

Oracle® VM

Paravirtual Drivers for Microsoft Windows Release 3.4.1

ORACLE®

E88866-01

May 2016

Oracle Legal Notices

Copyright © 2011, 2017 Oracle and/or its affiliates. All rights reserved.

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

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

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

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

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

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

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

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

Abstract

Document generated on: 2016-05-26 (revision: 5553)

Table of Contents

Preface	v
1 Getting Started with the Oracle VM Paravirtual Drivers for Microsoft Windows	1
1.1 Downloading the Oracle VM Paravirtual Drivers for Microsoft Windows	1
2 Supported Releases, Operating Systems, and Configuration Limits	3
2.1 Supported Oracle VM Releases	3
2.2 Supported Guest Operating Systems	3
2.3 Microsoft Windows Compatibility Signing	4
2.4 Configuration Limits	4
3 What's New with the Oracle VM Paravirtual Drivers for Microsoft Windows?	5
3.1 New in Release 3.4.1	5
3.2 New in Release 3.2.3	6
3.3 New in Release 3.2.2	7
3.4 New in Release 3.0.1	7
3.5 New in Release 2.0	7
4 Installing the Oracle VM Paravirtual Drivers for Microsoft Windows	9
4.1 Configuring Policies for Device Installation	9
4.2 Installing Oracle VM Paravirtual Drivers for Microsoft Windows	9
4.3 Verifying the Oracle VM Paravirtual Drivers for Microsoft Windows Installation	12
4.4 Setting the MTU Size for Virtual Machines	13
5 Upgrading the Oracle VM Paravirtual Drivers for Microsoft Windows	15
6 Silently Installing or Upgrading the Oracle VM Paravirtual Drivers for Microsoft Windows	19
7 Uninstalling the Oracle VM Paravirtual Drivers for Microsoft Windows	21
8 Known Limitations and Workarounds	23
8.1 Security Alert for Unsigned Drivers	23
8.2 Microsoft Windows Upgrade Required Before Installation	24
8.3 Upgrading on Microsoft Windows 32-bit	24
8.4 Windows Guest Kernel Panic	24
8.5 Found New Hardware Wizard Displayed	24
8.6 Crash Dump or Hibernation Fails	25
Glossary	27

Preface

The Oracle VM Paravirtual Drivers for Microsoft Windows explains how to install, use, and troubleshoot the Oracle VM Paravirtual Drivers for Microsoft Windows.

Audience

This document is intended for users and administrators of Oracle VM guests running the Microsoft Windows™ operating system. It includes a brief introduction of the Oracle VM Paravirtual Drivers for Microsoft Windows, how to install them, and describes potential issues and the corresponding workarounds you may encounter while using the drivers.

Oracle recommends that you read this document before installing and using the Oracle VM Paravirtual Drivers for Microsoft Windows.

Related Documents

For more information, see the [Oracle VM Documentation](#).

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.
<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.

Documentation Accessibility

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

Access to Oracle Support

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

Chapter 1 Getting Started with the Oracle VM Paravirtual Drivers for Microsoft Windows

Table of Contents

1.1 Downloading the Oracle VM Paravirtual Drivers for Microsoft Windows 1

The Oracle VM Paravirtual Drivers for Microsoft Windows improve performance for network and block (disk) devices on Microsoft Windows™ [guests](#) running in a virtual environment on Oracle VM.

The Oracle VM Paravirtual Drivers for Microsoft Windows resolve common issues with Microsoft Windows guests, such as the following:

- Shutting down the guest does not shut down gracefully. Instead, it is the equivalent of turning the power off. In this case, if you are using the virtual machine console, the console would immediately turn to black instead of showing the shut down process.
- Restarting the virtual machine may display messages that the virtual machine was not properly shut down.
- Restarting the virtual machine requires disk checks and verification.



Important

Oracle Support require you to install the Oracle VM Paravirtual Drivers for Microsoft Windows before obtaining support for any issues on Microsoft Windows virtual machines.

1.1 Downloading the Oracle VM Paravirtual Drivers for Microsoft Windows

Download the Oracle VM Paravirtual Drivers for Microsoft Windows from:

https://updates.oracle.com/Orion/PatchDetails/process_form?patch_num=23346086

The Oracle VM Paravirtual Drivers for Microsoft Windows are included with the Oracle VM media pack. The Oracle VM Paravirtual Drivers for Microsoft Windows installer installs [paravirtualized](#) drivers for block (disk) and network devices.

Chapter 2 Supported Releases, Operating Systems, and Configuration Limits

Table of Contents

2.1 Supported Oracle VM Releases	3
2.2 Supported Guest Operating Systems	3
2.3 Microsoft Windows Compatibility Signing	4
2.4 Configuration Limits	4

Find out what Oracle VM releases are supported with the Oracle VM Paravirtual Drivers for Microsoft Windows in addition to the supported operating systems for each version of the Oracle VM Paravirtual Drivers for Microsoft Windows. Review information about Microsoft Windows compatibility signing. Get details on tested and recommended configuration limits for the Oracle VM Paravirtual Drivers for Microsoft Windows.

2.1 Supported Oracle VM Releases

The following table lists the supported Oracle VM releases for the Oracle VM Paravirtual Drivers for Microsoft Windows:

Table 2.1 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

2.2 Supported Guest Operating Systems

The following table lists the supported Microsoft Windows operating systems for the Oracle VM Paravirtual Drivers for Microsoft Windows:

Table 2.2 Microsoft Windows Supported Guest Operating Systems

Guest Operating System with Oracle VM Paravirtual Drivers for Microsoft Windows Installed	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
Microsoft Windows Server 2008 SP2	Yes	Yes

Guest Operating System with Oracle VM Paravirtual Drivers for Microsoft Windows Installed	64-bit	32-bit
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

2.3 Microsoft Windows Compatibility Signing

The Oracle VM Paravirtual Drivers for Microsoft Windows have not been signed by Microsoft for the Windows software logo program.

