtual Disk (XVD) disks by default. For Solaris to recognize this disk type, a patch needs to be applied to the Solaris installer to recognize the new disk type and to allow it to write to the boot block of the disk. This patch can be applied for network installs, but is not applied to the installation ISO, therefore additional steps must be taken when performing an installation from the ISO.

Workaround: The workaround provided here has been tested for Solaris 10u11. If you require that you complete an installation of Solaris 10u11 from ISO, it is possible to rectify the issue described here by performing the following steps:

- Reboot the virtual machine and use the ISO to perform the boot.
- During the boot process select the option to go to command line mode (option 6).
- At the command prompt, run `installgrub` to manually install the grub loader to the boot partition, as follows:

```
/a/sbin/installgrub -m /a/boot/grub/stage1 /a/boot/grub/stage2 /dev/rdisk/c1t0d0s0
```

Substitute `c1t0d0s0` with your device as appropriate.

- Reboot the virtual machine and the installation completes.

Solaris 11 is unaffected by this issue.

Bug 21775043

7.10 Oracle Linux 7 Virtual Machines Imported from a VirtualBox Virtual Appliance Do Not Start on Oracle VM

Virtual machines running Oracle Linux 7 exported from Oracle VirtualBox as a virtual appliance and then imported into Oracle VM may not boot correctly and may exit to an emergency shell. This is caused by a missing xen-blkfront driver in the initramfs image. Typically, output during boot, for affected systems, appears as follows:

```
[ OK ] Reached target Basic System.
dracut-initqueue[227]: Warning: Counld not boot.
dracut-initqueue[227]: Warning: /dev/mapper/ol-root does not exist
dracut-initqueue[227]: Warning: /dev/ol/root does not exist
dracut-initqueue[227]: Warning: /dev/ol/swap does not exist
    Starting Dracut Emergency Shell ...
Warning: /dev/mapper/ol-root does not exist
Warning: /dev/ol/root does not exist
Warning: /dev/ol/swap does not exist
```

Workaround: There are two workarounds to this problem. The first involves adding the missing drivers prior to exporting the Oracle Linux 7 virtual machine from Oracle VirtualBox. To do this, run the following command as root before you perform the export:

```
# dracut --add-drivers "xen-blkfront xen-netfront" --force
```

If you are unable to perform this step prior to the export, you can temporarily boot the virtual machine as an HVM and add the following boot option in GRUB prior to boot:

```
xen_emul_unplug=never
```

Once the virtual machine has booted, you can add the missing drivers by running the following command as root:

```
# dracut --add-drivers "xen-blkfront xen-netfront" --force
```

Reboot the virtual machine once the drivers have been added to the initramfs.

Bug 21244825

7.11 (x86 Only) IOStat Stays at 100% Util for Oracle Linux Virtual Machines After a Storage Migration

When a virtual machine running a kernel prior to UEK 3.8.13-68.2.1 is migrated from a local repository using the 'live migrate with storage' option, and all IO has been terminated, the IOStat on the virtual machine remains stuck at 100% Util.

This is related to a kernel bug where a call to the Xen blkfront driver caused the IO statistics to not be properly refreshed after a migration was completed, causing the accounting to fall out of sync with actual IO activity.

Workaround: This bug is resolved in UEK 3.8.13-68.2.1 and greater. To avoid this issue, upgrade the kernel used by your virtual machine.

Bug 21614184

7.12 Serial Console Does Not Respond for Oracle Linux 7 HVM Virtual Machines

The serial console does not respond, or provide any output, for virtual machines based on Oracle Linux 7 that are of domain type HVM or PVHVM.

Workaround: Configure the GRUB bootloader for the virtual machine as follows:

1. Add the following lines to the `/etc/default/grub` file:

```
GRUB_CMDLINE_LINUX=" console=ttyS0 console=tty0 crashkernel=auto \  
rd.lvm.lv=ol/root rd.lvm.lv=ol/swap rhgb quiet "  
GRUB_TERMINAL="serial console"  
GRUB_SERIAL_COMMAND="serial --unit=0"
```

2. Run the following command to update the `grub.cfg` file:

```
grub2-mkconfig -o /boot/grub2/grub.cfg
```

3. Restart the virtual machine.

Note that the preceding lines provide suggested configuration. You should consult the GNU GRUB manual for descriptions of each line and additional configuration options to suit your business needs. The GNU GRUB manual is available from the following directory on the virtual machine: [usr/share/doc/](#). Additionally, you should refer to the *About the GRUB2 Boot Loader* section of the Oracle Linux Administrator's Guide for more information.

**Tip**

Use the following keys to navigate the boot menu: **v** for down-arrow and **^** for up-arrow.

Bug 21229730

7.13 Error When Attaching CD-ROM Drives to Running HVM Virtual Machines

If you attempt to attach a CD-ROM drive to an available slot on a running virtual machine of domain type HVM, an error occurs and it is no longer possible to use the specified slot. For example, after you attempt to attach a CD-ROM drive to slot 2, you then attempt to attach a virtual disk to slot 2. In both cases an error occurs and slot 2 becomes unusable.

This issue occurs because running HVM virtual machines do not support the function to attach CD-ROM drives.

Workaround: Stop the virtual machine and then attach the CD-ROM drive.

Bug 21300944

7.14 Deleting Bond Ports for VLANIF Interfaces Deletes the VLANIF

Deleting a bond port that is in use by a VLANIF interface configuration also deletes the VLANIF interface.

(SPARC Only) NFSv4 Delegation Interferes with Cluster Heartbeat,
Using NFSv3 Results in RPC Error PROGRAM/VERSION MISMATCH

Workaround: There is no workaround for this issue.

Bug 21217364

7.15 (SPARC Only) NFSv4 Delegation Interferes with Cluster Heartbeat, Using NFSv3 Results in RPC Error PROGRAM/VERSION MISMATCH

Server pool clustering on SPARC based server pools can cause servers to automatically fence due to NFSv4 write delegation revocation timeouts which exceed the timeout value for the cluster.

It is not possible to use NFSv3 as this results in an RPC error reporting a "PROGRAM/VERSION MISMATCH" and can cause the cluster database to hang due to the NFSv3 locking mechanism. This is expected behavior.

Workaround: There is no workaround for this issue. Only NFSv4 is supported for SPARC clustering, and you must disable delegation for this to work.

Bugs 18997487, 20443098, 21317571

7.16 Cannot Import OVF Files into Oracle VirtualBox

You cannot successfully import a virtual appliance into Oracle VirtualBox if you exported that virtual appliance from Oracle VM as an extracted OVF that includes three separate files, a `package.ovf` file, a `package.mf` file, and a `disk.vmdk` file.

Workaround: Delete the `package.mf` file before you import the virtual appliance into Oracle VirtualBox. Alternatively, export the virtual appliance from Oracle VM as an OVA file.

Bug 21261077

7.17 Oracle VM Manager Cannot Receive Messages from SPARC Virtual Machines

After sending messages to a virtual machine running on Oracle VM Server for SPARC to configure network settings, Oracle VM Manager does not receive messages that indicate that the network was configured successfully.

Workaround: There is no workaround for this issue.

Bug 21062991

7.18 Cannot Boot Oracle VM Server Installed on an HP DL380 Gen9 Server in UEFI mode

In some cases, after you install Oracle VM Server on an HP DL380 Gen9 server in UEFI mode, you cannot successfully boot Oracle VM Server. This is the result of an issue with HP Smart Array firmware versions lower than 2.52.

Workaround: Update the HP Smart Array firmware to version 2.52 or higher.

Bug 21466879

7.19 (x86 Only) Cannot Boot Oracle VM Server with Broadcom 57840S CNA Card After PXE Install

If you perform a network installation of Oracle VM Server on an x86 system using the Broadcom 57840S CNA Card, you are unable to boot using FCoE. This issue is the result of a bug in the anaconda installer, where the installer is unable to see all of the disks when the system is booted using PXE.

Workaround: Do not use PXE boot to install systems that make use of this hardware.

Bug 20830496

7.20 Changing to Dynamic Mode IP Address Assignment Does Not Rollback if the Server is Unable to Obtain an IP Address

If you choose to change the IP address assignment mode to 'Dynamic' for any Oracle VM Server network interface or port within Oracle VM Manager, the operation that is triggered is a multi-step operation. First, the network configuration is changed on the server and within the Oracle VM Manager database. Then the server attempts to obtain an IP address from the DHCP server. If this second operation fails, the server returns an error but the Oracle VM Manager is unable to rollback the initial operation. The result is that the server remains configured for DHCP but the port does not have an IP address assigned.

If the port is used for the Management Network, it is possible that the server is no longer accessible to the Oracle VM Manager and you must correct the networking manually on the server. This may require you to reissue a DHCP request by running the `dhclient` command on the command line of the server, or it may require that you reconfigure the network interface with a static IP address and network mask. You may do this temporarily using the `ip addr` command on the command line. Once your server has an IP address within the management network range, you must rediscover the server.

Workaround: There is no workaround for this issue. You must ensure that your infrastructure is fully functional and that servers are able to obtain IP addresses from the DHCP server if you choose to use Dynamic Mode for IP address assignment for a server. Alternately, use Static IP addressing.

Bug 21370280

7.21 Drag and Drop from Blank Space of Object

It is not possible to drag and drop one or more virtual machines or Oracle VM Servers if you select the text area of the object or the expansion arrow next to the object.

Workaround: Select an area of blank space in the object to drag and drop that object.

Bug 21687716

7.22 Error When Using the Administrator Tool in Parallel

If two or more users connect to the same instance of Oracle VM Manager and simultaneously attempt to create users with the Oracle VM Manager Administrator Tool (`ovm_admin`), an error occurs and the following message is written to `AdminServer.log`:

```
Problem invoking WLST - Traceback (innermost last): File
"/u01/app/oracle/ovm-manager-3/ovm_wlst/jython/ovm/admin/createuser.py"
```

Workaround: Ensure that only one user at a time connects to Oracle VM Manager to use the Oracle VM Manager Administrator Tool (`ovm_admin`).

Bug 21679271

7.23 Oracle VM Manager Command Line Interface TCP Port Conflicts With Port Reserved for NDMP

The Oracle VM Manager Command Line Interface uses TCP port 10000 by default. This port is usually reserved for the Network Data Management Protocol (NDMP).

Workaround: Change the default port for the Oracle VM Manager Command Line Interface if you require TCP port 10000 for other applications that use NDMP, see [SSH Port](#) in the *Oracle VM Manager Command Line Interface User's Guide*.

Bug 21960034

7.24 When A Virtual Machine Using A Shared Virtual Disk Is Moved To Another Repository, The Shared Virtual Disk Is Cloned

When a virtual machine that is using a shared virtual disk is moved to another repository, the shared virtual disk is cloned during the move process to allow the virtual machine to continue to use the resources on the shared virtual disk. This may not be the behavior that you expect when you move a virtual machine and could result in duplicated data resources that could eventually become unsynchronized and difficult to reconcile.

This design decision allows virtual machines to be restarted after a move with minimum impact as all used resources continue to be available. However, the behavior is not intuitive and may be modified in subsequent releases.

Workaround: Be aware of the existing behavior and detach any shared disks before moving the virtual machine. If the virtual machine needs to make use of resources on the shared disk, detach the shared disk from all virtual machines and move it separately before reconfiguring your virtual machine to use it again. Make sure that all virtual machines that require access to the same shared disk are located in the same repository.

Bug 21316001

7.25 Unable to Remove a Storage Array if a File System Exists on a LUN

In the case where a repository is hosted on a LUN on a storage array and ownership of the repository is released, a rule violation is reported if you attempt to delete the storage array. This issue only affects storage arrays. File servers are unaffected.

Workaround: To resolve this issue you must completely unconfigure the elements of the storage array before attempting to remove it. Remove ownership of any repositories hosted on the storage array, remove the storage server from any access groups and finally delete the storage array.

Bug 22313650

7.26 Cluster Failure After An Offline Server is Removed From the Cluster While Another Cluster Member is Offline

If more than one Oracle VM Server within a clustered server pool is offline at the same time, and one of those servers is removed from the server pool, when the other offline servers come back online, the cluster

remains in a failed state. This is because the cluster configuration falls out of sync across the members of the cluster.

Whenever a server is added or removed from a cluster, Oracle VM Manager triggers an operation on each Oracle VM Server in the cluster to update the cluster configuration information. However, if any servers are offline at this time, they are unable to receive the updated configuration resulting in a configuration mismatch between the cluster configuration on the server and the actual configuration for the rest of the cluster. As a result, the server is no longer able to participate in the cluster.

On an x86 platform, this situation is simply represented within Oracle VM Manager and can be easily resolved from within Oracle VM Manager. On a SPARC platform, this can cause a server to repeatedly reboot when it comes online again due to a cluster panic.

