Novell SUSE® Linux Enterprise Virtual Machine Driver Pack

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September 10, 2007

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SUSE DRIVERS FOR WINDOWS* ON XEN*

Novell®

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Novell, Inc.
404 Wyman Street, Suite 500
Waltham, MA 02451
U.S.A.
www.novell.com

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About This Guide

This documentation describes how to install the SUSE® Linux Enterprise Virtual Machine Driver Pack on existing systems running Novell® SUSE Linux virtualization technology. It contains the following section:

- Chapter 1, “Virtual Machine Driver Pack for Windows,” on page 9

Audience

This documentation is intended for computer users who need to set up and manage virtual machines hosted on a virtualization host server. It is intended to aid the experienced Linux* or Windows* system administrator who is already somewhat familiar with virtualization technology and data center operations.

Feedback

We want to hear your comments and suggestions about this manual and the other documentation included with this product. Please use the User Comments feature at the bottom of each page of the online documentation, or go to www.novell.com/documentation/feedback.html and enter your comments there.

Documentation Updates

For the most recent version of the *SUSE Drivers for Windows On Xen Guide*, visit the Novell Virtualization Technology Web site (http://www.novell.com/documentation/vmserver/).

Additional Documentation

For additional documentation about virtualization on Novell products, see the Novell Virtualization Technology Web site (http://www.novell.com/documentation/vmserver/).

Documentation Conventions

In Novell documentation, a greater-than symbol (>) is used to separate actions within a step and items in a cross-reference path.

A trademark symbol (®, ™, etc.) denotes a Novell trademark. An asterisk (*) denotes a third-party trademark.

This document uses forward slashes for path delimiters.

Virtual Machine Driver Pack for Windows

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This section contains the following topics:

- Section 1.1, “Introduction,” on page 9
- Section 1.2, “Best Practices,” on page 10
- Section 1.3, “Installing the Virtual Machine Host,” on page 10
- Section 1.4, “Buying a Support Subscription,” on page 10
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- Section 1.7, “Upgrading the Driver Pack,” on page 18
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- Section 1.10, “Security Information,” on page 19

1.1 Introduction

SUSE® Linux Enterprise Virtual Machine Driver Pack contains disk and network device drivers for a number of third-party operating systems in order to enable the high-performance hosting of these unmodified guest operating systems on top of SUSE Linux Enterprise Server 10 (SLES 10) SP1. The guest operating systems supported by this driver pack are:

- Windows Server* 2003
- Windows XP
- Windows 2000 Server
- Red Hat* Enterprise Linux*4
- Red Hat Enterprise Linux 5

Virtualization allows the consolidation of Windows workloads on newer, more powerful, energy-efficient hardware. Paravirtualized operating systems such as SUSE Linux Enterprise Server are aware of the underlying virtualization platform, and can therefore interact efficiently with it. Unmodified operating systems such as Windows are unaware of the virtualization platform and expect to interact directly with the hardware. Because this is not possible when consolidating servers, the hardware must be emulated for the operating system. Emulation can be slow, but it is especially troubling for high-throughput disk and network subsystems. Most performance loss occurs in this area.

The device drivers in SUSE Linux Enterprise Virtual Machine Driver Pack bring many of the performance advantages of paravirtualized operating systems to unmodified operating systems because only the paravirtualized device driver (not the rest of the operating system) is aware of the virtualization platform. For example, a paravirtualized disk device driver appears as a normal, physical disk to the operating system. However, the device driver interacts directly with the virtualization platform (with no emulation) to efficiently deliver disk access, allowing the disk and

network subsystems to operate at near native speeds in a virtualized environment, without requiring changes to existing operating systems.

1.2 Best Practices

Before installing SUSE Linux Enterprise Virtual Machine Driver Pack in your production environment, we strongly recommend that you run it in a test environment it to ensure that it functions properly with your system.

1.3 Installing the Virtual Machine Host

1. Install SLES 10 SP1 (see the *SLES 10 Installation and Administration Guide* (http://www.novell.com/documentation/sles10/sles_admin/index.html?page=/documentation/sles10/sles_admin/data/sles_admin.html).

   During the SLES 10 SP1 installation, do the following:

   - Install the minimal packages necessary for SLES. (For best performance, the host server should be running only packages required for virtualization.)
   - Install the Xen Virtualization Host Server packages.
   - Turn off the firewall.
   - Make sure to use ifup, not Network Manager.
2. Get the latest updates for SLES 10 SP1. Use *YaST* > *Software* > *Online Update* or click the *Software Updater* on the taskbar.

   To get updates, you must register with Novell Customer Center.

1.4 Buying a Support Subscription

The customer support you receive for the SUSE Linux Enterprise Virtual Machine Driver Pack is at the same level as your SUSE Linux Enterprise support subscription (http://support.novell.com/linux/sles_support.html). You can choose the following levels of support:

- Basic
- Standard
- Priority

Descriptions of these levels of support and how to buy them are found at SUSE Linux Enterprise Server 10 How to Buy (http://www.novell.com/products/server/howtobuy.html).