Because the Oracle VM Paravirtual Drivers for Microsoft Windows are not signed, Microsoft Windows does not recognize them as compatible and a security alert occurs during installation. See [Section 8.1, “Security Alert for Unsigned Drivers”](#).

Likewise, you cannot perform silent installations or upgrades unless the Oracle VM Paravirtual Drivers for Microsoft Windows have been signed by Microsoft. The Microsoft signing process prevents pop-up windows and notifications that are required to run the installation program silently.

2.4 Configuration Limits

The following table lists the tested and recommended maximum configuration limits for the Oracle VM Paravirtual Drivers for Microsoft Windows:

Table 2.3 Oracle VM Paravirtual Drivers for Microsoft Windows configuration maximums

Item	Maximum
Virtual CPUs	32
Virtual RAM on 32-bit guests	64 GB
Virtual RAM on 64-bit guests	256 GB
Virtual disks	40 The number of virtual disks includes the number of virtual NICs. See Note .
Virtual NICs	8 The number of virtual NICs are included in the number of virtual disks. See Note .



Note

The number of virtual disks includes the number of virtual NICs. If there are eight virtual NICs, only 32 virtual disks are supported. Virtual disks are assigned a higher priority than virtual NICs. If a virtual machine is configured with eight virtual NICs, and 35 virtual disks, then 35 disks are created, and five VNICS.

Chapter 3 What's New with the Oracle VM Paravirtual Drivers for Microsoft Windows?

Table of Contents

3.1 New in Release 3.4.1	5
3.2 New in Release 3.2.3	6
3.3 New in Release 3.2.2	7
3.4 New in Release 3.0.1	7
3.5 New in Release 2.0	7

Each release of the Oracle VM Paravirtual Drivers for Microsoft Windows includes bug fixes and new features. Find out what's new in each release of the Oracle VM Paravirtual Drivers for Microsoft Windows.

3.1 New in Release 3.4.1

Release 3.4.1 of the Oracle VM Paravirtual Drivers for Microsoft Windows introduces new features and enhancements along with a cumulative list of bug fixes.

New Features and Enhancements

Release 3.4.1 provides the following new features and enhancements:

- Oracle VM Paravirtual Drivers for Microsoft Windows now supports Microsoft Windows 10.
- As of this release, Oracle VM Paravirtual Drivers for Microsoft Windows provides informative notifications to help you troubleshoot common installation issues.
- Oracle VM Paravirtual Drivers for Microsoft Windows introduces multipage ring buffer support in this release.
- The Oracle VM Paravirtual Drivers for Microsoft Windows installation program now verifies that the guest operating system is supported. If a user attempts to install Oracle VM Paravirtual Drivers for Microsoft Windows on Microsoft Windows XP, or other operating system that is not supported, the installation program notifies the user.

Notable Bug Fixes

Release 3.4.1 provides a cumulative update of fixes, as follows:

- Microsoft Windows blue screen occurs during installation on Windows Server 2003 R2. **Bug 23232273**
- Windows blue screen occurs during the uninstallation process. **Bug 23198931**
- Windows blue screen occurs during the upgrade process. **Bug 22482031**
- Installer properties do not provide a build version. **Bug 23198943**
- Build number is not included as part of the release version. **Bug 22589921**
- Cannot create a dump file when Windows blue screen occurs. **Bug 23102589**
- Windows virtual machines reboots when using the lperf3 tool and the virtual machine MTU is set to 9000. **Bug 23032144**

- The Microsoft Windows device manager displays a black exclamation point (!) on a yellow field next to **Oracle VM Virtual Ethernet Adapter** after installation. **Bug 23022322**
- Low network throughput on Windows virtual machine. **Bug 22657587**
- Cannot dynamically access grant references for page ring order. **Bug 22518244**
- Virtual machine network TX performance issue when pinned to the NUMA node #0. **Bug 22342913**
- Virtual machines do not function as expected when using a Xen driver domain. **Bug 22243923**
- Windows domU behaves unexpectedly when using the lperf tool with the MTU set to 9000 in the ethernet adapter properties. **Bug 22203768**
- Network delays occur after installation. **Bug 22201572**
- Windows blue screen occurs when running network performance tests. **Bug 22058506**
- Windows guests do not inherit IP addresses after installation. **Bug 21845785**
- RDP communication does not function after installation on Windows Server 2012. **Bug 21803860**
- Network performance issues occur after installation. **Bug 21458061**
- Cannot communicate with Windows guests using RDP or the Oracle VM console, even though the guests are running. **Bug 21457678**
- The Xen VBD driver causes a Windows blue screen to occur when running network performance tests. **Bug 21373489**
- Running network performance testing with the MTU set to 9000 on a guest causes Windows blue screen to occur. **Bug 21303484**

3.2 New in Release 3.2.3

Release 3.2.3 provides a cumulative update of fixes, as follows:

- Fixes a BSOD issue when running a netperf test with 10 TCP streams from a remote Dom0 to a Microsoft Windows guest. **Bug 21302935**
- Modifies the Oracle VM service to remove spaces from the executable path name. **Bug 20863991**
- Fixes an issue to allow more than 1Gbps speeds on 10GBE links. **Bug 19833775**
- Fixes a issue where packet loss occurred when pinging some virtual machines. **Bug 19820063**
- Fixes an issue where the default policy on virtual disks was set to write-caching, which resulted in a loss of data integrity. **Bug 19452465**
- Fixes an issue where the network interface of the Windows guest was lost when an Oracle VM Server was upgraded to Release 3.3 in Cisco UCS server. **Bug 19449368**
- Fixes an issue where the current network interface settings are not applied during an installation of Oracle VM Paravirtual Drivers for Microsoft Windows. **Bug 18865098**
- Fixes an issue where it is not possible to format disks on a Windows virtual machine in some circumstances. **Bug 18707840**
- Fixes an issue where a system crash, or fatal system error, occurs when upgrading from a previous release of Oracle VM Paravirtual Drivers for Microsoft Windows. **Bug 18702781**