Workaround (SPARC): In the case where a SPARC server is rebooting continuously, the problem is caused by the server attempting to rejoin the cluster even though it is no longer a member of the cluster. As a result, the server can panic repeatedly with a message similar to the following:

```
panic[cpu5]/thread=2a102a13c60:  
**** dlm FENCING this system by PANICing
```

If this issue occurs and a server is repeatedly panicking then you can prevent the server from panicking again by stopping the ovs-agent service and deconfiguring the cluster. To do so, connect to the server as root and run the following commands:

```
# svcadm disable -s ovs-agent  
# dlmccconf -S
```

If you are unable to run these commands because the server is panicking too quickly, then boot the server in single-user mode:

```
# boot -s
```

Disable the ovs-agent service:

```
# svcadm disable ovs-agent
```

Reboot the server. The server stops panicking while the ovs-agent service is disabled. If you want to re-enable the ovs-agent service, then you must resolve the cluster configuration issue first.

Once you have resolved the cluster configuration issue, you can acknowledge the server cluster failure event within Oracle VM Manager to resume normal operations.

Workaround (x86): To restore the environment to normal operation, you must first acknowledge the server cluster failure event within Oracle VM Manager. Remove any servers from the server pool that were offline when you made the configuration change, and then add them back to the server pool, so that the cluster configuration information can be properly refreshed for that server.

Bug 22304185, 18776654

7.27 LSI Logic / Symbios Logic MegaRAID SAS 1078 is not supported on Oracle VM Server

Oracle VM Server may not be able to detect disks on systems using the Dell PowerEdge Expandable RAID Controller 5 which uses LSI Logic/Symbios Logic MegaRAID SAS 1078. This is due to the unavailability of compatible driver firmware to enable device support within UEK4 from the hardware manufacturer. You may not be able to successfully upgrade servers using this hardware to Oracle VM Server 3.4.1 or above.

There are no workarounds for this issue. You must upgrade your hardware.

Bug 21843131, 21223382

7.28 (SPARC Only) Hot-added CD-ROM Device is Detected As Hard Disk

If you hot add a virtual CD-ROM device to a virtual machine running on Oracle VM Server for SPARC, the CD-ROM device is not detected as a removable device and is not shown when you run the `rmformat` or `format` commands. Instead, the device is listed as a virtual disk and is mapped this way as a device alias. This can be verified using the OpenBoot PROM to run the `show-disks` and `devalias` commands.

Workaround: There is no workaround to this issue. Remain aware that when hot-adding a virtual CD-ROM device, this is detected as a virtual disk instead and is mapped in Solaris as a `/dev/dsk/cldXsX` entry.

Bug 21278127

7.29 Fibre Channel LUNs Missing From Oracle VM Manager After Refresh

In some instances, after you refresh physical disks in the *Storage* tab in Oracle VM Manager Web Interface, fibre channel LUNs might not be included in the refresh. As a result, the LUNs appear to be missing even though they are online at the server.

Workaround: You should first examine all components of the infrastructure, such as switches, cables, and HBAs, to ensure that no defects or failures exist. If, after a subsequent refresh, the LUNs still appear to be missing, you can perform the following steps to resolve this issue:

1. List all attached SCSI devices.

```
# lsscsi
[0:0:0:0] disk HP LOGICAL VOLUME 1.34 /dev/sda
[0:0:0:1] disk HP LOGICAL VOLUME 1.34 /dev/sdb
[0:3:0:0] storage HP P440ar 1.34 -
[1:0:0:0] disk SUN ZFS Storage 7330 1.0 /dev/sdc
[1:0:0:1] disk SUN ZFS Storage 7330 1.0 /dev/sdd
[1:0:0:2] disk SUN ZFS Storage 7330 1.0 /dev/sde
[1:0:1:0] disk SUN ZFS Storage 7330 1.0 /dev/sdf
[1:0:1:1] disk SUN ZFS Storage 7330 1.0 /dev/sdg
[1:0:1:2] disk SUN ZFS Storage 7330 1.0 /dev/sdh
[1:0:2:1] disk NETAPP LUN 7330 /dev/sdo
[1:0:2:2] disk NETAPP LUN 7330 /dev/sdp
[1:0:2:3] disk NETAPP LUN 7330 /dev/sdq
```

2. Change to the SCSI address of the affected LUNs.

Based on the preceding example, you can enter `rport-1:0-2` to cover [1:0:2:1], [1:0:2:2], [1:0:2:3], and so on.

```
# cd /sys/class/fc_remote_ports/rport-1:0-2/
```

3. Check the timeout value of the `fast_io_fail_tmo` option.

```
# cat fast_io_fail_tmo
5
```

4. Increase the timeout value to just over the amount of time it takes for the LUN to return to the running state. The value that you set should be less than the value of the `dev_loss_tmo` option in the same directory. You should need to change only one of the affected LUNs.

```
# echo 15 > fast_io_fail_tmo
```

5. Add the command to `/etc/rc.local` to make the change permanent.

```
# cat /etc/rc.local
#!/bin/sh
#
# This script will be executed *after* all the other init scripts.
# You can put your own initialization stuff in here if you don't
# want to do the full Sys V style init stuff.

echo 15 > /sys/class/fc_remote_ports/rport-1:0-2/fast_io_fail_tmo
```

Bug 22322461

7.30 (SPARC Only) Size of Physical Disk in Oracle VM Manager Incorrect When LUN Size is Decreased on Storage Array

In the event that a LUN is resized directly on the storage array and that LUN is used by an Oracle VM Server for SPARC, the size of the LUN may not be correctly updated in Oracle VM Manager if the LUN size was decreased. This is due to the mechanism that the Oracle VM Agent for SPARC uses to obtain and report on the LUN size, which does not update once the disk is mapped on the server.

This problem does not occur when the LUN size is increased.

Workaround: The reported LUN size can be updated by rebooting the Oracle VM Server for SPARC where the LUN is mapped as a physical disk after you have resized the LUN. Once the server is back online, you must refresh the storage array where the affected LUN is located. The correct size is displayed for the LUN within Oracle VM Manager.

Bug 22087392

7.31 The Apparent Size of a Repository in Oracle VM Manager Web Interface Does Not Update Automatically

The apparent size of a repository filesystem is displayed in the Oracle VM Manager Web Interface on the Repositories tab in the Info perspective for a selected repository. This information is a statistical value that is updated periodically within Oracle VM Manager but which is not updated automatically within the table within the Oracle VM Manager Web Interface. The information displayed for this value matches the information available within Oracle VM Manager at the time that the page loads.

Workaround: To refresh the information displayed for the apparent size of a repository within the Oracle VM Manager Web Interface, you may click on an alternate tab and then return to the view of the repository to force the page to refresh.

Bug 22147488

7.32 Virtual Disks Do Not Display on Solaris 10 Guests

If you add virtual disks to a Solaris 10 virtual machine that is stopped, those virtual disks do not display when you list the virtual disks for the virtual machine.

Workaround: This is a Solaris 10 issue that you can resolve as follows:

1. Start the virtual machine.

2. Run the following command on the virtual machine: `devfsadm -v`

Bug 22460766

7.33 Oracle Linux 5 Virtual Machines Converted from Physical Hosts Do Not Boot

In some cases, virtual machines based on Oracle Linux 5 do not boot when started. This can occur if you used the P2V utility to convert a physical host based on Oracle Linux 5 to a virtual machine and then imported that virtual machine to Oracle VM Manager.

Unbreakable Enterprise Kernel version `kernel-uek-2.6.32-100.34.1` adds support for paravirtualized drivers in a HVM guest on Oracle VM. Starting with this kernel version, the default is to present only paravirtualized drivers when running in a hardware virtualized guest. To run `kernel-uek`, including the drivers, fully hardware virtualized, an additional kernel boot parameter `xen_emul_unplug=never` must be added to the boot parameters in `/etc/grub.conf`.

Workaround: Add the kernel boot parameter as follows:

```
kernel /vmlinuz-2.6.32-100.34.1.el5uek ro root=/dev/VolGroup00/LogVol100 xen_emul_unplug=never
```

Bug 22285006

7.34 SSL Exception in AdminServer Log File

In rare cases, the following SSL exception is written to `AdminServer.log` after attempting to perform an operation on a virtual machine:

```
<Error> <ovm.mgr.ras.WebSocketHandler>
<SSLException, writeNWBuf: java.nio.HeapByteBuffer[pos=0 lim=27 cap=16971] is
not large enough for SSLEngine.unwrapAndHandleResults, results: Status =
BUFFER_OVERFLOW HandshakeStatus = NOT_HANDSHAKING
bytesConsumed = 0 bytesProduced = 0
java.io.IOException: SSLException, writeNWBuf: java.nio.HeapByteBuffer[pos=0
lim=27 cap=16971] is not large enough for SSLEngine.unwrapAndHandleResults,
results: Status = BUFFER_OVERFLOW HandshakeStatus = NOT_HANDSHAKING
bytesConsumed = 0 bytesProduced = 0
```

Workaround: This exception is due to a known issue with Oracle WebLogic Server. You can ignore the exception. Subsequent attempts to edit or perform an operation on the virtual machine should be successful.

Bug 22451280

7.35 Oracle VM Servers in a Server Pool Must Be at the Same Minor Version

Each instance of Oracle VM Server in a server pool must be at the same minor version. In other words, all servers in a server pool must be at Release 3.2.x, or Release 3.3.x, or Release 3.4.x. For example, a server pool cannot contain one or more instances of Oracle VM Server Release 3.3.1 and one or more instances of Oracle VM Server Release 3.2.10.

During an upgrade, each instance of Oracle VM Server in the server pool is upgraded separately, which results in a mixed version server pool until the upgrade process is complete. For this reason, mixed version server pools are supported only during an upgrade of Oracle VM Server.

Workaround: There is no workaround for this issue.

Bug 22516403

7.36 (SPARC Only) Cancelling a Virtual Machine Migration Not Possible from Oracle VM Manager

If you start a virtual machine migration from one Oracle VM Server for SPARC to another, it is not possible to cancel the migration from Oracle VM Manager.

Workaround: Run the following command on the source server to manually cancel the virtual machine migration:

```
# ldm cancel-operation migration VM_UUID
```

Where *VM_UUID* is the UUID of the virtual machine.

Bug 22500264

7.37 Oracle VM Manager Displays Incorrect Details for ZFS Storage Appliances After Cluster Failover

In environments where two or more ZFS storage appliances are in an active/active cluster configuration, and a cluster failover occurs, it is possible for Oracle VM Manager to display incorrect IP addresses and file system information.

Workaround: Stop all running virtual machines, unrepresent the repositories, and then delete the NFS servers from Oracle VM Manager.

Bug 21466858

7.38 Oracle VM Server Upgrade Not Possible with Netapp Storage Plugin

It is not possible to upgrade Oracle VM Server from Release 3.3.x to Release 3.4.1 if the Netapp Storage Plugin, `netapp-osc-linux`, is installed.

Workaround: Remove the `netapp-osc-linux` plugin before you upgrade Oracle VM Server to Release 3.4.1. When the upgrade successfully completes, reinstall the `netapp-osc-linux` plugin.

Bug 21052337

7.39 Oracle VM Manager Web Interface Incorrectly Displays Oracle VM Server Upgrade Required

The **Update Required** column incorrectly indicates that an update is required for Oracle VM Server when you create a server update repository but do not enable that repository and then refresh the servers to which that server update repository applies. If you subsequently attempt to upgrade Oracle VM Server, the upgrade does not occur.



Note

The **Update Required** column is located in the **Servers** perspective in the management pane on the **Servers and VMs** tab.

Workaround: There is no workaround for this issue.

Bug 22374697

7.40 Oracle VM Virtual Machine Control CPU Pinning Does Not Take Effect on Oracle VM Server

If you configure CPU pinning for a running virtual machine with the `ovm_vmcontrol` command line script, the script returns a success message. The Oracle VM Web Services API and `vm.cfg` file for the virtual machine display the values that you set for the physical threads to which the virtual CPUs (vCPU) for the virtual machine are bound. However, the changes do not take effect on Oracle VM Server. As a result, the output for the `xm vcpu-list` command displays unchanged values.

Workaround: There is no workaround for this issue.

Bug 22155129

7.41 The Oracle VM Manager Silent Install Option Using A YAML Configuration File Is Deprecated

The function to install Oracle VM Manager silently using a predefined YAML formatted configuration file is intended only for internal use during testing at Oracle. The option to install using this facility is deprecated for customer use and is undocumented in this release.

Workaround: There is no workaround for this issue.

Bug 22478672

7.42 Aborting An Oracle VM Server Upgrade Initiated By The UpgradeServers.py Script May Result In Inconsistent Reporting on Upgrade Status

In the unlikely case that an Oracle VM Server is in the process of being upgraded using the UpgradeServers.py Script and the upgrade job is aborted from within Oracle VM Manager, the upgrade on the Oracle VM Server may complete but the UpgradeServers.py script may also report that the upgrade has failed. Equally, Oracle VM Manager may report an incorrect version or upgrade status for the Oracle VM Server.

Workaround: Reboot the affected server and then disable maintenance mode on the server.

Bug 22488078

7.43 Kdump On Oracle VM Server Only Supports Dump Levels 0 and 1

The `makedumpfile` command, used to manually trigger a vmcore dump file is documented to support dump levels from 0 to 31 using the `-d` switch. Notably, the manual page states that it is possible to specify a value higher than 1 on an x86_64 machine running the Xen hypervisor. This is not the case for Oracle VM Server. Only the values 0 and 1 can be specified for this parameter, or a vmcore file is not generated.

Workaround: There is no workaround. Only use dump levels of 0 or 1 if using the `makedumpfile` command.

