
Oracle® VM

Paravirtual Drivers Installation Guide for Microsoft Windows for Release 3.1.1

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Abstract

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 Windows paravirtual (PV) drivers, 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 Windows PV drivers for Oracle VM.

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1. Overview of the Windows Paravirtual Drivers

The Windows PV drivers for Oracle VM provide a performance boost for network and block (disk) devices on Microsoft Windows guests running in a virtual environment on Oracle VM.

Download the Windows PV drivers from:

<http://edelivery.oracle.com/oraclevm>

The Windows PV drivers installer installs paravirtualized drivers for block (disk) and network devices.

2. What's New in Windows Paravirtual Drivers?

The new features and enhancements in Release 3.1.1 include:

- Support for Storport miniport driver, which delivers improved performance compared to SCSI port driver.
- For features introduced in the previous 2.0 release, see the Oracle VM Windows Paravirtual (PV) Drivers 2.0: New Features whitepaper at: <http://www.oracle.com/us/technologies/virtualization/oraclevm/winpv20-newfeatures-wp-080929.pdf>

3. Supported Oracle VM Releases

The Windows PV drivers are supported in the following configurations:

Table 1. Support Matrix of Windows PV Drivers on Oracle VM Releases

Oracle VM Release	Windows PV Driver 1.0.8	Windows PV Driver 1.0.11	Windows PV Driver 2.0.7	Windows PV Driver 3.0.1
Oracle VM 2.1.5	Yes	Yes	No	No
Oracle VM 2.2.0	Yes	Yes	No	No
Oracle VM 2.2.1	No	Yes	Yes	No
Oracle VM 2.2.2	No	Yes	Yes	No
Oracle VM 3.0.1	No	No	Yes	Yes
Oracle VM 3.0.2	No	No	Yes	Yes
Oracle VM 3.0.3	No	No	Yes	Yes
Oracle VM 3.1.1	No	No	Yes	Yes

4. Supported Guest Operating Systems

The Windows PV drivers are supported on the following Microsoft Windows operating systems:

Table 2. Supported Guest Operating Systems

Guest Operating System	X86 (32-bit)	X64 (64-bit)
Microsoft Windows Server 2003 R2 SP2	Yes	Yes
Microsoft Windows Server 2008 SP2	Yes	Yes
Microsoft Windows Server 2008 R2 SP1	N/A	Yes
Microsoft Windows 7 SP1	Yes	Yes
Microsoft Windows Vista SP2	Yes	Yes
Microsoft Windows XP SP3	Yes	Yes

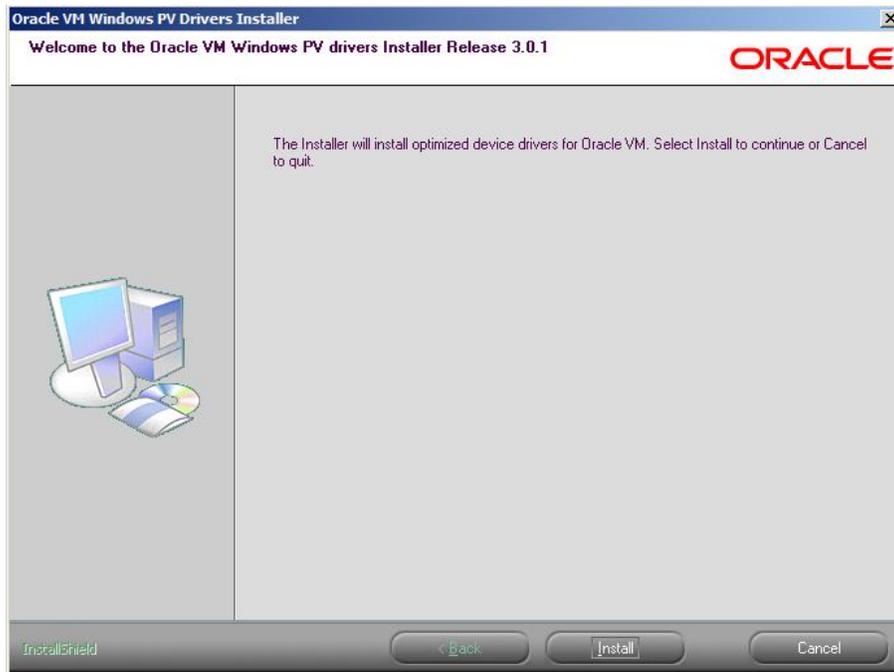
5. Installing the Windows PV Drivers

There are two procedures for installing the Windows PV drivers, depending on the guest's operating system.