- Fixes performance degradation issues if more than 16 virtual CPUs (vCPU) are configured on some Windows guests. **Bug 18593684** and **Bug 18558015**
- Fixes an issue where a virtual disk provisioning failure occurs if the virtual disk is greater than 1TB. **Bug 18553901**
- Fixes an issue where a system crash, or fatal system error, occurs on a 32-bit Windows operating system. **Bug 18361346**

3.3 New in Release 3.2.2

The new features and enhancements in Release 3.2.2 include additional support for the following new guest operating systems:

- Microsoft Windows Server 2012 R2
- Microsoft Windows Server 2012
- Microsoft Windows 8.1
- Microsoft Windows 8

The following maximum limit configurations have been tested with the Oracle VM Paravirtual Drivers for Microsoft Windows:

- Maximum number of virtual CPUs: 32
- Maximum RAM per 32-bit guest: 64 GB
- Maximum RAM per 64-bit guest: 256 GB

3.4 New in Release 3.0.1

Release 3.0.1 includes support for the Storport miniport driver, which delivers improved performance compared to the SCSI port driver.

3.5 New in Release 2.0

For details about new features and content in the 2.0 release, see the *Oracle VM Windows Paravirtual (PV) Drivers 2.0: New Features* document at:

<http://www.oracle.com/us/technologies/virtualization/oraclevm/winpv20-newfeatures-wp-080929.pdf>

Chapter 4 Installing the Oracle VM Paravirtual Drivers for Microsoft Windows

Table of Contents

4.1 Configuring Policies for Device Installation	9
4.2 Installing Oracle VM Paravirtual Drivers for Microsoft Windows	9
4.3 Verifying the Oracle VM Paravirtual Drivers for Microsoft Windows Installation	12
4.4 Setting the MTU Size for Virtual Machines	13

Installing the Oracle VM Paravirtual Drivers for Microsoft Windows involves configuring Microsoft Windows policies, running the installation program, and then verifying the installation.

4.1 Configuring Policies for Device Installation

You must configure Microsoft Windows policies to allow the installation of the Oracle VM Paravirtual Drivers for Microsoft Windows, if these policies are not already configured. This task prevents the following error during installation: `The installation of this device is forbidden by system policy. Contact your system administrator.`

To configure policies for installation, do the following:

1. Open the Microsoft Windows virtual machine on which you want to install the Oracle VM Paravirtual Drivers for Microsoft Windows.
2. From the **Start menu**, select **Run**.
3. Enter `gpedit.msc` and then click **OK**.

The **Local Group Policy Editor** displays.

4. From the **Console Tree**, expand **Computer Configuration** then **Administrative Templates** then **System** then **Device Installation** and then select **Device Installation Restrictions**.

The list of device installation restrictions displays.

5. Edit policy settings so that no device installation restrictions are configured.

Alternatively, review each policy setting to determine the correct configuration for your business needs.

6. Exit the **Local Group Policy Editor**.
7. Restart the Microsoft Windows virtual machine.

When you are finished configuring the policy settings for device installation, you can proceed with the installation of the Oracle VM Paravirtual Drivers for Microsoft Windows.

4.2 Installing Oracle VM Paravirtual Drivers for Microsoft Windows

Before You Begin. Do the following before you start the installation process:

- Review the list of supported Microsoft Windows operating systems. See [Section 2.2, “Supported Guest Operating Systems”](#).

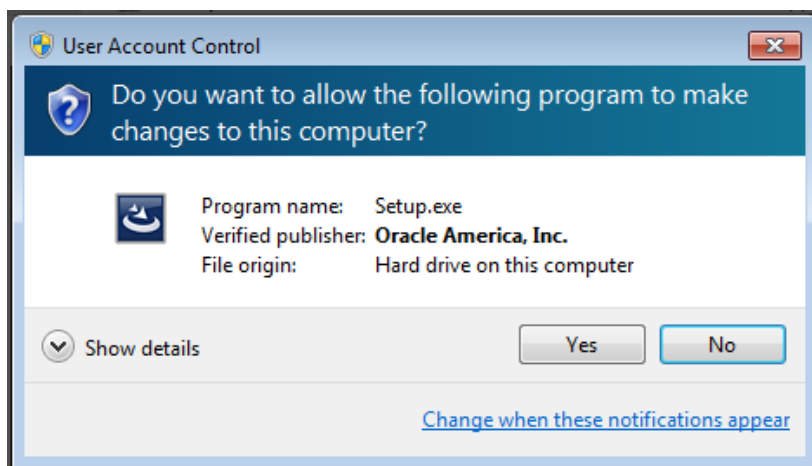
- Configure system policies to allow the installation. See [Section 4.1, “Configuring Policies for Device Installation”](#).

You can install the Oracle VM Paravirtual Drivers for Microsoft Windows using the graphical installation program or by performing a silent installation. You should use the graphical installation program if you are installing a single instance of the Oracle VM Paravirtual Drivers for Microsoft Windows. If you plan to silently install multiple instances of the Oracle VM Paravirtual Drivers for Microsoft Windows, you must run the graphical installation program in a command line window on at least one Microsoft Windows guest to create a response file. You can then use the response file to perform all subsequent installations silently.