Bug 22329501

7.44 Network Receive Statistics For A Virtual Machine Are Invalid And Set To -1

DRS/DPM algorithms that monitor network load on a virtual machine do comparisons between the most recent network statistics and the previous network statistics to determine the deltas that can then be evaluated in terms of user-defined thresholds.

The network statistics are captured as unsigned integers. This means that they have a range of [0, 4294967295]. If the number of bytes received is greater than 4 GB the value of the integer overflows and begins from 0 again. In this situation, it is possible the start value for the statistic recorded by Oracle VM Manager is greater than the end statistic. Once this has occurred, Oracle VM Manager sets this statistic to -1 as it is no longer meaningful or valid.

If you have a DRS/DPM policy set to trigger on network load, the following error may appear in the log:

```
VM rx stats are not valid, the stats wrapped around.
```

In the event that an invalid network statistic is returned, the statistic is ignored by the DRS/DPM algorithm for that cycle. Normal behavior resumes on the next cycle. This bug has a very limited effect and is only noticeable on very loaded networks where the occasional log message may appear.

Workaround: There is no workaround required for this issue. It is expected behavior and the issue is resolved automatically by the environment.

Bug 22550810

7.45 CPU Affinity After Live Migration of Virtual Machine on Non-Uniform Memory Access (NUMA) Systems

After a live migration of a virtual machine between two servers with NUMA architecture, the CPU affinity is set to "any CPU". As a result, the migrated virtual machine uses memory across multiple nodes, which degrades performance of the virtual machine.

Workaround: Before performing the live migration of virtual machines, configure CPU pinning in the guest `vm.cfg` file. For example, to pin a virtual machine with 4 VCPUs to physical CPUs 4, 5, 6, and 7, add the following line to the `vm.cfg`:

```
cpu = "4-7"
```

Bug 22382809

7.46 Virtual Machines Based on Oracle Solaris 11 Do Not Boot After Storage Live Migration

If you perform a storage live migration of a virtual machine based on Oracle Solaris 11 that is lower than 11.3, the migration does not complete successfully and the virtual machine no longer boots.

Workaround: Upgrade the guest operating system to Oracle Solaris 11.3 or higher.

Bug 22085158

7.47 Changing Domain Type from Xen HVM to Xen HVM PV Drivers Causes Informational Messages in AdminServer.log

Changing the domain type of a virtual machine from **Xen HVM** to **Xen HVM PV Drivers** results in the following informational messages of type `vm.domain.mismatch` and `vm.os.mismatch` being written to `AdminServer.log`.

This issue occurs because Oracle VM Server does not distinguish between the **Xen HVM** and **Xen HVM PV Drivers** domain types. When the domain type of the virtual machine changes to **Xen HVM PV Drivers**, Oracle VM Server reports the domain type of the virtual machine as **Xen HVM** to Oracle VM Manager. As a result, Oracle VM Manager falsely detects an error and logs the informational messages.

Workaround: You can ignore the informational messages and change the domain type of the virtual machine to **Xen HVM PV Drivers**. The virtual machine successfully loads the PV drivers despite these messages.

Bug 21163194

7.48 Single-Stream TCP Throughput is Degraded for Guest Virtual Machines Running UEK Release 4

The single-stream TCP throughput in the TX subgroup is degraded for guest virtual machines running Oracle Unbreakable Enterprise Kernel (UEK) Release 4.

Workaround: This issue occurs because UEK Release 4 includes support for the TCP Small Queues (TSQ) mechanism. To resolve this issue, you can configure the guest virtual machine with the following command:

```
echo 1048576 > /proc/sys/net/ipv4/tcp_limit_output_bytes
```

Bug 22546060

7.49 Error Partitioning Caused by Disk Label or Format in UEFI Mode

If you attempt to install Oracle VM Server in UEFI mode on a virtual drive that is not GPT or only MBR, a partitioning error occurs in the Anaconda installation program.

Workaround: Do the following to work around this issue:

1. Select **OK** to return to the previous installer screen.
2. Enter **Alt+F2** to open a shell prompt.
3. Use the `parted` command to change the label of the disk. Alternatively, use the `dd` command to clean up the disk.
4. Return to the installation program and then select **Back** to return to the previous installer screen.
5. Ensure that storage is discovered and then continue the installation.

Bug 22503847

7.50 Kernel Panic when Booting Guest Virtual Machine with Oracle Solaris 11.2

When creating a virtual machine with a guest operating system of Oracle Solaris 11.2 on Oracle VM Server, a kernel panic occurs when the virtual machine boots.

Workaround: Upgrade the guest operating system to Oracle Solaris 11.3.

Bug 22457279

7.51 Oracle VM Manager Web Interface Goes to Blank Screen with Mozilla Firefox on a Linux System

When creating a new repository, the Oracle VM Manager Web Interface temporarily displays a blank screen and the following message is written to `AdminServer.log`:

```
<Error>
<oracle.adfinternal.controller.application.AdfcExceptionHandler> <ADFC-50018>
<ADFC: No exception handler was found for an application exception.
javax.faces.FacesException: Broken pipe
```

This issue occurs when using a version of Mozilla Firefox that is lower than Version 44.0 on a Linux system to access the Oracle VM Manager Web Interface. This issue does not affect the jobs in Oracle VM Manager to create a new repository.

Workaround: Upgrade to Mozilla Firefox Version 44.0.

Bug 22553553

7.52 HugePages Deprecated for PVM Guests as of Oracle VM Release 3.4.1

The HugePages feature is deprecated in Oracle VM Release 3.4.1. You should not enable HugePages when creating or editing virtual machines with a domain type of PVM in the Oracle VM Manager Web Interface or Oracle VM Manager Command Line Interface. This feature will be removed in a future release of Oracle VM.

If you have HugePages enabled for any PVM guests, Oracle recommends that you change the domain type for virtual machines from Paravirtualized (PVM) to Hardware virtualized, with paravirtualized drivers (PVHVM). If you cannot change the domain type for a virtual machine, you should disable the HugePages setting and then restart the virtual machine.

Workaround: There is no workaround for this issue.

Bug 22540900

7.53 HugePages Does Not Display as Selected in Oracle VM Manager Web Interface

The **Enable Huge Pages** option in the **Edit Virtual Machine** dialog box does not display as selected when virtual machines with a PVM domain type are running.

Workaround: There is no workaround for this issue. However, Oracle recommends that you do not enable HugePages for any PVM guests. See [Section 7.52, "HugePages Deprecated for PVM Guests as of Oracle VM Release 3.4.1"](#).

Bug 22746016

7.54 Kdump Service Hangs at Discovery of FCoE Device with Broadcom CNA on HP Servers

If you install Oracle VM Server in Fiber Channel over Ethernet (FCoE) LUNs over Broadcom Converged Network Adapters (CNA) on HP servers, the kdump service hangs when discovering FCoE LUNs.

Workaround: There is no workaround for this issue.

Bug 22508971

7.55 Kdump Service with UEK Release 4 Fails to Create Memory Dump on Cisco UCS B230 M2 Blade Server

The kdump service on Oracle VM Server with Oracle Unbreakable Enterprise Kernel (UEK) Release 4 does not produce a `vmcore` file when a system crash occurs if installed on a Cisco UCS B230 M2 blade server.

Workaround: There is no workaround for this issue.

Bug 22488522

7.56 Kdump Service No Longer Functions After Upgrading Oracle VM Server

If you have manually installed and configured the kdump service on Oracle VM Server Release 3.2.10 or Release 3.3.x, and you then upgrade Oracle VM Server to Release 3.4.x, the kdump service no longer functions. This issue occurs because the kdump service in Oracle VM Server Release 3.4.x uses GRUB2 for configuration. During the upgrade process, the kdump settings you manually define in the GRUB configuration are not transferred to the GRUB2 configuration.

Workaround: Configure the kdump service on Oracle VM Server after the upgrade successfully completes. For more information, see [Manually Configuring kdump for Oracle VM Server](#) in the *Oracle VM Administration Guide*.

Bug 22651351

7.57 Discovery of Oracle VM Server on FCoE LUN Fails Due to Interface Name

Oracle VM Manager cannot discover Oracle VM Server if the server is installed on an Fiber Channel over Ethernet (FCoE) LUN over a Broadcom Converged Network Adapter (CNA) and the interface name is appended with `-fcoe`; for example, `eth.1002-fcoe`.

Discovery fails with the following error message:

```
OVMAPI_6055E Discover target: server_name, Discover failed with error: For input string: "1002-fcoe"
```



Note

In addition, to avoid issues with interface names and discovery of Oracle VM Server, you should:

- Avoid including a period mark "." in the interface name. If you add the interface to a VLAN, the name of the interface then includes two period marks. For example, you name an interface as `MyName2.ab`. If you then add the interface to a VLAN, a second period mark is included in the name, such as `MyName2.2ab.5`.
- Create interface names that are less than 15 characters. If you plan to add the interface to a VLAN, you should allow at least two characters in the interface name for the VLAN ID.
- Ensure that the interface name of a VLAN follows the format of `InterfaceName.1234`, where `1234` is the VLAN ID that contains numeric characters only.

Workaround: Manually edit the name of the interface to remove the `*-fcoe` string. For example, change the name of the interface from `MyName-fcoe` to `MyName`.

Bug 22634846

7.58 DNS Round-Robin and Nested NFS Export Configurations Result in Errors for Oracle VM Server Storage Repositories

The following configurations result in errors with NFS repositories in an Oracle VM environment:

- If you configure your DNS so that a single hostname is assigned to multiple IP addresses, or a round-robin configuration, the storage repository is mounted repeatedly on the Oracle VM Server file system.
- If your NFS file system has other NFS file systems that reside inside the directory structure, or nested NFS exports, exporting the top level file directory from the NFS server results in an error where Oracle VM Server cannot access the storage repository. In this scenario, the **OVMRU_002063E No utility server** message is returned for certain jobs and written to `AdminServer.log`.

For more information about resolving errors with nested NFS exports, see *Doc ID 2109556.1* in the Oracle Support Knowledge Base.

Workaround: Do not use DNS round-robin configurations or nested NFS exports in an Oracle VM environment.

Bug 22234686

7.59 Do Not Discover Oracle VM Servers Earlier than Release 3.2.10

If you attempt to discover an instance of Oracle VM Server that is earlier than Release 3.2.10 with Oracle VM Manager Release 3.4, the following occurs:

- The discovery job fails with the following error message:

```
OVMAPI_4010E Attempt to send command: update_core_api_bindings to server:  
server_fqdn failed. OVMAPI_4004E Sync command failed on  
server: server_ip. Command: update_core_api_bindings, Server error:  
org.apache.xmlrpc.XmlRpcException: urlgrabber.grabber.URLGrabError:[Errno 14]  
problem making ssl connection
```

- Conflicts occur between the databases that Oracle VM Manager requires for maintaining synchronization between internal components. As a result, the Oracle VM Manager Web Interface can display inaccurate information about the Oracle VM environment.
- The instances of Oracle VM Server, earlier than Release 3.2.10, that you discover cannot be removed with either the Oracle VM Manager Web Interface or the Oracle VM Manager Command Line Interface.

Workaround: Do not use Oracle VM Manager Release 3.4 to discover or interact with any instances of Oracle VM Server earlier than Release 3.2.10.

Bug 22735203

7.60 (SPARC Only) Cannot Export Virtual Appliance with Physical Disk Access

If you create a virtual machine on an Oracle VM Server for SPARC with a physical disk access, it is not possible to export that virtual machine as a virtual appliance.

In this case, when you attempt to export the virtual machine as a virtual appliance with the Oracle VM Manager Command Line Interface, the following error message is displayed:

```
Server error: vbox-img didn't return expected value (0,)

  CMDERR:
    vbox-img: error: VD: error VERR_FILE_NOT_FOUND opening image file '/dev/mapper/<disk_Id>'
    vbox-img: error: Error while opening source image: File not found.
(VERR_FILE_NOT_FOUND)
```

Workaround: There is no workaround for this issue.

Bug 22745868

7.61 Virtual Machine Configurations Take the Maximum CPU and Memory Values from the OVF of a Virtual Appliance

If you export a virtual machine as a virtual appliance and include the maximum CPU value in the OVF, virtual machines that you create from the virtual appliance use the maximum CPU value as the number of processors currently in use. For example, you have a virtual machine with a current processors value of 30 and a maximum processors value of 128. You export that virtual machine as a virtual appliance and then create a new virtual machine from the virtual appliance. The resulting virtual machine has a current processors value of 128. If you display the virtual machine configuration, however, the values match those of the exported OVF.

This issue also affects the current amount of memory and maximum amount of memory for virtual machines.

Workaround: After creating a virtual machine from an exported virtual appliance, ensure the CPU and memory configurations are using the correct settings. Modify the virtual machine configuration if necessary.

Bug 22737820

7.62 Virtual Machine Console Becomes Unresponsive During Migration or After Restart

If you start, stop, restart, or migrate a virtual machine, you must close the virtual machine console and then re-open it from the Oracle VM Manager Web Interface. If the virtual machine console is open during the

migration of a virtual machine or when a virtual machine restarts, the console becomes unresponsive and no longer displays output for running processes.

Workaround: Close the virtual machine console and then re-open it from the Oracle VM Manager Web Interface.