5.1. Installing Windows PV Drivers on Windows XP and Windows Server 2003

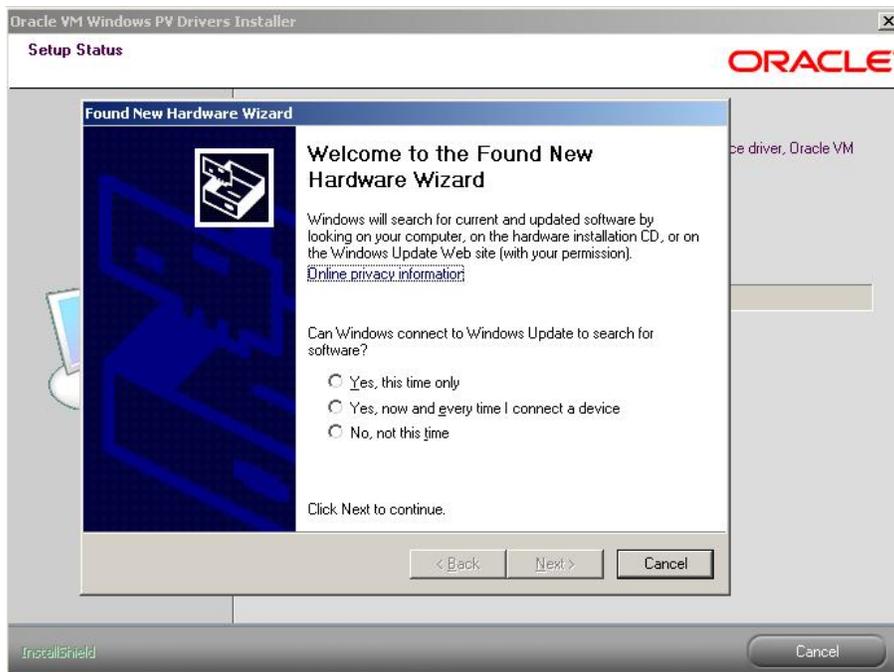
To install the Windows PV drivers:

1. Create a new guest with one of the following operating systems installed:
 - Windows Server 2003 (X86 or X64)
 - Windows XP (X86 or X64)
2. Copy the Windows PV drivers (Setup.exe) to the guest.
3. Double click the **Setup.exe** file to start the Windows PV drivers installer. The Start Install window is displayed.

Figure 1. Start install window

The installer prompts you to start the install. Click **Install** to start the Windows PV drivers installation. The installer copies files to the guest and installs the Windows PV drivers.

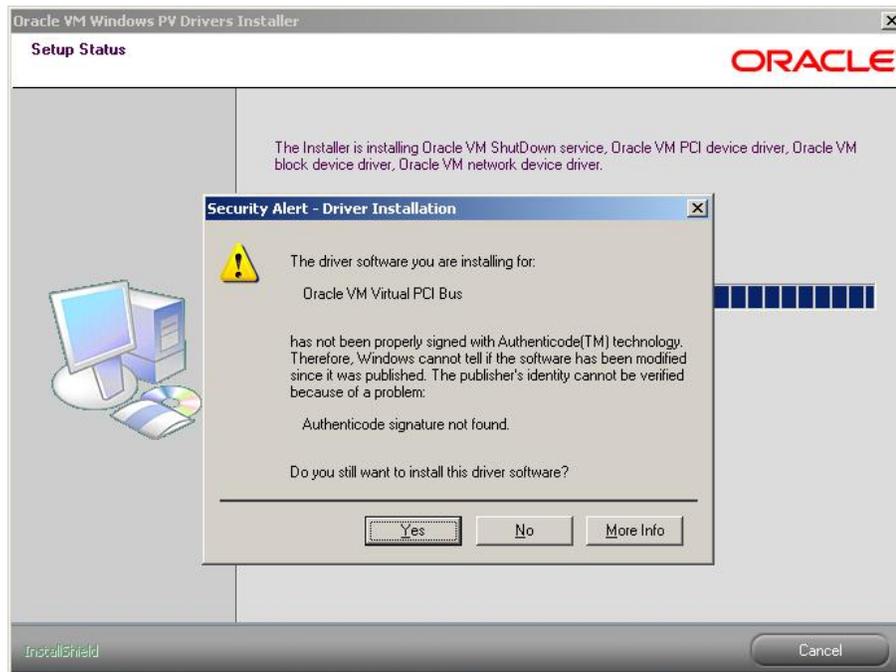
4. Due to a known issue, on some operating systems the Found New Hardware Wizard is displayed behind the Windows PV drivers Installer window.