To install the Oracle VM Paravirtual Drivers for Microsoft Windows, do the following:

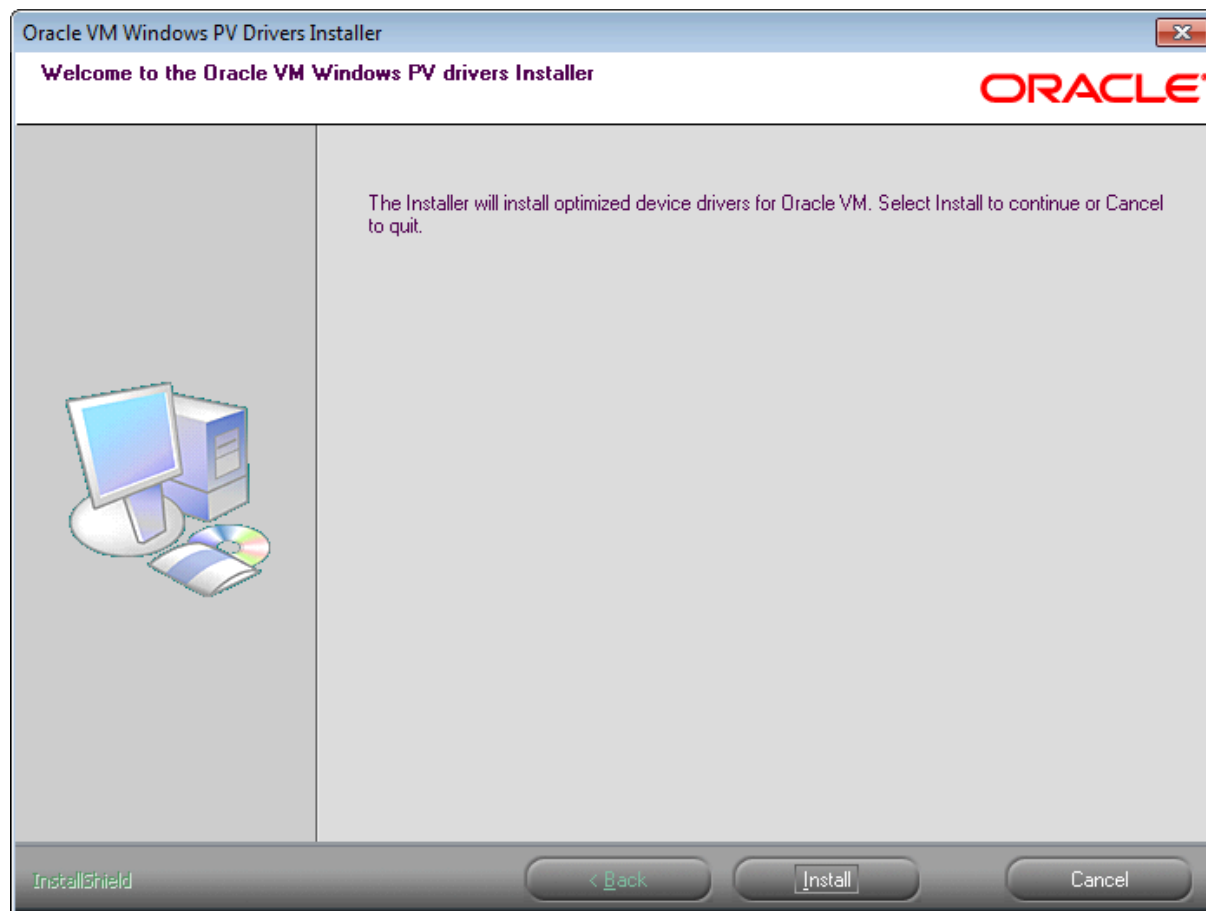
1. Create a new virtual machine and install a supported operating system.
2. Copy the Oracle VM Paravirtual Drivers for Microsoft Windows installation program, [Setup.exe](#), to the guest.
3. Do one of the following:
 - Double click [Setup.exe](#) to start the Oracle VM Paravirtual Drivers for Microsoft Windows installer.
 - Open a command line window and then:
 - a. Navigate to the directory where the [Setup.exe](#) file is located.
 - b. Run [Setup.exe -r](#) to start the Oracle VM Paravirtual Drivers for Microsoft Windows installer and create a response file for silent installations.
4. If prompted, select **Yes** in the **User Account Control** dialog to allow the Oracle VM Paravirtual Drivers for Microsoft Windows installer to proceed.

Figure 4.1 Oracle VM Paravirtual Drivers for Microsoft Windows user account control dialog