Bug 22735310 and 22779973

7.63 (SPARC Only) MTU Resets to the Default of 1500 After Server Power Off

If you configure the MTU parameter of a network interface for an ethernet bridge and then power off the Oracle VM Server for SPARC, the MTU used by the bridge after the boot can be reset to the default value of 1500 instead of the configured value.

Workaround: When the interface used for the bridge is persistently plumbed in the primary domain, the bridge is created with the appropriate MTU parameter after the server power off and reboot. Use the `ipadm(1M)` command to persistently plumb a network interface, as in the following example:

```
# ipadm create-ip net0
```

Bug 22705349

7.64 (x86 Only) Ethernet Port and VLAN MTU Resets to the Default of 1500 After Server Restarts

If you set the MTU parameter on an ethernet port and the VLAN created from the ethernet interface, and then restart Oracle VM Server, the MTU parameter resets to the default value of 1500.

This issue occurs if the value of the `ONBOOT` parameter in the `ifcfg-interface_name` configuration file for the ethernet interface is contained within double quotation marks, for example, "no". When Oracle VM Manager creates the `ifcfg-interface_name` configuration file for the VLAN, the value of the `ONBOOT` parameter is `yes`. When the server reboots, the `ONBOOT` parameter for the ethernet interface does not change, and a discrepancy exists between the two `ifcfg-interface_name` configuration files. As a result, the MTU parameter resets to the default value of 1500.

Workaround: Ensure that the value of the `ONBOOT` parameter in the `ifcfg-interface_name` configuration file for the ethernet interface is not contained within double quotation marks, for example, `ONBOOT=no`.

Bug 22697133

7.65 Oracle VM Server Installer Fails When Modifying Swap Partitions

An exception occurs and the Oracle VM Server installer stops abruptly if you select **File System Options** while editing a swap partition from the **Partitioning Type** screen.

Workaround: Do one of the following from the **Review Partition Layout** screen:

- Select **Yes** to review and modify the partitioning layout. On the **Partitioning** screen, delete the swap and then create a new one.

- Select **No** to skip the partitioning layout check and proceed with the installation.

Bug 22807435

7.66 Kernel Startup is Slow after Upgrading to UEK4 on PVHVM Guests

If you upgrade the kernel on a PVHVM virtual machine to UEK4, the kernel init process takes several minutes to complete.

Workaround: Upgrade GRUB to the most recent version.

Bug 22761370

7.67 Cannot Enable High Availability (HA) for Virtual Machines with HugePages

If you attempt to enable HA for a running virtual machine that has HugePages enabled, the job to enable HA fails with the following error message:

```
OVMRU_005002E Operation not allowed- Virtual Machine: vm_name, is not STOPPED. It is RUNNING.
```

This error occurs if you attempt to enable HA in either the Oracle VM Manager Web Interface or the Oracle VM Manager Command Line Interface.

The preceding error message does not accurately describe the issue. The fact that the virtual machine is in the running state does not affect the ability to enable HA. The error results from the fact that HugePages is enabled for the virtual machine.

Workaround: Disable the HugePages setting and then restart the virtual machine. After the virtual machine starts, enable HA.

Bug 22753803

7.68 Kdump is Not Supported on FCoE SANs or NVMe Partitions

Kdump is not supported if you install Oracle VM Server on an Fiber Channel over Ethernet (FCoE) SAN or an NVMe partition.

Workaround: There is no workaround for this issue.

Bug 22816860 and 22863306

7.69 Virtual Machines Hang at Boot if Grant Reference Request Too Large

Virtual machines can hang during the boot sequence if the number of grant references exceeds 32,768.

Messages such as the following are written to `/var/log/messages`:

```
timestamp localhost kernel: xen_netfront: Initialising Xen virtual ethernet driver
timestamp localhost kernel: xen_netfront: can't alloc rx grant refs
timestamp localhost kernel: net eth7: only created 7 queues
```

As of Oracle VM Release 3.4.1, the addition of multi-queue support for Xen network and block drivers to increase I/O throughput requires an increased number of grant references and queues.



Note

Grant references relate to the Xen grant table mechanism. See the Xen documentation for more information.

Workaround: Decrease the value of the `xen_netback max_queues` option in the `/etc/modprobe.d/ovs.conf` file on Oracle VM Server. The default value is 8. You can decrease this value to 2, for example. After you save the changes to `ovs.conf`, you must restart Oracle VM Server for them to take effect.

```
# Limit Xen netback max queue to 8
options xen_netback max_queues=2
```

Bug 22831141 and 22817043

7.70 Cannot Edit Running Virtual Machines with HugePages and HA Enabled

It is not possible to edit a running virtual machine through the Oracle VM Manager Web Interface if that virtual machine has both HugePages and high availability (HA) enabled. The job to edit the virtual machine fails with the **OVMRU_005002E Operation not allowed** error message.

Workaround: There is no workaround for this issue.

Bug 22814818

7.71 Incorrect Storage Configuration Causes Oracle VM Manager Upgrade to Fail

Your storage environment must be configured so that Oracle VM can discover and access storage before you attempt to upgrade Oracle VM Manager. If the storage environment is not correctly configured, the upgrade fails. As a result, you must either restore the Oracle VM environment from a backup and then continue with the upgrade or perform a fresh installation of Oracle VM Release 3.4.

For example, if the IP address of an access host for a storage array is not configured, the Oracle VM Agent cannot connect to the storage plugin. In this case, error messages such as the following are written to `ovs-agent.log`:

```
[time_stamp] INFO (storageplugin:ID)
storage_plugin_discover(oracle.netapp.SCSIPlugin.StoragePlugin)
[time_stamp] DEBUG (OSCPlugin:ID) ENTER: discover()
[time_stamp] ERROR (OSCPlugin:ID) Failure to get the
targets: iscsiadm: connection to discovery address 192.0.2.0 failed
iscsiadm: connection to discovery address 192.0.2.0 failed
iscsiadm: connection to discovery address 192.0.2.0 failed
iscsiadm: connection to discovery address 192.0.2.0 failed
iscsiadm: connection to discovery address 192.0.2.0 failed
iscsiadm: connection to discovery address 192.0.2.0 failed
iscsiadm: connection login retries (reopen_max 5) exceeded
iscsiadm: Could not perform SendTargets discovery.
```


Workaround: Ensure that your storage environment is configured and that Oracle VM can discover and access storage. Check the Oracle VM log files for error messages related to storage. If any issues exist, resolve them before you attempt to upgrade Oracle VM.

Bug 22815554

7.72 Import URL Cannot Exceed Maximum Character Length

The maximum character length of the URL to import objects into Oracle VM Manager, such as virtual appliances, virtual disks, or ISO files, is 3,988. The maximum character length of the URL to import templates is 3,985.

If you attempt to import an object from a URL that exceeds the maximum character length, an error occurs and the import fails, as in the following example:

```
OVMAPI_D000E Cannot set description on object: my_virtual_appliance.ova.  
Its length: 4,012, exceeds the maximum size: 4,000.
```

Even though the error message indicates the maximum character length is 4,000, a prefix is automatically added to the URL during the import job. As a result, the effective character limit for the URL is 3,988 or 3,985.

Workaround: There is no workaround for this issue. Ensure that the origin URL for any object that you plan to import into Oracle VM Manager is not greater than the maximum character limit.

Bug 23073177

7.73 Oracle VM Manager Upgrade Fails if Import URLs Too Long in Database

When upgrading Oracle VM Manager to Release 3.4, the upgrade process fails and the following error messages are written to the upgrade log files. This issue occurs if the URLs for imported objects in the Oracle VM Manager database are 512 characters or greater.

```
Internal Exception: com.mysql.jdbc.MysqlDataTruncation: Data  
truncation: Data too long for column 'ORIGIN' at row 1
```

```
ovm.installer ERROR      Error upgrading core  
database, upgrade cannot continue!
```

Workaround: There is no workaround for this issue.



Note

This issue affects Oracle VM Manager Release 3.4.1 build 1350 and is fixed in build 1369. This issue also exists if you upgrade from build 1350 to build 1369.

Bug 23003986

7.74 Oracle VM Server NIC Fails to Get IP Address if Configured for DHCP

In some cases, when you configure a network interface for Oracle VM Server to retrieve IP addresses via DHCP, and then bring up that interface, it cannot retrieve an IP address and the following error occurs:

```
Determining IP information for interface_name...
```



```
failed; no link present. Check cable?
```

This issue can be caused when the time it takes the network interface to come up is greater than the time set for the `LINKDELAY` environment variable.

Workaround: Set the value of the `LINKDELAY` to a value of 10 or higher in the `/etc/sysconfig/network-scripts/ifcfg-eth*` file, as in the following example:

```
DEVICE=eth3
BOOTPROTO=dhcp
HWADDR=00:00:00:00:00:00
ONBOOT=yes
LINKDELAY=10
```

Bug 22514518

7.75 SR-IOV Is Not a Supported Feature

Oracle VM does not support Single Root I/O Virtualization (SR-IOV) except for where SR-IOV is used by Oracle Exalogic systems.

Workaround: There is no workaround for this issue.

Bug 21957308

7.76 Oracle VM Manager Upgrade Does Not Restore External Authentication Provider

The Oracle VM Manager upgrade process does not save and restore any configurations you create for external authentication providers. For example, if you configure Oracle VM Manager to authenticate users against an LDAP or Active Directory and then perform an upgrade, that configuration is not restored after the upgrade is complete.

Workaround: Complete the steps to enable LDAP or Active Directory authentication after you successfully upgrade Oracle VM Manager.

Bug 21314388

7.77 Limit of 3 Virtual Machine Console Windows with Microsoft Internet Explorer

Microsoft Internet Explorer allows a default maximum of six concurrent WebSocket connections to a single server domain. Each virtual machine console window, or serial console, uses two WebSocket connections. As a result, the maximum number of virtual machine console windows that you can open in Internet Explorer is three.

Workaround: Do one of the following:

- Refer to the appropriate Microsoft documentation for information on changing the maximum number of concurrent WebSocket connections.
- Use a different browser, such as Mozilla Firefox.

Bug 21617374

7.78 Virtual Machine Migration Job Loop During Oracle VM Upgrade

During the upgrade process, if virtual machines are running on Oracle VM Server, a job to migrate those virtual machines can fail and then be repeatedly triggered without the ability to stop or abort the job. As a result, it is not possible to upgrade that instance of Oracle VM Server using the Yum repositories that you configure in Oracle VM Manager.

You must reboot the Oracle VM Server and then complete the upgrade process by manually upgrading Oracle VM Server with the installation media. When you successfully complete the upgrade, the instance of Oracle VM Server that you manually upgraded is in maintenance mode. Taking the server out of maintenance mode then causes the following error:

```
VMAPI_2005E "ID" contains a component "ID" in error.
Error event: server.upgrade.in.progress., Summary: Server Upgrade in Progress,
Description: Upgrade continuing after an interruption.
```

This issue occurs if you upgrade to Oracle VM Release 3.3.4 through multiple previous releases. For example, if you upgrade from Release 3.1.1 to Release 3.2.9 and then upgrade to Release 3.3.2.

Workaround: Clear the `server.upgrade.in.progress.` event from the Oracle VM Manager database as follows:

1. Open an SSH connection to Oracle VM Manager.
2. Run the following command to connect to the MySQL database:

```
# mysql --user='username' -p -S /u01/app/oracle/mysql/data/mysql.sock
```

3. Specify the password for the user at the prompt.
4. Run the following command to change to the `ovs` database:

```
mysql> use ovs
```

5. Run the following statement:

```
mysql> select associatedObjectID, description from OVM_EVENT where type='server.upgrade.in.progress.'
-> ;
```

The statement returns an object ID for the instance of Oracle VM Server to which the event applies, as in the following example:

```
+-----+-----+
| associatedObjectId | description |
+-----+-----+
|          303 | Server: server_name, is being upgraded. |
+-----+-----+
1 rows in set (0.00 sec)
```

6. Run the following statement, substituting `object_ID` with the object ID that was returned with the preceding statement:

```
mysql> update OVM_EVENT set acknowledged=1 where associatedObjectId=object_ID and type='server.upgrade.in.p
```

The statement acknowledges the event and displays a message such as the following:

```
Query OK, 1 row affected (0.01 sec)
Rows matched: 1 Changed: 1 Warnings: 0
```

7. Run the following statement to confirm the `server.upgrade.in.progress.` event is acknowledged:

```
mysql> select acknowledged from OVM_EVENT where type='server.upgrade.in.progress.');
```

A message such as the following displays:

```
+-----+
| acknowledged |
+-----+
|           1 |
+-----+
```

8. Exit the database.

```
mysql> exit
```

For information about manually upgrading Oracle VM Server with the installation media, see [Upgrading Oracle VM Server Using the ISO File](#) in the *Oracle VM Installation and Upgrade Guide*.

Bug 22746573 and 22752343

7.79 Kdump Service on Oracle Sun Server X4-4 with QLogic QLE2562 HBA

The kdump service for Oracle VM Server, on an Oracle Sun Server X4-4 with a QLogic QLE2562 Host Bus Adapter (HBA), requires the `nox2apic` kernel parameter.