Figure 2. Found New Hardware Wizard

Click **Cancel** to ignore the wizard.

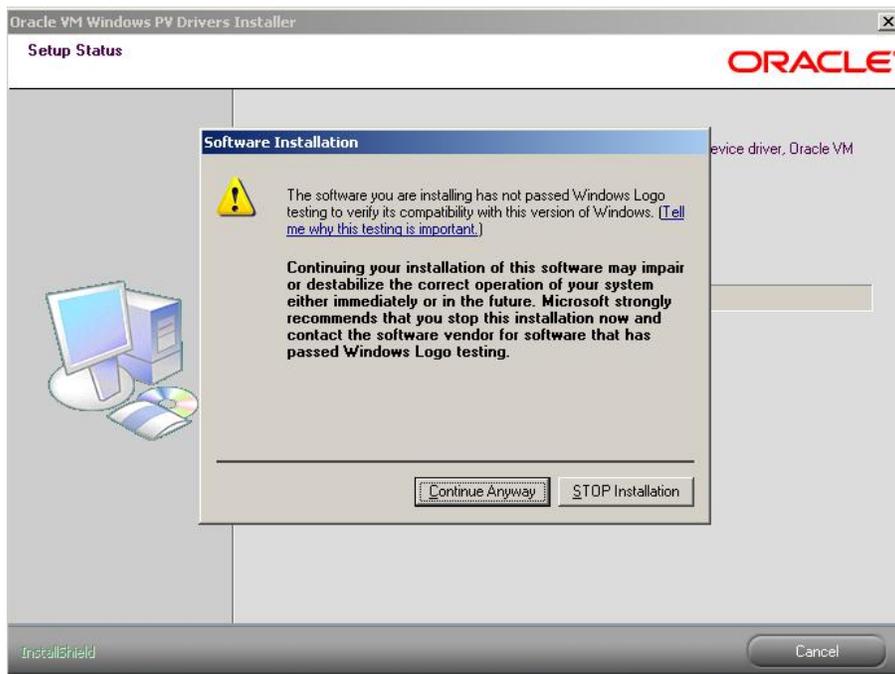
5. Due to a known issue, the Software Installation window is displayed warning the driver has not been signed by Microsoft.

Figure 3. Driver Installation window



Click **Yes**.

Figure 4. Software Installation window



Click **Continue Anyway**.

6. You are prompted to restart the guest.

Figure 5. Installation complete window



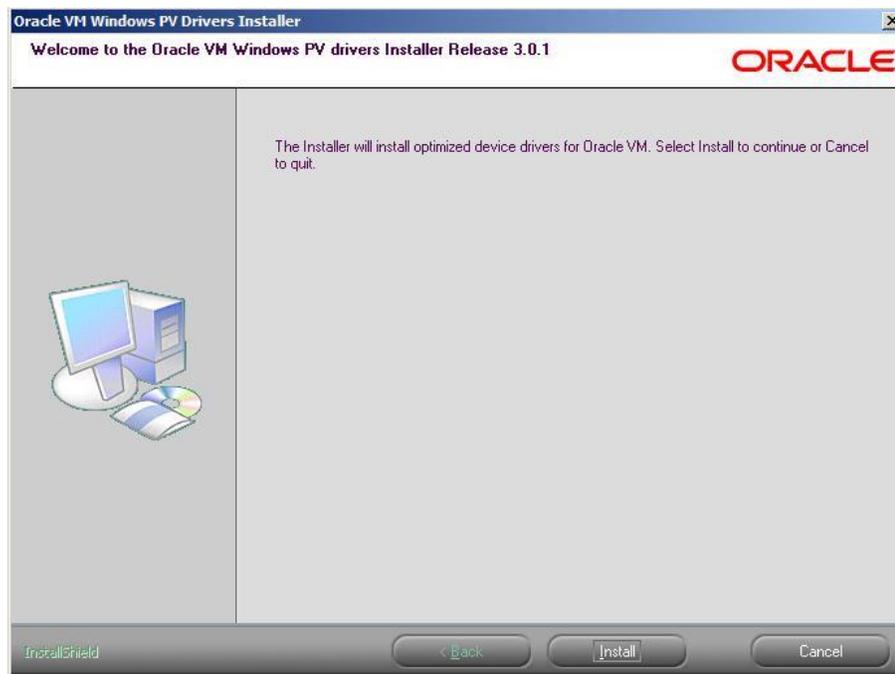
Check **Yes, restart the system now** and click **Finish**. The guest is restarted.