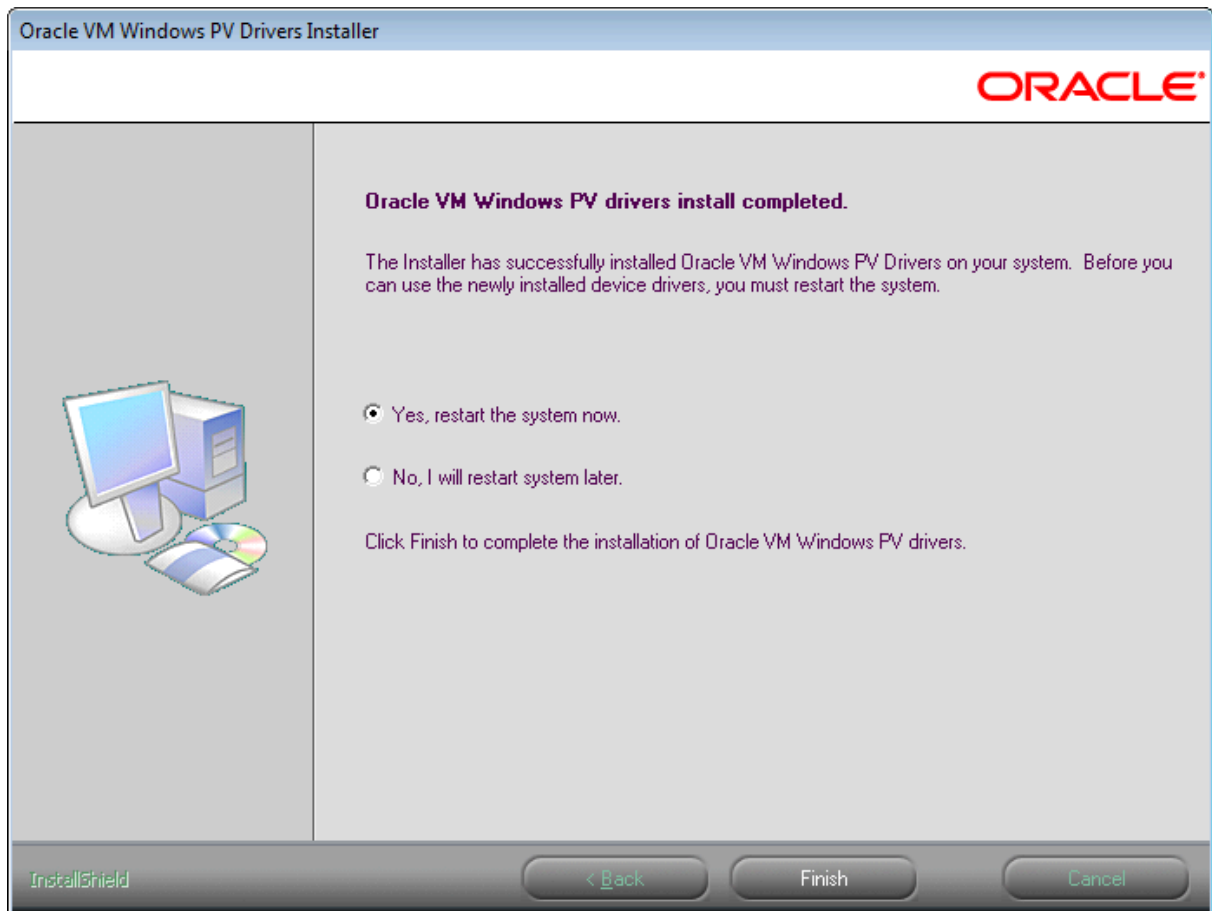
The initial installer window is displayed.

Figure 4.2 Oracle VM Paravirtual Drivers for Microsoft Windows installer window



5. Click **Install** to start the Oracle VM Paravirtual Drivers for Microsoft Windows installation.

The installer copies the Oracle VM Paravirtual Drivers for Microsoft Windows files, and installs the drivers on the guest. The **Installation Complete** window is displayed.

Figure 4.3 Installation Complete window

6. Check **Yes, restart the system now** and click **Finish**. The virtual machine is restarted.

If you used the `-r` option in the command line, the installation program creates a response file in the `C:\Windows` directory. You then use the response file, `setup.iss`, to perform silent installations on other Microsoft Windows guests. See [Chapter 6, *Silently Installing or Upgrading the Oracle VM Paravirtual Drivers for Microsoft Windows*](#).

4.3 Verifying the Oracle VM Paravirtual Drivers for Microsoft Windows Installation

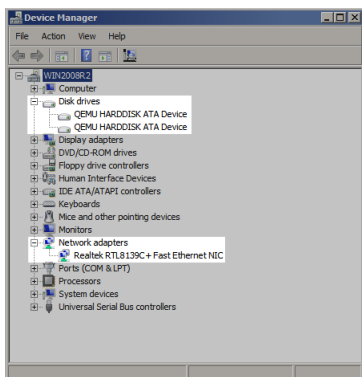
To verify the Oracle VM Paravirtual Drivers for Microsoft Windows installed successfully, do the following:

1. Open the Microsoft Windows virtual machine on which you installed the Oracle VM Paravirtual Drivers for Microsoft Windows.
2. Open the control panel and then locate and open the **Device Manager** window.
3. Expand **Disk drives** and verify that the following entry exists: `Oracle VM Virtual SCSI Disk Device`.
4. Expand **Network adapters** and verify that the following entry exists: `Oracle VM Virtual Ethernet Adpater`.

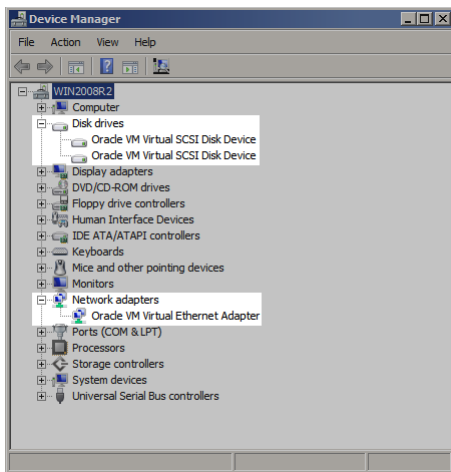
If both device entries exist, and do not have any device issue symbols next to them, then the Oracle VM Paravirtual Drivers for Microsoft Windows are installed successfully.

If a device issue symbol, such as a black exclamation mark on a yellow field, displays next to either device, you should attempt to reinstall the Oracle VM Paravirtual Drivers for Microsoft Windows. If the device issue symbol displays next to the device after you reinstall, either refer to the appropriate Microsoft Windows documentation for troubleshooting procedures or contact Oracle support.