Workaround: Do the following on Oracle VM Server:

- Append `nox2apic` to the `KDUMP_COMMANDLINE_APPEND` parameter in `/etc/sysconfig/kdump`.
- Restart the kdump service.

```
# service kdump restart
```

Bug 22729287

7.80 Oracle VM Agent for SPARC Upgrade Fails if Virtual Machines are Running

When upgrading Oracle VM Agent for SPARC from Release 3.2.10, the upgrade process fails if the installer detects changes to the service domain configuration and virtual machines are running during the upgrade.

Workaround: Do the following:

1. Stop the running virtual machines.

```
# ldm stop
```

2. Unbind the virtual machine and destroy the associated disk vds entries.

```
# ldm unbind vm_name
# ldm rm-vdsdev volume_name@service_name
```

3. Manually run the `ovs-agent-setup configure` command.

```
# ovs-agent-setup configure
```

Bug 22651391

7.81 The kdump Service Cannot Mount the Root Partition if Zone Connection to EMC Storage Array

The kdump service on Oracle VM Server cannot mount the root partition if the host has a zone connection to an EMC storage array.

Workaround: Specify the UUID as the device name in `/etc/kdump.conf`.

Bug 22605466

7.82 Oracle VM Server Hangs During Upgrade if Boot Partition Not Large Enough

During the upgrade of Oracle VM Server, using the `UpgradeServer.py` script, the server can hang when it reboots if there is not enough space allocated to the boot partition.

Workaround: Allocate as much space as possible to the boot partition before you attempt to upgrade Oracle VM Server. At a minimum, you should allocate 500MB for the boot partition.

Bug 22600941

7.83 GRO Must Be Disabled After an Upgrade When Routing/Bridging with IXGBE Driver

A kernel issue requires that Generic Receive Offload (GRO) be disabled when routing or bridging with the IXGBE driver. This issue has been fixed for fresh installs, but if you are upgrading to the current release from a release prior to Oracle VM Server 3.3.3, you must disable GRO manually yourself.

Workaround: Disable GRO manually on each affected Oracle VM Server, using `ethtool`:

```
# ethtool -K ethX gro off
```

Bug 21353855

7.84 Change in Variable Name for the eventGetTypes SOAP Call using Oracle VM Web Services API

The member variable in the response class for the `eventGetTypes` call in the SOAP API was changed from `return` to `eventTypes` in Oracle VM 3.3.3. Therefore, if you have client code written for the SOAP API using the original WSDL or client library code provided with an earlier release, the parser for this call may fail.

The REST API is unaffected by this change.

Workaround: If you used the client library `OvmWsClient.jar` provided in the SDK within your client code, this problem is easily remedied by simply updating the `OvmWsClient.jar` file with a version from the current release. Alternately, if you did not use the supplied client library and relied on the WSDL to build your own library instead, you may need to rebuild your own library.



Important

The SOAP API is deprecated and support will be discontinued in future releases. If you are affected by this bug, consider changing your code to use the REST API instead. This is the preferred approach to resolving this issue.

Bug 22005704

7.85 Restart Virtual Machines After Upgrade

If you upgrade from Oracle VM Server Release 3.3.1 using PVHVM and live migration, you must restart your virtual machines after the upgrade is complete.

Workaround: There is no workaround for this issue.

Bug 20826023

7.86 LRO Setting Bridge Interface

The LRO setting should be disabled when the interface is part of a bridge.

Workaround: There is no workaround for this issue.

Bug 20390704

7.87 Disable Transitional Update Repository

Known issue where the Transition Update Repository needs to be disabled via Oracle VM Manager UI when upgrading Oracle VM Server to a newer 3.3 maintenance release

Workaround: Disable the transitional update repository before upgrading Oracle VM Server Release 3.3.

Bug 20288874

7.88 (X86 Only) SWIOTLB Buffer Errors When Using Jumbo Frames on Oracle VM Server

When a network port has been configured for jumbo frames on an Oracle VM Server, errors may appear in the logs of the Oracle VM Server indicating that the SWIOTLB buffer is full. The SWIOTLB is a software component used by the Xen hypervisor. By default, 128 chunks of 512 KB of memory are allocated to SWIOTLB. On an active Oracle VM Server with jumbo frames enabled, these chunks of memory can be used up quickly, degrading network performance and resulting in errors in the system log.

Workaround: Change the Oracle VM Server grub configuration to append the `swiotlb=256` option to the kernel line.

Bug 20693762

7.89 Operation Transactions

A major change to the way in which the CLI and Oracle VM Manager Web Interface interacts with Oracle VM Manager means that transactions have changed in Release 3.3.1. From Release 3.3.1 onwards, if an operation that contains child operations fails, it is important to check the state of all objects affected by the parent and child operations. For example, during the creation of a server pool, the parent command calls a number of child operations. If any of these child operations fail, the command returns an error, but the server pool object may still be created by the parent operation. In this case, the server pool object must be removed manually before attempting to create the server pool again.

Workaround: If an operation fails, check to ensure that the object you were attempting to create is not listed within Oracle VM Manager. If the object is listed, you must remove it before attempting to create it again.

Bugs 17377700, 17436889

7.90 One Instance of Oracle VM Manager Web Interface Per Browser Session

Connecting to multiple instances of the Oracle VM Manager Web Interface per web browser session can result in unexpected issues.

Workaround: Connect to one instance of the Oracle VM Manager Web Interface per web browser session.

Bug 13034728 and 21695861

7.91 IPv6 Updates On Some Microsoft Windows Guests Do Not Reflect in Oracle VM Manager

On Microsoft Windows guests prior to Microsoft Windows Vista, if the IPv6 address is changed and the IPv4 address remains constant, Oracle VM Manager does not reflect the IP address change until the IPv4 address is changed as well.

Bug 14005821

7.92 Incorrect Text Color After Acknowledging VM Errors

After acknowledging an error event on a virtual machine, the text in the **Event Severity** column of the **Virtual Machines** perspective in the **Servers and VMs** tab is displayed in red, instead of black. The error event has been acknowledged, and the incorrect text color can be ignored.

Workaround: Navigate to another page in the UI, then return to the **Virtual Machines** perspective in the **Servers and VMs** tab. The text is the correct color, black.

Bug 14027051

7.93 Unable to Copy Text or Take Screen Shots of Error Dialogs

Some web browser versions have been shown to have trouble allowing users to copy the text in pop-up error dialogs, or to take screen shots of these. This problem is limited to ADF induced pop-up dialogs.

Workaround: Update your web browser to a more recent version, or try using an alternative web browser.

Bug 17832280

7.94 Safari Web Browser on Windows is not Supported

On Windows using Safari to access Oracle VM Manager results in a blank page. This is due to a failure that occurs during the SSL handshake when the server has enabled two-way SSL. Since Oracle VM Manager uses two-way SSL for client certificate authentication, the Safari browser is not supported on Windows.

Bug 18025985

7.95 Object Lock Prevents Some Operations

Some operations, such as server discovery, lock particular objects in the data model until they have finished executing. This is to protect these objects from modification by an external process that may

interrupt the currently running operation or result in inconsistencies within the data model. If an object is locked when either the Oracle VM Manager Web Interface or Oracle VM Manager Command Line Interface attempts to edit it, an error is returned to notify you of the lock. This error may look similar to the following:

```
GEN_000029:Object server1.example.com:ff:20:00:08:ff:ff:ff:ff:ff:ff:00:21:28:af:a4:92  
of type Server could not be modified as it was locked when it was fetched.
```

Workaround: If you are using the Oracle VM Manager Web Interface to perform the edit, close the edit dialog and then reopen it to refresh the data that is contained within it before attempting to retry the edit operation.

If you are using the Oracle VM Manager Command Line Interface perform a [show](#) operation against the object to see the current values and to ensure that the object is not locked. Objects that can be locked include a 'locked' attribute that is displayed when you perform a [show](#) operation. If the object is no longer locked, you can retry your edit.

Bug 18385924

7.96 Unable to Configure NTP For All Servers

Previous releases of the Oracle VM Manager Web Interface provided an option to configure NTP for all of the Oracle VM Servers that were under the ownership of the Oracle VM Manager instance. The option to perform batch configuration of NTP is no longer available in the Oracle VM Manager Web Interface, however it is possible to edit the NTP servers for each individual Oracle VM Server in Oracle VM Manager in the **Edit Server** dialog.

If you need to batch edit the NTP servers for a large number of Oracle VM Servers in your environment, you should use the Oracle VM Manager Command Line Interface or the Oracle VM Web Services API to do this programmatically.

Bug 18435973

7.97 (x86 Only) Oracle VM Server Does Not Boot if Installed on a Multipath SAN Disk Greater Than 2.2 TB in Size

Oracle VM Server cannot be installed properly onto a multipath SAN disk that is greater than 2.2 TB in size. This may be a limitation of the partition manager used in conjunction with a multipath SAN disk during installation. Although installation of Oracle VM Server may complete on a larger disk, the server may have issues booting.

The problem does not affect local physical disks. If you are experiencing this issue, either resize the SAN disk that you are installing to, or select to install to a local physical disk.

Bug 18649993

7.98 (x86 Only) Oracle VM Server Installer Goes To Black Screen After Running `/sbin/loader`

While the Oracle VM Server Installer is booting, the installer runs `/sbin/loader` and then the screen goes black on some systems, such as the Dell Optiplex 755. This is a hardware issue related to the Intel 82Q35 Graphics Controller used on these systems.

The fix is to disable Intel VT-d (Intel Virtualization Technology for Directed I/O) functionality within the BIOS.

Bug 17817142

7.99 (x86 Only) Oracle VM Server Installer Hangs Waiting for Hardware to Initialize

While the Oracle VM Server Installer is booting, it can hang for between 9 and 30 minutes with the message: "Waiting for hardware to initialize...". This occurs when the system BIOS is misconfigured to search for a floppy drive and the system has no floppy drive installed.

This behavior only occurs in the installer, and is not present once Oracle VM Server has completed installation.

The fix is to correct the BIOS setting and disable the floppy drive.

Bug 18036268

7.100 (x86 Only) Oracle VM Server Installer Hangs Examining Storage Devices For Large Number of LUNS

When performing a Kickstart installation of Oracle VM Server, the Installer can hang for long periods with the message: "Examining storage devices...". This occurs when a very large number of Fibre Channel LUNs is attached to the server and the Kickstart configuration file has not been configured to ignore all disks other than the target installation disk.

To resolve this issue add a line to your Kickstart configuration similar to the following:

```
ignoredisk --only-use=/dev/disk/by-path/pci-0000:00:1f.2-scsi-0:0:0:0
```

Change the path of the `--only-use` parameter to match the target disk that you intend to install to.

See the [Oracle VM Installation and Upgrade Guide](#) for more information on this and on Kickstart installations.

Bug 17586422

7.101 (x86 Only) Benign Error Message During Install: HDIO_GET_IDENTITY failed

A benign error message may appear on the Oracle VM Server console during or at the end of an installation. The error usually looks similar to the following:

```
ata_id[23584]: HDIO_GET_IDENTITY failed for '/dev/sdh'
```

This error does not affect installation in any way.

Bug 17457813

7.102 (x86 Only) Cannot Use Installation Media to Upgrade Oracle VM Server if Earlier than Release 3.3.x

Upgrading an instance Oracle VM Server earlier than Release 3.3.x from the installation media is not supported. Upgrades from releases earlier than Release 3.3.x involve transitional steps that require you to configure and set up Yum repositories. For more information, see the [Oracle VM Installation and Upgrade Guide](#).

Bug 17946919

7.103 (x86 Only) Oracle VM Server Upgrade From ULN or Oracle Public Yum Repositories is Restricted to Servers That Do Not Use Non-Native Packages

Upgrading an x86 Oracle VM Server directly using ULN or Oracle Public Yum Repositories is supported on condition that your Oracle VM Server does not use any third party storage plugins or have any non-native packages installed.

7.104 (x86 Only) Many iSCSI or Fibre Channel LUNs Require More Server Memory

As the number of iSCSI or Fibre Channel LUNs or targets used by an Oracle VM Server is increased, the memory consumption increases on the server. This is normal, as more memory is required by dom0 to connect to each LUN or target. Therefore, if you intend to add a large number of LUNs to a server, you must allocate an appropriate amount of physical memory to the server to handle this, and the additional memory must be assigned to dom0 for use. Typically this should be around 1 MB per LUN on top of the memory allocated to run dom0. See [Changing the Memory Size of the Management Domain](#) for information on how to change the dom0 memory allocation.

Memory is assigned to dom0 within the grub configuration on the server. If you are using UEFI boot, the grub configuration file is located at `/boot/efi/EFI/redhat/grub.cfg`, otherwise the grub configuration file is located at `/boot/grub2/grub.cfg`. Edit the line starting with 'multiboot2 /xen.gz' and append the required boot parameters. For example, you may adjust the value for the `dom0_mem` parameter as shown in the following line of the configuration:

```
multiboot2 /xen.gz dom0_mem=max:6144M allowsuperpage dom0_vcpus_pin dom0_max_vcpus=20 placeholder ${xen_rm
```

On servers running an earlier release of the current Oracle VM Server software, an earlier version of grub may still be in use. In this case the same result can be achieved by editing the `/boot/grub/grub.conf` file on the server and amending the `dom0_mem` parameter in the line starting with 'kernel /xen.gz', as shown in the following line of the configuration:

```
kernel /xen.gz console=com1,vga com1=38400,8n1 dom0_mem=6144M allowsuperpage
```

Ideally this should be allocated at installation so that the dom0 grub configuration is updated automatically. Otherwise, you may need to adjust the grub configuration yourself.