5.2. Installing Windows PV Drivers on Windows Server 2008, Windows Server 2008 R2, Windows Vista, and Windows 7

To install the Windows PV drivers:

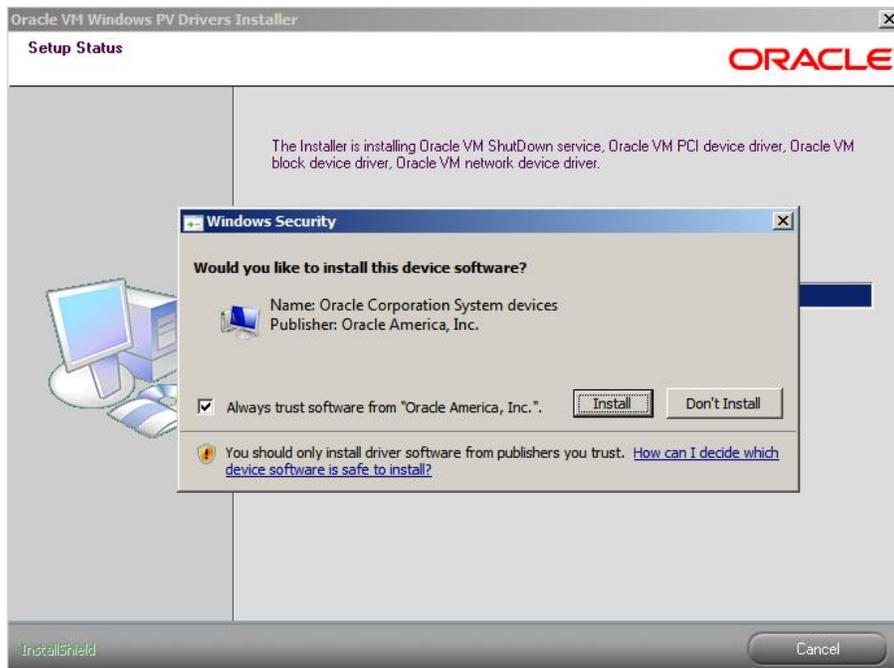
1. Create a new guest with one of the following operating systems installed:
 - Windows Server 2008 (X86 or X64)
 - Windows Server 2008 R2 (X64)
 - Windows Vista (X86 or X64)
 - Windows 7 (X86 or X64)
2. Copy the Windows PV drivers (Setup.exe) to the guest.
3. Double click the **Setup.exe** file to start the Windows PV drivers installer. The Start Install window is displayed.

Figure 6. Start install window



The installer prompts you to start the install. Click **Install** to start the Windows PV drivers installation. The installer copies files to the guest and installs the Windows PV drivers.

4. The Windows Security window is displayed and prompts you to confirm the installation of the paravirtual device drivers and trust the certificate from Oracle.

Figure 7. Windows Security window

Check **Always trust software from "Oracle America, Inc."** and select **Install**.

5. The installer copies the Windows PV drivers files, and installs the drivers in the guest. The Installation Complete window is displayed.

Figure 8. Installation Complete window

Check **Yes**, **restart the system now** and click **Finish**. The guest is restarted.

6. Known Limitations and Workarounds

This section contains information on known limitations and workarounds for the Windows PV drivers.

6.1. 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.

6.2. Found New Hardware Window Displayed During Installation or Uninstallation

During the installation or uninstallation of the Windows PV drivers, the Found New Hardware window is displayed when the guest restarts.

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

6.3. Guest Cannot Use More Than Eight vCPUs

If you use the Windows PV drivers, the maximum number of virtual CPUs (vCPUs) is eight.

6.4. Crash Dump and Hibernation Fails on Windows Server 2008 R2, Windows Server 2008, and Windows Vista or Windows 7

To avoid the stop error "0x000000D1" when doing crash dump and hibernation on Windows Server 2008 R2, Windows Server 2008, and Windows Vista or Windows 7, download and install this Microsoft hotfix from: <http://support.microsoft.com/kb/2320550/>.

6.5. Network Performance Issues

Network performance issues may be experienced with Windows PV drivers Release 2.0.7 on Oracle VM Release 3.0.x. To improve network performance, use Windows PV drivers Release 3.0.1.

Workaround: Disable Large Send Offload support for all network cards available in the Windows virtual machine. Follow these steps to disable Large Send Offload:

1. Open **Device Manager**.
2. Open **Network Adapters**, right-click the Oracle VM Virtual Ethernet adapter and select **Properties**.
3. Select the **Advanced** tab.
4. Select Large Send Offload in the **Property** field, select Disabled in the **Value** field, and then click **OK**. The network card will restart automatically and network performance should improve.

7. Documentation Accessibility

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