The following image is an example of device drivers before installing the Oracle VM Paravirtual Drivers for Microsoft Windows:



The following image is an example of device drivers after successfully installing the Oracle VM Paravirtual Drivers for Microsoft Windows:



4.4 Setting the MTU Size for Virtual Machines

The Oracle VM Paravirtual Drivers for Microsoft Windows override the maximum transmission unit (MTU) settings in the virtual network adapters for Microsoft Windows virtual machines. After you successfully install and verify the Oracle VM Paravirtual Drivers for Microsoft Windows, you should set the MTU for each guest virtual machine.

To set the MTU size for a virtual machine, do the following:

1. Open the Microsoft Windows virtual machine.
2. Open the control panel and then locate and open the **Device Manager** window.
3. Expand **Network adapters** and select the appropriate [Oracle VM Virtual Ethernet Adapter](#).

4. Right-click the adapter, select **Properties**, and then select the **Advanced** tab.
5. Select the **MTU** property and set the value as appropriate. Click **OK** to save your changes.

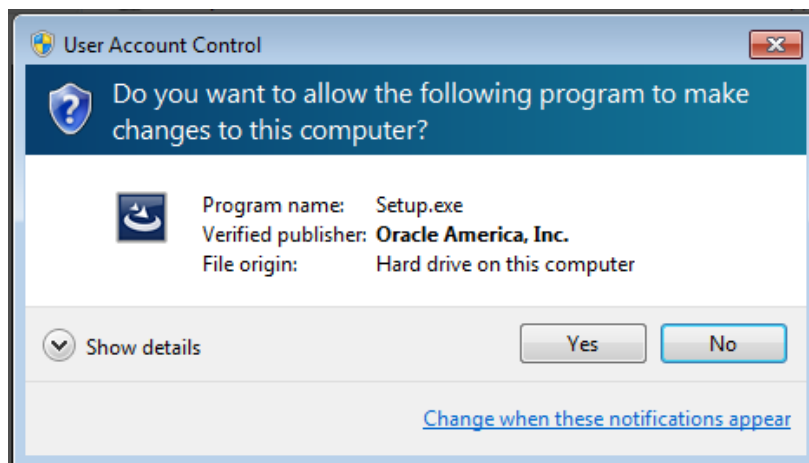
Chapter 5 Upgrading the Oracle VM Paravirtual Drivers for Microsoft Windows

You can upgrade an existing installation of the Oracle VM Paravirtual Drivers for Microsoft Windows using the graphical installation program or by performing a silent upgrade. You should use the graphical installation program if you are upgrading a single instance of the Oracle VM Paravirtual Drivers for Microsoft Windows. If you plan to silently upgrade multiple instances of the Oracle VM Paravirtual Drivers for Microsoft Windows, you must run the graphical installation program in a command line window on at least one Microsoft Windows guest to create a response file. You can then use the response file to perform all subsequent upgrades silently.

To upgrade the Oracle VM Paravirtual Drivers for Microsoft Windows, do the following:

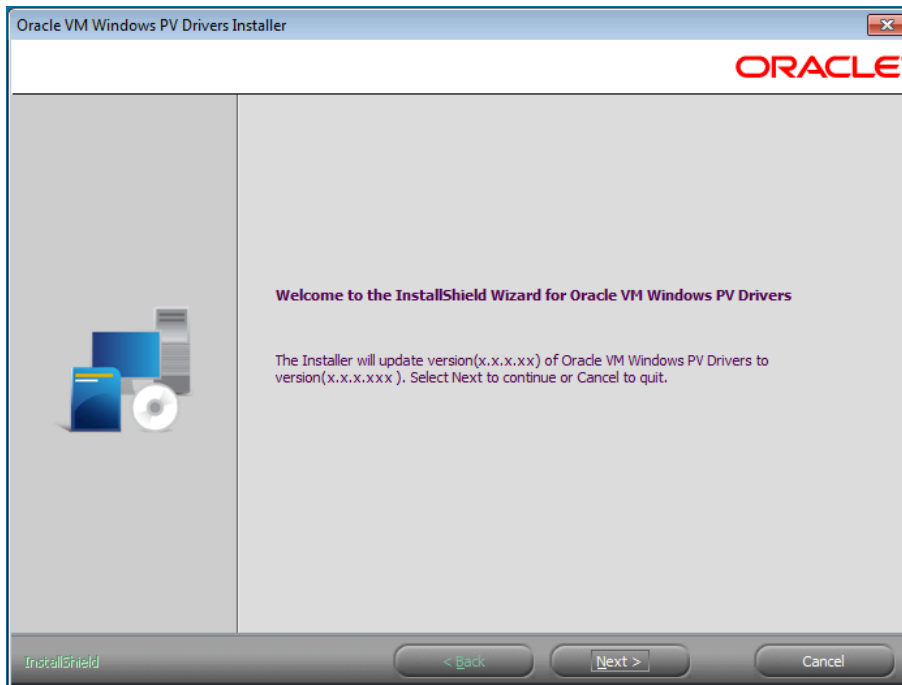
1. Copy the Oracle VM Paravirtual Drivers for Microsoft Windows installation program, `Setup.exe`, to the guest.
2. Do one of the following:
 - Double click `Setup.exe` to begin the upgrade.
 - Open a command line window and then:
 - a. Navigate to the directory where the `Setup.exe` file is located.
 - b. Run `Setup.exe -r` to begin the upgrade and create a response file for silent installations.
3. If prompted, select **Yes** in the **User Account Control** dialog to allow the Oracle VM Paravirtual Drivers for Microsoft Windows installer to proceed.

Figure 5.1 Oracle VM Paravirtual Drivers for Microsoft Windows user account control dialog



The initial upgrade window is displayed.