Insufficient memory to support the number of LUNs on an Oracle VM Server results in out-of-memory (oom) kills and server instability.

Bug 17614799

7.105 Clustered Server Pools in Mixed Platform Environments Require NFS Access Groups To Be Configured

When creating a clustered server pool with NFS as the storage for the server pool file system, Oracle VM Manager randomly selects a server to initialize the NFS file system to be used by the clustered server pool. This can cause problems in environments where Oracle VM Manager has been configured for both x86 and SPARC servers, since the pool file system is different for each of these platforms and can only be used by servers of the same type.

If an NFS pool file system is initialized by an x86 server then that file system can only be used for a cluster server pool with x86 servers. Similarly, if an NFS pool file system is initialized by a SPARC server then that file system can only be used for a cluster server pool with SPARC servers.

To prevent this issue, before creating a clustered server pool with an NFS file system, create a file system access group for that file system with only the servers that will be in the server pool.

Bug 17490488

7.106 (SPARC Only) Cluster Recovery May Fail When Using NFSv3 For Server Pool File System

If an Oracle VM Server in a clustered server pool fails, any file locks created by the NFS server while the Oracle VM Server was online are enforced until the Oracle VM Server recovers and notifies the NFS server to release those locks. This can block other Oracle VM Servers in the cluster indefinitely. This behavior is the result of the stateless nature of NFSv3 and its file locking mechanism. The locks can be cleared in Solaris, using the `clear_locks` command. However, this problem is recurrent as long as you continue to use NFSv3 to host a cluster file system.

Since NFSv4 is a stateful protocol and its locking mechanism is built into the protocol, this problem does not occur if you use NFSv4 to host a cluster file system. Under NFSv4, the state associated with file locks is maintained at the server under a lease-based model, where locks are leased to a client and the client needs to renew the lease. If the client fails to renew the lease then the NFS server is free to give the lock to another client. Therefore, SPARC-based server pools that are configured to use clustering, should use an NFSv4 export to host the cluster file system.

Note that since x86 server pools use an OCFS2 file system, even if they are hosted on an NFS share, they are unaffected by this problem.

Bug 18997487

7.107 (x86 Only) Server BIOS Settings

The following server BIOS settings may be required to use Oracle VM Server:

- AHCI mode may be necessary to recognize the CDROM device to perform an installation from CDROM.
- Disable I/O MMU Virtualization Settings; for Intel-based servers this is `VT-d`; for AMD based servers this is `AMD-Vi` or `IOMMU`. I/O MMU is not supported in this release.

7.108 (x86 Only) Oracle VM Server Does Not Support `crashkernel=auto` Boot Parameter

Although Oracle Unbreakable Enterprise Kernel 3 (UEK3) supports the `crashkernel=auto` boot parameter, this option is not supported by the Xen hypervisor that is used for Oracle VM Server. Attempting to set this parameter results in the following boot errors:

```
(XEN) crashkernel: memory value expected
(XEN) Command line: console=com2,vga com2=57600,8n1 dom0_mem=840M allowsuperpage crashkernel=auto
```

Dom0 fails to load the kdump service at start-up with the following message:

```
kdump: No crashkernel parameter specified for running kernel
```

Workaround: Specify a valid fixed memory range suitable for the server hardware if you choose to use this parameter. For example, `crashkernel=256M@64M`.

Bug 18174580

7.109 Kdump Core Collector Using Sparse Copy Fails

When kdump on an Oracle VM Server is configured to use sparse files for vmcore dump files to reduce the dump file size, kdump fails with an error similar to:

```
Scanning and configuring dmraid supported devices
...
cp: unrecognized option `--sparse=always'
...
```

Workaround: Add the following to the `kdump.conf` on the Oracle VM Server:

```
extra_bins /bin/cp
core_collector /bin/cp --sparse=always
```

Bug 15959684, 17943175

7.110 (x86 Only) Oracle VM Server Installation on Sun Fire X4800

If you are installing Oracle VM Server on a Sun Fire X4800, you must provide extra parameters when booting from the installation media (CDROM or ISO file), or when using a kickstart installation. These parameters allow the megaraid_sas driver to load correctly.

If booting from the installation media, press F2 when the initial boot screen is displayed and provide the following additional parameters as part of the boot command:

```
mboot.c32 xen.gz extra_guest_irqs=64,2048 nr_irqs=2048 --- vmlinuz --- initrd.img
```

If using a kickstart installation, add the additional kernel parameters to the PXE configuration file.

If you want to make these changes permanent, edit the `/boot/grub/grub.conf` file in your Oracle VM Server after the installation has completed.

Bug 12657272

7.111 (x86 Only) Installation of Oracle VM Server on some HP Server Hardware May Fail if Tape Drive is Attached

Installation of Oracle VM Server may fail on some HP server hardware when the tape drive is attached, rendering error messages describing a problem with a call to "makeDriveDeviceNodes". To avoid this issue, disconnect the tape drive and begin the installation again.

Bug 14667345

7.112 (x86 Only) Wake On Lan (WOL) Fails if Oracle VM Servers on Different Subnets

Starting or restarting Oracle VM Servers fails if the Oracle VM Servers in a server pool are on different subnets.

Workaround: Use IPMI (Intelligent Platform Management Interface) to start or restart Oracle VM Servers in a server pool that are on different subnets.

Bug 12410458

7.113 (x86 Only) Sun Fire X4170 Server Not Fenced During Cluster Failure

In some situations where a Sun Fire X4170 server has a hardware failure or fault/error, the Oracle VM Server may not be fenced and removed from the cluster, even though it is not available to participate in the cluster.

Workaround: Fix the hardware fault, and/or clear the error messages/faults using the ILOM CLI.

Bug 14463948

7.114 (x86 Only) Netconsole Unknown Error 524 During Oracle VM Server Start-up

To use netconsole you must specify a non-bridged ethx device, in the /etc/sysconfig/netconsole file on an Oracle VM Server, for example:

```
# The ethernet device to send console messages out of (only set this if it
# can't be automatically determined)
# DEV=
DEV=eth2
```

Bug 12861134

7.115 (x86 Only) ACPI Buffer Error After Installing Oracle VM Server

On some Intel-based systems, the following error may occur after installing Oracle VM Server when the computer is started:

```
[ 0.674742] ACPI Error: Field [CPB3] at 96 exceeds Buffer [NULL] size 64 (bits)
(20090903/dsopcode-596)
[ 0.675167] ACPI Error (psparse-0537): Method parse/execution failed
[\_SB\_._OSC] (Node ffff88002e4fba50), AE_AML_BUFFER_LIMIT
```

This has been observed on systems with the following BIOS information, but may also occur in other BIOS versions:

Vendor: Intel Corp. Version: S5500.86B.01.00.0036-191.061320091126 Release Date: 06/13/2009 BIOS Revision: 17.18 Firmware Revision: 0.0

HP ProLiant BL685c G6 HP BIOS A17 12/09/2009 Backup Version 12/01/2008 Bootblock 10/02/2008

This error can safely be ignored.

Bugs 12865298 and 12990146

7.116 Failed Server Evacuation Defined in DPM Policy Generates User Acknowledgeable Event

Certain conflicting and concurrent events can cause server evacuation, the process whereby running virtual machines are migrated to an alternate Oracle VM Server before shutdown due to a DPM policy, to fail. For instance, attempting to manually migrate a virtual machine on an Oracle VM Server at the same time that the DPM policy is attempting to shutdown the Oracle VM Server can cause the DPM policy to fail

with a server evacuation error message. This leaves the Oracle VM Server in a warning state, which must be cleared before the server can return to normal operation.

Workaround: If a server is in warning state after a failed DPM operation, acknowledge the related event. The server assumes its normal operational role again and the warning is cleared.

Bug 18962618

7.117 (SPARC Only) Serial Console Hangs During Installation of Oracle Solaris 11 on Virtual Machine

The serial console in the Oracle VM Manager Web Interface hangs during the installation of Oracle Solaris 11 on a virtual machine.

Workaround: Manually access the console from the Oracle VM Server hosting the virtual machine, by identifying UUID and the port where the virtual machine is running, and then telnetting to that port from the Oracle VM Server. For example, to access the console for a virtual machine with UUID 0004fb00000600000a395ecc901e7822:

```
# ldm list
NAME                                STATE      FLAGS    CONS   VCPU  MEMORY  UTIL  UPTIME
primary                             active    -n-cv-   SP     16    16G     9.3%  44d 20h 41m
0004fb00000600000a395ecc901e7822  active    -n----- 5000   8     4G     0.2%  2d 14m
0004fb000006000014fcd950934fbb3f  active    -n----- 5001   8     4G     0.6%  4d 22h 51m
0004fb000006000006e6e2b1504cf6f64  active    -n----- 5003   8     4G     0.2%  2d 9m
0004fb0000060000fc8632393068ee2b  active    -n----- 5002   8     4G     0.2%  3d 19h 4m

# telnet localhost 5000
Trying ::1...
telnet: connect to address ::1: Connection refused
Trying 127.0.0.1...
Connected to localhost.
Escape character is '^]'.

Connecting to console "0004fb00000600000a395ecc901e7822" in group "0004fb00000600000a395ecc901e7822"
Press ~? for control options ..
```

Bug 18082287

7.118 Editing Virtual Machine Configuration File Results in Unexpected Behavior

Any changes to the virtual machine configuration file should be performed using Oracle VM Manager. The only exception to this is if advised to manually edit the vm.cfg file by Oracle Support Services, or as explicitly specified in these Release Notes.

Manual changes made to the virtual machine configuration file (vm.cfg) are not reflected in Oracle VM Manager. Any manual changes to the vm.cfg file may result in unexpected and undesirable behaviour. For example, if you edit the HA setting in the vm.cfg to disable HA, and the virtual machine is stopped by any method other than using Oracle VM Manager, the virtual machine is restarted. Oracle VM Manager is not aware of the HA change in the virtual machine's configuration file.

Bugs 12654125 and 13391811

7.119 Concurrent Template Operations May Fail Due to Lock Issue

When importing and deleting several templates concurrently, or when an Oracle VM Server is removed during the import of a template, a lock exception error may appear. However, the template upload often

completes successfully despite the error message, but it does not appear in the list of available templates in the storage repository.

To resolve this problem, refresh the storage repository. The uploaded template file should then appear in the list. In some cases the imported template turns out to be incomplete. In that case, you should delete the template and import the template again.

7.120 (SPARC Only) Wrong Error Message Returned When Importing A Template From An Incorrect URL

If you attempt to import a template for a virtual machine from an incorrect URL located on an HTTPS server that has an SSL certificate that cannot be verified, an incorrect error message is returned indicating that the certificate could not be verified instead of the fact that the file could not be found.

If you receive an error indicating that the certificate could not be verified, check that the file that you are attempting to import is accessible at the URL that you provided.

Bug 18003814

7.121 (x86 Only) Virtual Machine Fails to Restart On Another Server in the Cluster if ACPI is Enabled

A virtual machine may fail to restart on another server within the cluster when the original server becomes unavailable and ACPI power management is enabled within the BIOS for either of the Oracle VM Servers within the cluster.

Workaround: Disable ACPI within the BIOS for each of the Oracle VM Servers within the cluster.

Bug 14747722

7.122 (x86 Only) Oracle Solaris 10 Virtual Machine May Hang During Shutdown

When performing a graceful shutdown from within a virtual machine running Oracle Solaris 10, or when attempting to stop the virtual machine from within Oracle VM Manager, or when performing a migration of the virtual machine, the virtual machine may hang during the shutdown process. This may be caused by an operating system error, or some other unknown error. You can use the virtual machine console in the Oracle VM Manager Web Interface to check for operating system errors.

This bug does not affect virtual machines running Oracle Solaris 11.

Workaround: Kill the virtual machine affected using the **Kill VM** option within Oracle VM Manager.

Bug 15863719

7.123 (x86 Only) Virtual Machine Created with Network (PXE) Installation Does Proceed Beyond Pre Boot

Creating a virtual machine using the Network method (PXE) does not proceed beyond pre boot, so the virtual machine is not created. This occurs for Oracle Linux 5.x virtual machines.

Bug 12905120

7.124 (x86 Only) Maximum Memory to Start a PVM Guest is 470 GB

Although PVM guests are technically capable of running with up to 500,000 MB of virtual memory allocated, as described in [Chapter 6, Configuration Limits for Release 3.4](#), attempting to start a PVM Guest with more than 470 GB of memory can cause the virtual machine to crash on boot. This problem does not occur if the PVM Guest is started with 470 GB of memory. You are able to hot-add up to 500 GB virtual memory to the PVM Guest once it is running.

Bug 18538335

7.125 (x86 Only) Creating a PVM Guest Slow Using Local Storage

Creating a PVM guest using local storage may take a very long time. This may be caused by write caching being turned off for the local disk.

Workaround: Enable write caching for the disk using the `hdparam` utility.

Bug 12922626

7.126 (x86 Only) Live Migration of a VM may be Affected by Guest Linux Kernel Version

Linux UEK x86_64 2.6.32-100.26.2.el5 as guest kernel does not work well for live migration. Please update to the latest UEK.

Bug 14276606

7.127 (x86 Only) Improving Mouse Pointer Control in Virtual Machine Console

When you launch the virtual machine console from Oracle VM Manager you may experience that the mouse pointer on your local machine and the mouse pointer in the virtual machine travel across the screen at different speeds.

If your guest virtual machine's operating system is Linux-based, the following workaround may reduce the mouse control issue. Enter the following on the guest's command line:

```
# xset m 1 1
```

7.128 (x86 Only) Solaris 10 Kernel Panic on Some AMD Systems

Virtual machines with the guest operating system Solaris 10 may experience kernel panic on systems with AMD processors. Kernel panic has been seen in Solaris 10 9/10 (Update 9) and Solaris 10 8/11 (Update 10).

Workaround: To work around this issue:

1. During the installation or first time boot up, edit the grub menu and append the `-kd` kernel boot parameter.
2. Continue with the boot to run the Solaris `kldb`. When the following screen prompt is displayed:

```
Welcome to kldb  
[0]>
```

Enter the command:

```
cmi_no_init/W 1
```

Enter the following to continue the installation or system boot:

```
:c
```

3. After Solaris is installed and booted up, append the following line to the `/etc/system` file to make this change persistent across system reboot.

```
set cmi_no_init = 1
```

Bug 13332538

7.129 (x86 Only) Solaris 10 Release 8/11 Guest Hangs at Boot

When booting a virtual machine with Oracle Solaris 10 Release 8/11, the guest OS hangs when the copyright information screen appears. This is caused by a change in CPUID handling in dom0, which triggers a Solaris bug on platforms with CPUs of the Westmere-EP family.

Workaround: To make Solaris 10 run, kill the virtual machine from Oracle VM Manager and then apply the following manual fix:

1. At boot, edit the grub menu: append the `-kd` kernel boot parameter. This runs the Solaris kernel debugger.
2. Continue the boot sequence up to Solaris `kmdb`.
3. At the `kmdb` prompt, enter the following command:

```
Welcome to kmdb  
[0]> apix_enable/W 0
```

4. Enter `:c` to continue the system boot sequence.
5. When Solaris has been installed and has successfully booted, make this fix persistent by adding the following line to `/etc/system`:

```
set apix_enable = 0
```

Bug 13876544

7.130 (x86 Only) Solaris 11 Guest With More Than 2 VCPUs Hangs at Boot

When booting a virtual machine with running Oracle Solaris 11 and configured with more than 2 virtual CPUs, the guest OS may hang. This is caused by a Solaris bug related to a change in the Xen hypervisor that was fixed in Oracle Solaris 11.2 SRU 8.4.

Workaround: To make Solaris 11 run on Oracle VM 3.4 with more than 2 virtual CPUs, either upgrade to Oracle Solaris 11.2 SRU 8.4 or above, or perform the following steps to implement a manual fix:

1. During the installation or first time boot up, edit the grub menu and append the `-kd` kernel boot parameter.
2. Continue with the boot to run the Solaris `kmdb`. When the following screen prompt is displayed:


```
Welcome to kmdb  
[0]>
```

Enter the command:

```
cmi_no_init/W 1
```

Enter the following to continue the installation or system boot:

```
:c
```

3. After Solaris is installed and booted up, append the following line to the `/etc/system` file to make this change persistent across system reboot.

```
set cmi_no_init = 1
```

Bug 18547858

7.131 (x86 Only) Solaris 11 Release 2011.11 Guest Hangs at Boot

When booting a virtual machine with Oracle Solaris 11 Release 2011.11, the guest OS hangs. This is caused by a Solaris bug where interrupt storms occur on Intel systems based on Sandy bridge and Westmere CPUs. The issue has been fixed in Solaris 11 2011.11 SRU 2a.

Workaround: To make Solaris 11 2011.11 run on Oracle VM 3.4, use the SRU 2a, or apply the following manual fix to the GA release:

1. At boot, edit the grub menu: append the `-kd` kernel boot parameter. This runs the Solaris kernel debugger.
2. In the kernel debugger, enter the following commands:

```
[0]> ::bp pcplusmp`apic_clkinit  
[0]> :c  
kmdb: stop at pcplusmp`apic_clkinit  
kmdb: target stopped at: pcplusmp`apic_clkinit: pushq %rbp  
[0]> apic_timer_preferred_mode/W 0  
pcplusmp`apic_timer_preferred_mode: 0x2 = 0x0  
[0]> :c
```

3. Continue the system boot sequence.
4. When Solaris has been installed and has successfully booted, make this fix persistent by adding the following line to `/etc/system`:

```
set pcplusmp:apic_timer_preferred_mode = 0x0
```

For more information, please consult the Support Note with [ID 1372094.1](#). You can also find this document by logging on to [My Oracle Support](#) and searching the knowledge base for [1372094.1](#).

Bug 13885097

7.132 (x86 Only) Windows Server 2008 R2 x64 HVM Guests do Not Cleanly Shut Down

Windows Server 2008 Release 2 64-bit hardware virtualized guests fail to shut down cleanly. After the guest has been shut down, and started again, Windows reports that it was not shut down cleanly.

This is not an issue for Windows Server 2008 Release 2 32-bit hardware virtualized guests with paravirtualized drivers (PVHVM).

Bug 12658534

7.133 (SPARC Only) Need Actual Available Memory for Live Migration

If the virtual machine memory is less than the available memory on the Oracle VM Server that the virtual machine is to be migrated to, the migration may fail with an error message stating that there is not enough memory available to complete the request. This is due to memory fragmentation on the target server. The details of this are discussed in http://docs.oracle.com/cd/E35434_01/html/E23807/migratingactivedomain.html#memory.

Bug 14851322

7.134 (x86 Only) Network Card Limit in Virtual Machines

Oracle VM Manager supports eight network cards for each HVM virtual machine as outlined in [Table 6.3 "Virtual Machine Maximums"](#). However, the system library does not allow users to add more than *three* network cards when creating a virtual machine from installation media.

Workaround: After the virtual machine is created, add up to *five* new network cards by editing the virtual machine in Oracle VM Manager.

7.135 QLogic cLOM8214 1/10 Gigabit Ethernet NIC Initializes with Link State Down

On some systems, such as the HP ProLiant DL980 G7 server, the QLogic cLOM8214 1/10GbE NIC initializes with link state down.

Workaround: To work around this problem install the qlcnic driver module with the option "use_msix=0". To do this, create the file `/etc/modprobe.d/qlcnic.conf` and ensure that it contains the following line:

```
options qlcnic use_msi_x=0
```

For the change to take effect, you should reboot the server. To temporarily disable the option for the module without rebooting, you can perform the following steps:

```
# ifconfig ethx down
# rmmod qlcnic
# modprobe qlcnic use_msi_x=0
```

Bug 15865548 and 18072952

7.136 Renaming of QLogic cLOM8214 1/10 Gigabit Ethernet NIC is Incorrect

On some systems at initial install, udev may rename the QLogic cLOM8214 1/10GbE Ethernet port to `__tmpxxxxxxx`. This is due to a slow initialization of the port.

Workaround: Determine which interface name the QLogic cLOM8214 1/10GbE Ethernet NIC should use, for example eth1. Find the MAC address for the QLogic cLOM8214 1/10GbE Ethernet NIC that you want to

configure. You can do this by running the following command and studying its output to find the incorrectly named interface:

```
# cat /etc/issue
IF : bond0      MAC : 1c:c1:de:74:b9:34 IP : 10.211.1.135
IF : eth0       MAC : 1c:c1:de:74:b9:34
IF : eth1       MAC : 1c:c1:de:74:b9:35
IF : __tmp713192749  MAC : 24:be:05:ef:5a:f4
```

In `/etc/sysconfig/network-scripts`, create an `ifcfg-ethx` configuration file for the interface name that you wish to use and ensure that the file contains a line that expresses the MAC address for the NIC that you want to assign to this interface name. For example, using the example output from the previous command, you could create a new file at `/etc/sysconfig/network-scripts/ifcfg-eth2` with the following contents:

```
DEVICE=eth2
BOOTPROTO=none
HWADDR=24:BE:05:EF:5A:F4
ONBOOT=yes
```

Finally, bring up the interface using the `ifconfig` command. For example:

```
ifconfig eth2 up
```

Bug 15897549

7.137 (x86 Only) Incorrect ARP Reply When Using Jumbo Frames

ARP Flux can cause confusion to some 10G switches when using jumbo frames causing network traffic to stop.

Workaround: disable ARP flux on the affected server. If the interfaces are all on different sub-networks, run the following command:

```
# sysctl -w net.ipv4.conf.all.arp_filter=1
```

If some of the interfaces are on the same sub-network, run the following commands:

```
# sysctl -w net.ipv4.conf.all.arp_ignore=1
# sysctl -w net.ipv4.conf.all.arp_announce=2
```

If you wish to make these changes permanent, add the relevant ARP parameter settings to `/etc/sysctl.conf`:

```
net.ipv4.conf.all.arp_filter=1
net.ipv4.conf.all.arp_ignore=1
net.ipv4.conf.all.arp_announce=2
```

Bug 17982926

7.138 (x86 Only) Changing Cluster Heartbeat Network Does Not Reflect New IP Address

If you move the Cluster Heartbeat network role to another network, with a different IP address, the change is not reflected in the Oracle VM Servers.

Workaround: Edit the `/etc/ocfs2/cluster.conf` file on each Oracle VM Server in the network to reflect the new IP address, and restart each Oracle VM Server.

Bug 12870099

7.139 NFSv4 Read/Write Delegation Not Supported

As of Release 3.3.1, Oracle VM does not support NFS V4 read/write delegation. NFS V4 delegation must be disabled on network storage devices used for Oracle VM.

The following procedures provide examples for disabling NFS V4 read/write delegation on different network storage devices. You should refer to the manufacturer's documentation for your storage device to review additional details.

To disable read/write delegation on an Oracle ZFS Storage Appliance, log in to the browser user interface. Select [Configuration](#) and then [Services](#). Locate and then click [NFS](#). Deselect [Enable NFSv4 delegation](#) and then click [Apply](#).

To disable read/write delegation on a NetApp filer, go to the NetApp console. Select [FilerView](#), then click [NFS->Configure](#). Select [no](#) on the following two pull-down menus:

- Enable Read Delegation on NFS Version 4
- Enable Write Delegation on NFS Version 4

Bug 18391474

7.140 (x86 Only) Unclean File System Causes Errors When Used as a Server Pool File System

If a server pool file system is not clean (contains existing files and server pool cluster information) and used to create a server pool, a number of errors may occur.

- Cannot create a server pool using the file system. The following error is displayed:

```
OVMAPI_4010E Attempt to send command: create_pool_filesystem to server: server_name failed.
OVMAPI_4004E Server Failed Command: create_pool_filesystem ... No such file or directory
```

Bug 12839313

- An OCFS2-based storage repository becomes orphaned (the clusterId that was used when the OCFS2 file system was created no longer exists), you cannot mount or refresh the repository, and the following error is displayed:

```
"OVMRU_002037E Cannot present the Repository to server: server_name. Both server and repository need to be in the same cluster."
```

Workaround: Clean the file system of all files before it is used as a server pool file system.

Bug 12838839

7.141 (SPARC Only) Agent Fails to Reconcile Multipath LUNS If Solaris I/O Multipathing is Disabled

If you attempt to configure iSCSI disks that have multiple paths on an Oracle VM Server for which Solaris I/O Multipathing (MPxIO) has been disabled, the Oracle VM Agent for SPARC incorrectly returns multiple LUNs to Oracle VM Manager resulting in misconfiguration that could cause unexpected behavior.

Solaris I/O Multipathing should not be disabled on an Oracle VM Server, particularly where that server may access iSCSI disks with multiple paths.

Bug 18648267

7.142 (x86 Only) Size of New LUN on Server is Incorrect If an Existing LUN Is Unmapped First

If a LUN belonging to an unmanaged Fibre Channel array is unmapped from a server and a new target is mapped to it using the same LUN, then after rescanning the physical disks on that server, the size of the new LUN is set to the size of the LUN that was unmapped.

Remapping LUNs is risky because it can data corruption since the targets have been switched outside of the server. An error should appear in the messages file:

```
Warning! Received an indication that the operating parameters on this
target have changed. The Linux SCSI layer does not automatically adjust
these parameters.
```

Workaround: Ensure that when exposing a new target, you do so with a LUN that has not previously been used since the last reboot.

Bug 14851579

7.143 (x86 Only) Remapping LUNs Causes Storage Refresh To Hang

If an iSCSI NetApp storage array is refreshed within Oracle VM Manager after a LUN is unmapped at the array, and then refreshed again after the LUN is mapped back the second refresh may hang.

This is due to the fact that the Oracle VM Server sees the LUN size as zero and fails the multipath path to the LUN while the default path checker for NetApp `TUR` sees the path as up. The vacillating path statuses can cause IO to the affected LUN to hang.

Remapping LUNs is risky because it can data corruption since the targets have been switched outside of the server.