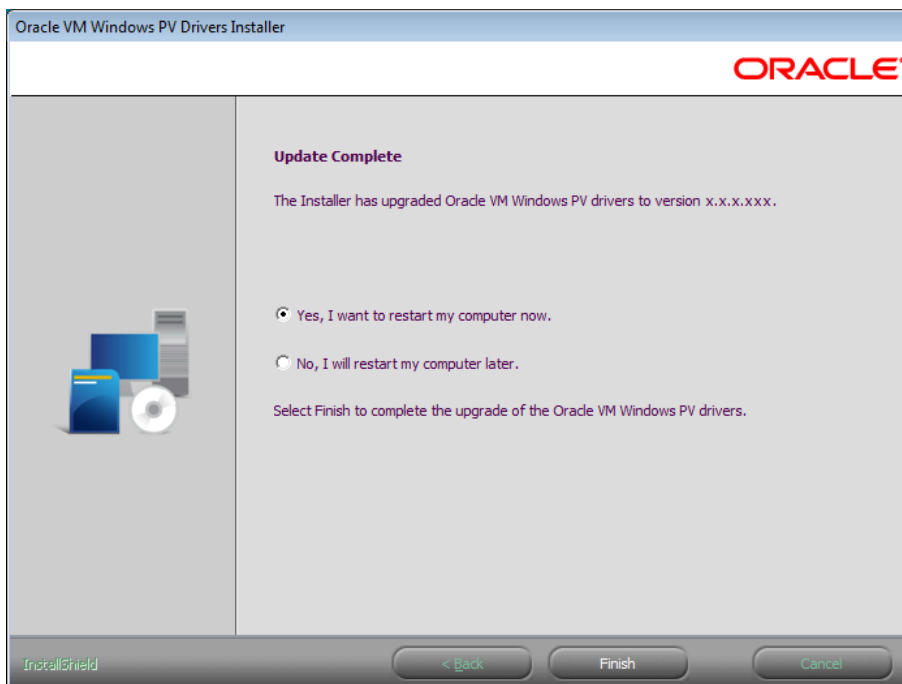
Figure 5.2 Oracle VM Paravirtual Drivers for Microsoft Windows installer window



4. Click **Next** to start the upgrade.

The installation program then copies new versions of the Oracle VM Paravirtual Drivers for Microsoft Windows to the system and updates the installed drivers. The **Update Complete** window is displayed.

Figure 5.3 Update Complete window



5. Check **Yes, I want to restart the system now** and then click **Finish**. The virtual machine is restarted.

If you used the `-r` option in the command line, the installation program creates a response file in the `C:\Windows` directory. You then use the response file, `setup.iss`, to perform silent upgrades on other Microsoft Windows guests. See [Chapter 6, *Silently Installing or Upgrading the Oracle VM Paravirtual Drivers for Microsoft Windows*](#).

Chapter 6 Silently Installing or Upgrading the Oracle VM Paravirtual Drivers for Microsoft Windows

You can use a response file that you create with the graphical installation program to silently install or upgrade the Oracle VM Paravirtual Drivers for Microsoft Windows. The response file provides the prompts that the installation program requires to successfully install or upgrade the Oracle VM Paravirtual Drivers for Microsoft Windows.



Important

- Oracle VM Paravirtual Drivers for Microsoft Windows must be signed by Microsoft to perform a silent installation or upgrade. See [Section 2.3, “Microsoft Windows Compatibility Signing”](#).
- You can perform a silent installation or upgrade only on 64-bit versions of Microsoft Windows later than Windows Vista. You cannot perform a silent installation or upgrade on any 32-bit version of Microsoft Windows or Microsoft Windows 2003 (32-bit or 64-bit).

Before You Begin. Complete at least one installation or upgrade of the Oracle VM Paravirtual Drivers for Microsoft Windows using the graphical installation program to create a response file. See [Section 4.2, “Installing Oracle VM Paravirtual Drivers for Microsoft Windows”](#) or [Chapter 5, *Upgrading the Oracle VM Paravirtual Drivers for Microsoft Windows*](#).

To install or upgrade the Oracle VM Paravirtual Drivers for Microsoft Windows silently, do the following:

1. Locate the response file, `setup.iss`, in the `C:\Windows` directory on the filesystem of the computer where you ran the graphical installation program.
2. Copy `setup.iss` to the same directory as the Oracle VM Paravirtual Drivers for Microsoft Windows installation program. Alternatively you can specify the location of the response file at the command line.
3. Open a command line window.
4. Run `Setup.exe -s` to silently install or upgrade the Oracle VM Paravirtual Drivers for Microsoft Windows with the response file.

You can include the following options at the command line:

- `-f1c:path\to\setup.iss` to specify the location of `setup.iss`. For example, `Setup.exe -s -f1c:\Users\Username\setup.iss`.
- `-f2c:path\to\setup.log` to specify the location of `setup.log`. By default, log files are written to the `C:\Windows` directory. For example, `Setup.exe -s -f2c:\Users\Username\setup.log`.

Chapter 7 Uninstalling the Oracle VM Paravirtual Drivers for Microsoft Windows

You can uninstall the Oracle VM Paravirtual Drivers for Microsoft Windows through the Microsoft Windows control panel or by running the installation program that you used to install the Oracle VM Paravirtual Drivers for Microsoft Windows.

To uninstall through the Microsoft Windows control panel, do the following:

1. Open the control panel and navigate to the **Uninstall or change a program** section. Note that the name of this section might be different, depending on your version of Microsoft Windows.
2. Locate and select **Oracle VM Windows PV Drivers**.
3. Right-click and select **Uninstall**.

The installation program starts and prompts you to confirm the uninstallation.

4. Select **Yes** when prompted to remove the application.

The installation program removes the Oracle VM Paravirtual Drivers for Microsoft Windows and deletes the binaries from your system.