Workaround: One way to ensure that the Oracle VM Server maintains a consistent view of the path and avoids a possible hang scenario is to change the path checker for NetApp in `multipath.conf` to `directio`. Note that `directio` is not considered as performant as `TUR`. Running the following command on the affected Oracle VM Server clears the hang:

```
# iscsiadm -m node -R
```

Bug 18421164

7.144 (x86 Only) LUNs Must Be Cleaned Prior to Storage Repository Creation

When you attempt to create a storage repository on a LUN that was previously used by another clustered server pool, the operation will fail. This is due to a built-in mechanism that prevents the creation of a new OCFS2 file system if the disk or partition already contains cluster data.

Workaround: Clear all files and file system information on the LUN before placing a storage repository on it.

Bug 13806344

7.145 NetApp ONTAP (8.2 c-mode) Operating System Does Not Work With Oracle VM

The current NetApp ONTAP (8.2 c-mode) operating system has an NFS related issue with the `showmount -e` command. This issue prevents Oracle VM from seeing any NFS file systems on a NetApp storage appliance running this operating system.

NetApp has provided a workaround for ONTAP 8.2 on the NetApp support site. Further instructions are provided for resolving this issue on My Oracle Support with Doc ID 1640848.1 available at the following URL:

<https://support.oracle.com/epmos/faces/DocumentDisplay?id=1640848.1>

You must reapply the workaround after you have upgraded an Oracle VM Server.

Bugs 18098710, 18672536

7.146 (x86 Only) Black Listing of System Disks for Legacy LSI MegaRAID Controllers Not Supported

Oracle VM Server cannot add the system disks for Legacy LSI MegaRAID (Dell PERC4) bus controllers to the `/etc/blacklisted.wwid` file, so the disks are not blacklisted in the multipath configuration. This occurs because the bus controllers are not capable of returning a unique hardware ID for each disk. Using system disks on Legacy LSI MegaRAID (Dell PERC4) bus controllers is therefore not supported.

Bug 12944281

7.147 (x86 Only) Blacklisting of System Disks for Multipathing Fails on HP Smart Array (CCISS) Disk Devices

Installing Oracle VM Server on an HP Smart Array (CCISS) fails to blacklist system disks (they are not included in the `/etc/blacklisted.wwid` file). Messages similar to the following are logged in the `/var/log/messages` file:

```
multipathd: /sbin/scsi_id exited with 1
last message repeated 3 times
```

Workaround: Configure multipathing to blacklist the CCISS system devices by adding a new line to the `multipath.conf` file:

```
# List of device names to discard as not multipath candidates
#
## IMPORTANT for OVS do not remove the black listed devices.
blacklist {
    devnode "^(ram|raw|loop|fd|md|dm-|sr|scd|st|nbd)[0-9]*"
    devnode "^hd[a-z][0-9]*"
    devnode "^\etherd"
+   devnode "^cciss!c[0-9]d[0-9]*" <<====
    %include "/etc/blacklisted.wwid"
}
```



Note

This workaround is not required for HP Smart Array disks backed by the HPSA module.

Bug 12722044

7.148 (x86 Only) HP Smart Array CCISS Disk Devices Are Not Supported For Creation of Local Storage Repositories

HP Smart Array disk devices backed by the older CCISS module are not supported for use as a local storage repository, or for use as raw disks for virtual machines, or for server pool file systems. HP Smart Array disk devices backed by the HPSA module are fully supported.

To verify whether the controller has support for the HPSA module, first obtain the PCI ID of the raid controller for the local disk using the following command:

```
lspci -vnn|grep "RAID bus controller"
```

Check the list of controllers supported by the HPSA module to confirm whether or not your controller's PCI ID appears within the list, by running the following command:

```
modinfo hpsa -F alias
```

If your controller is supported, ensure that you use the HPSA module instead of the CCISS module for your controller.

Bug 16072257

7.149 (x86 Only) Multiple Paths Used in Multipath Environments on Oracle Pillar Axiom Storage

When performing a fail-over (for example, by disabling one protocol such as Fibre Channel), the paths are grouped and the traffic flows through all protocols (for example, both Fibre Channel and iSCSI), which is not as expected. This also occurs with fail-back. This issue occurs in all Oracle VM Releases since 3.1.1.

Workaround: Run the following commands on the Axiom server:

```
# service multipathd restart  
# multipath -v3
```

Bugs 14329375 and 14314282

7.150 Refreshing a NAS-based File System Produces Invalid/Overlapping Exports

When a NAS-based file system is refreshed, it may produce invalid or overlapping exports. During a file system refresh job, all mount points defined in the NAS-based file server's exports file are refreshed, even file systems that are not intended to be used in Oracle VM environments.

Top level directories which also contain subdirectories in the exports file may also cause problems, for example, if an export file contains /xyz as an export location, and also contains /xyz/abc. In this case, the following error may be displayed during a refresh file system job:

```
OVMRU_002024E Cannot perform operation. File Server: server_name, has invalid exports.
```

Workaround: For the second issue, to work around this problem, do not export top level file systems in the NAS-based file server's exports file.

Bug 12800760

7.151 (x86 Only) Shared OCFS2 Cluster File System on Virtual Disk Not Supported

When you create a configuration with virtual machines sharing an OCFS2 cluster file system on a virtual disk, severe I/O interruptions may occur. These may affect the heartbeating function of a clustered server pool and even cause Oracle VM Servers to reboot. Therefore, a shared OCFS2 cluster file system on a virtual disk is not a supported configuration.

Workaround: Use a physical disk or LUN. Make sure that the virtual machines in your configuration have shared access to this physical disk or LUN, and create the shared OCFS2 cluster file system there.

Bug 13935496

7.152 Virtual Disk Images Must Be Properly Aligned To The OCFS2 Block Size For Performance

If the partitions for a virtual disk are not properly aligned to the OCFS2 block size, OCFS2 serializes I/O to the virtual disk image resulting in degraded performance. This only affects virtual disk images stored on OCFS2 repositories and does not apply to NFS repositories.

Workaround: Check for misaligned partitions in the virtual disk images and, if any are found, recreate the disk images with properly aligned partitions. To determine whether partitions are correctly aligned, use `fdisk -lu` to find the starting sectors of the partitions. Ensure that these are a multiple of 8 (512 byte sectors), which aligns them at 4 KB, the OCFS2 block size.



Note

Many recent operating systems often start the first partition in sector 2048, aligning it to 1 MB, which works well for most storage RAID stripe sizes.

Bug 14355588

7.153 Oracle VM Manager Command Line Interface Backspace Key

In some command line terminals, the backspace key prints the previous line when the input wraps over two lines, for example:

```
OVM> create Vm name=MyVM repository=MyRepository domainType=XEN_HVM startPolicy=
USE_POOL_POLICY on ServerPool name=MyServerPool
Command: create Vm name=MyVM repository=MyRepository domainType=XEN_HVM startPol
icy=USE_POOL_POLICY on ServerPool name=MyServerPool
Status: Success
Time: 2014-03-17 05:25:29,912 CET
JobId: 1395030328969
Data:
  id:0004fb0000060000d38427b0b1fd06b7  name:MyVM
Use up arrow key to display previous command.
OVM> create Vm name=MyVM repository=MyRepository domainType=XEN_HVM startPolicy=
USE_POOL_POLICY on ServerPool name=MyServerPool
Use backspace key to delete last character from the command.
OVM> create Vm name=MyVM repository=MyRepository domainType=XEN_HVM startPolicy=
create Vm name=MyVM repository=MyRepository domainType=XEN_HVM startPolicy=USE_P
OOL_POLICY on ServerPool name=MyServerPoo
The first line of the command is printed again.
Use backspace key again to delete last character from the command.
OVM> create Vm name=MyVM repository=MyRepository domainType=XEN_HVM startPolicy=
create Vm name=MyVM repository=MyRepository domainType=XEN_HVM startPolicy=USE_P
```



```
create Vm name=MyVM repository=MyRepository domainType=XEN_HVM startPolicy=USE_P
OOL_POLICY on ServerPool name=MyServerPo
The first line of the command is printed again.
```

While this does not affect the editing or submission of the command, it may be difficult to read the command being edited. This issue has been seen on some GNOME window managers.

Workaround: Use PuTTY to connect to the CLI. Alternatively, you can use xterm, with the correct wraparound options. You should enable the xterm auto-wraparound (-aw) and reverse-wraparound (-rw) options. To set the xterm wraparound options correctly, start xterm with the `xterm -aw -rw` command.

Bugs 16810639 and 16049754

7.154 Oracle VM Manager Command Line Interface Allows THIN_CLONE cloneType On NFS

While thin cloning is only supported on OCFS2 file systems and the Oracle VM Manager Web Interface does not provide the option to create a clone storage mapping for a thin clone on an NFS file system, the Oracle VM Manager Command Line Interface does not prevent you from doing this. Therefore, a command similar to the following succeeds:

```
OVM> create vmclonestorageMapping name=clonestoragemapping
cloneType=THIN_CLONE vmDiskMapping=0004fb0000130000ef5b6a1671333bb3
repository=nfsrepo on vmclonecustomizer name=clonecustomizer1
```

However, when a clone is created using the clone customizer that this clone storage mapping is attached to, the action fails due to the fact that the clone target does not support the thin clone cloneType:

```
OVM> clone vm name=vm1.0 destType=vm serverPool=MyServerPool
cloneCustomizer=clonecustomizer1 targetRepository=nfsrepo
Command: clone vm name=vm1.0 destType=vm serverPool=MyServerPool
cloneCustomizer=clonecustomizer1 targetRepository=nfsrepo
Status: Failure
Time: 2014-05-06 22:40:33,755 PDT
JobId: 1399441233570
Error Msg: Job failed on Core: OVMRU_007013E Cannot thin clone: System.img
(2), to: nfsrepo. The clone target does not support thin cloning. [Tue May 06
22:40:33 PDT 2014]
```

This is expected behavior, but the flexibility offered by the Oracle VM Manager Command Line Interface is inconsistent with the Oracle VM Manager Web Interface and can result in misconfiguration by a user.

Bug 18716652

7.155 Untagged VLAN Interface Missing After Upgrade of Oracle VM Manager

In releases prior to 3.3, if VLAN port group names have one or more commas in them, they may not be parsed correctly when Oracle VM Manager is doing a re-discover of an Oracle VM Server after Oracle VM Manager has just been upgraded to 3.3 or 3.4. In the case of an untagged VLAN interface, this can lead to the VLAN interfaces or the underlying port not being associated with a network in Oracle VM Manager. However, the Oracle VM Server is still configured correctly.

Performing a re-discover of the Oracle VM Server after the upgrade to 3.3 or 3.4 corrects the view that Oracle VM Manager has of the network configuration. In version 3.3 and 3.4, VLAN port groups have been removed. Therefore, once the system is upgraded to version 3.3 or 3.4 and a re-discover is done, the issue is resolved.

Bug 18758922

Chapter 8 Additional Software for Oracle VM

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Additional software for Oracle VM includes tools and plugins to help you configure and integrate your environment.

8.1 Oracle VM Storage Connect plug-ins

Release 3.4 provides full support for the Oracle VM Storage Connect plug-ins that were added in Oracle VM Release 3.1. Support for iSCSI multipath, which was added in Oracle VM Release 3.2.1, is also fully supported in this release.

For more information, see [Installing Oracle VM Storage Connect plug-ins](#) in the *Oracle VM Administration Guide*.

8.2 Oracle VM Guest Additions

The Oracle VM Guest Additions are a set of packages that you install on virtual machines in an Oracle VM environment. The Oracle VM Guest Additions let you communicate with virtual machines from Oracle VM Manager and provide an easy method to configure virtual machines.

To find more information about the Oracle VM Guest Additions, see:

- [Installing and Using the Oracle VM Guest Additions](#) in the *Oracle VM Administration Guide*
- [What are the Oracle VM Guest Additions?](#) in the *Oracle VM Concepts Guide*

8.3 Oracle VM Utilities

The Oracle VM Utilities are a collection of command line scripts that allow you to perform basic management tasks in an Oracle VM environment. Release 3.4 works with the Oracle VM Utilities version 2.1.

To find more information about the Oracle VM Utilities, see:

- [Using the Oracle VM Utilities](#) in the *Oracle VM Administration Guide*
- [Oracle VM Utilities](#) in the *Oracle VM Concepts Guide*

8.4 Oracle Enterprise Manager

Oracle VM Manager integrates with Oracle Enterprise Manager so that you can manage the entire Oracle VM environment from within Oracle Enterprise Manager.

For more information about the Oracle VM versions supported by Oracle Enterprise Manager, see the Oracle Enterprise Manager documentation at: <http://www.oracle.com/technetwork/oem/grid-control/documentation/oem-091904.html>

8.5 Third Party Software

Oracle Corporation supports certain third party software in combination with Oracle VM.

For information about supported third party software, see the *Oracle VM Partners* page at: <http://www.oracle.com/technetwork/server-storage/vm/partners/index.html>



Note

If you plan to install third party software in an Oracle VM environment and are not sure if it is supported, contact your Oracle Corporation support representative.

For information about hardware certified for Oracle VM, see the Hardware Certification List (HCL) for Oracle Linux and Oracle VM at: <https://linux.oracle.com/hardware-certifications>.