5. When prompted, select **Yes, restart the system** and then click **Finish** to complete the uninstallation.

To uninstall with the installation program, do the following:

1. Double click [Setup.exe](#) to start the Oracle VM Paravirtual Drivers for Microsoft Windows installer.

The installation program starts and prompts you to modify the current installation.

2. Select **Remove** and then click **Next**.

The installation program removes the Oracle VM Paravirtual Drivers for Microsoft Windows and deletes the binaries from your system.

3. When prompted, select **Yes, restart the system** and then click **Finish** to complete the uninstallation.

Chapter 8 Known Limitations and Workarounds

Table of Contents

8.1 Security Alert for Unsigned Drivers	23
8.2 Microsoft Windows Upgrade Required Before Installation	24
8.3 Upgrading on Microsoft Windows 32-bit	24
8.4 Windows Guest Kernel Panic	24
8.5 Found New Hardware Wizard Displayed	24
8.6 Crash Dump or Hibernation Fails	25

This section contains information on known limitations and workarounds for the Oracle VM Paravirtual Drivers for Microsoft Windows.

8.1 Security Alert for Unsigned Drivers

- The Oracle VM Paravirtual Drivers for Microsoft Windows Release 3.4.1 are not signed by Microsoft for the Windows software logo program.
- The Oracle VM Paravirtual Drivers for Microsoft Windows Release 3.2.3 are not signed for 32-bit Microsoft Windows operating systems or Microsoft Windows Server 2003.

Because the Oracle VM Paravirtual Drivers for Microsoft Windows are not signed by Microsoft, the following security alert displays during installation:



To continue the installation, click **Yes** and then click **Continue Anyway** when the following screen displays:



Bug 18361346

8.2 Microsoft Windows Upgrade Required Before Installation

Running the Oracle VM Paravirtual Drivers for Microsoft Windows installation program causes a system error that prevents user login after the system restarts.

This issue occurs on Microsoft Windows Server 2008 Service Pack 2, 64-bit version, and Microsoft Windows Server 2008 R2.

This issue occurs only for the Oracle VM Paravirtual Drivers for Microsoft Windows that are not signed by Microsoft.

Workaround: Upgrade the system using the Windows upgrade program before you install the Oracle VM Paravirtual Drivers for Microsoft Windows.

Bug 23296057

8.3 Upgrading on Microsoft Windows 32-bit

Upgrading from Oracle VM Paravirtual Drivers for Microsoft Windows Release 3.2.2 to Release 3.2.3, and then uninstalling Release 3.2.3, might cause a fatal system error. This issue might occur on some Microsoft Windows 32-bit versions, such as Microsoft Windows 2008 SP2, Microsoft Windows 7, and Microsoft Windows 8.1.

Workarounds:

- Uninstall Oracle VM Paravirtual Drivers for Microsoft Windows Release 3.2.2 before you install Release 3.2.3.
- If you encounter this issue, restart the system and then use the Oracle VM Paravirtual Drivers for Microsoft Windows Release 3.2.3 installation program to completely uninstall Release 3.2.3. You should then uninstall Oracle VM Paravirtual Drivers for Microsoft Windows Release 3.2.2 before installing Release 3.2.3.

8.4 Windows Guest Kernel Panic

Windows guests may experience kernel panic when the virtual machine is stopped and started several times. This may also occur if there is intensive I/O. The error in this case is:

```
(XEN) p2m_pod_demand_populate: Out of populate-on-demand memory!
```

Workaround: Set the **Maximum Memory** and the **Memory** fields to the same value in the **Create/Edit Virtual Machine** wizard in [Oracle VM Manager](#).

Bug 10334923

8.5 Found New Hardware Wizard Displayed

During the installation or uninstallation of the Oracle VM Paravirtual Drivers for Microsoft Windows, the **Found New Hardware** wizard is displayed during the installation/uninstallation, and when the guest restarts. This only occurs on a guest with Microsoft Windows Server 2003 (32- or 64-bit) installed.

Workaround: Click **Cancel** to ignore the message and close the dialog box.

8.6 Crash Dump or Hibernation Fails

The stop error `0x000000D1` may occur when doing a crash dump or hibernation. This only occurs when using the Oracle VM Paravirtual Drivers for Microsoft Windows Release 3.0.1 on Microsoft Windows Server 2008 R2, Microsoft Windows Server 2008, and Microsoft Windows Vista or Microsoft Windows 7.

Workaround: Download and install the Microsoft hotfix:

<http://support.microsoft.com/kb/2320550/>

Glossary

D

dom0

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

domU

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

G

guest

A guest operating system that runs within a domain in Oracle VM Server. A guest may be paravirtualized or hardware virtualized. Multiple guests can run on the same Oracle VM Server.

O

Oracle VM Manager

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

P

paravirtualized machine (PVM)

A virtual machine with a kernel that is recompiled to be made aware of the virtual environment. Runs at near native speed, with memory, disk and network access optimized for maximum performance.

Paravirtualized guests use generic, idealized device drivers, which are part of the guest's OS. The I/O operations using these generic device drivers are mapped to the real device drivers in dom0. The generic, abstracted drivers in the guest seldom change and provide excellent guest stability. The dom0 domain, alternatively, can use the native hardware vendor drivers, and the guests can safely migrate to another dom0 with slightly different drivers.

For other resources such as CPU and memory, paravirtualized kernels make special "hypercalls" to the Xen hypervisor. These hypercalls provide better performance by reducing the number of instructions and context switches required to handle an incoming request. By contrast, on an emulated (hardware virtualized) guest, driver requests engage the guest's interrupt handler, increasing the I/O operation overhead.