1.5 Installing the Driver Pack

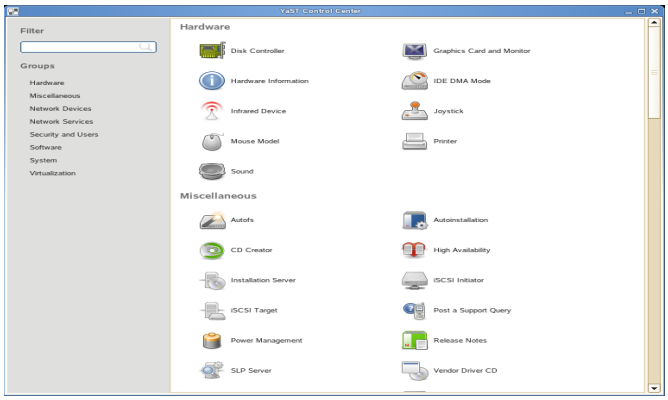
- Section 1.5.1, “Preparing the Driver Pack for Installation,” on page 10
- Section 1.5.2, “Using the Installation Wizard to Install the Driver Pack,” on page 13

1.5.1 Preparing the Driver Pack for Installation

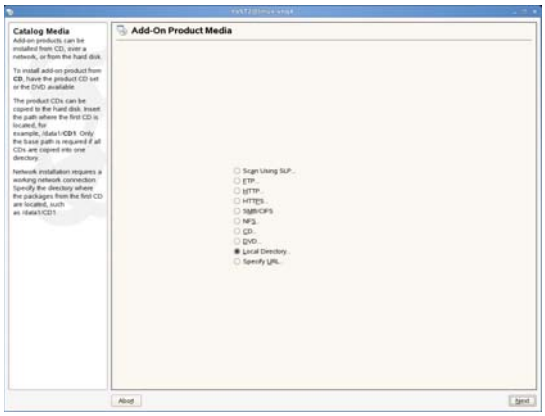
1. Download SLES-Virtual-Machine-Driver-Pack-10.iso to your SLES 10 SP1 virtual machine host.

2 Open YaST.

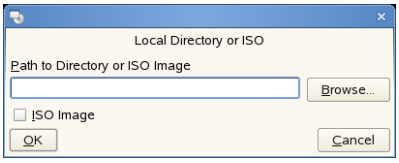
If YaST doesn't appear in your list of applications, you can run YaST by logging in as `root` and entering `YaST2` at a terminal.



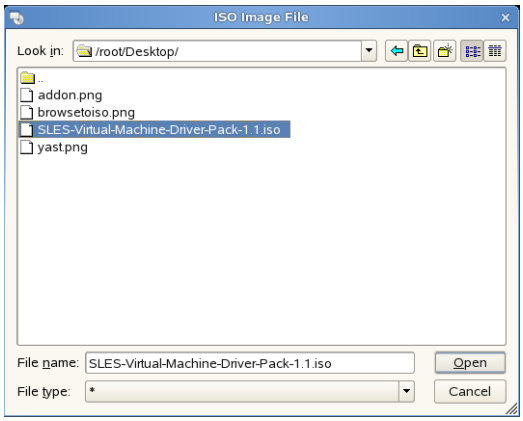
3 Select *Software*, then click *Add-on Product*.



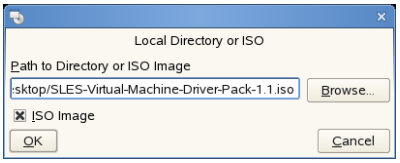
4 Click *Local Directory*, then click *Next*.



5 Select the *ISO Image* box, then browse to the location of the driver pack ISO image you downloaded.



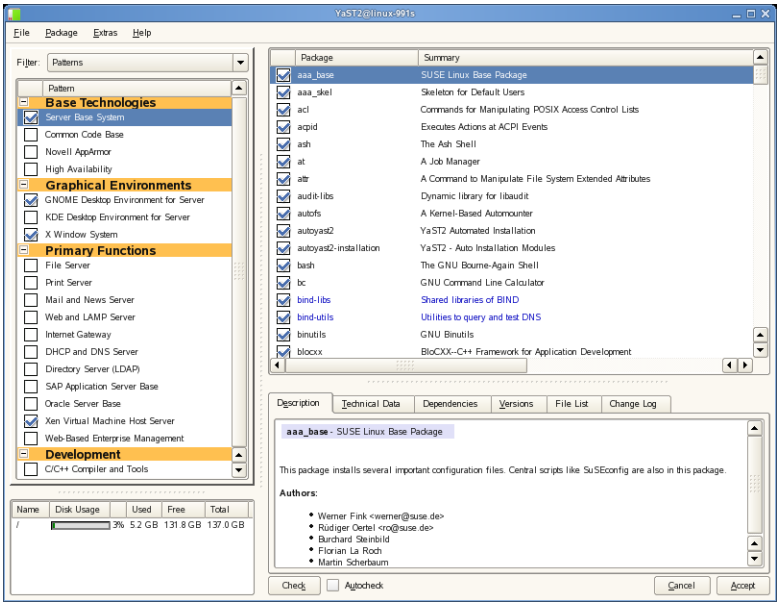
6 Select the driver pack ISO, then click *Open*.



7 Click *OK*.

8 At the license agreement, click *Yes*, then click *Next*.

9 Select *Patterns* from the *Filter* drop-down list.



10 Select the drivers you want to install, then click *Accept*.

11 When asked if you want to install more packages, click *No*.

The drivers are now on your SLES 10 virtual machine host in the `opt/novell/vm-driver-pack/xen` directory.

1.5.2 Using the Installation Wizard to Install the Driver Pack

1. Launch the Virtual Machine Manager and start your Windows virtual machine.
2. Set up the ISO image or CD of the drivers you want to install as a virtual CD reader by following the instructions in the *Configuration Options and Settings Guide* in Section 1.5: Virtual CD Drives and ISO Images (http://www.novell.com/documentation/vmserver/config_options/index.html?page=/documentation/vmserver/config_options/data/b9rtimf.html). The ISO images are found in the SLES 10 virtual machine host `opt/novell/vm-driver-pack/xen` directory .
3. Right-click the virtual CD-ROM you just added, then click *Autoplay*.

   If you see a security alert that indicates the Bus driver has not been properly signed, click *Yes* to install the Bus driver software.

   IMPORTANT: Do not click *No*.

   The Novell Virtual Device Driver Installer launches.

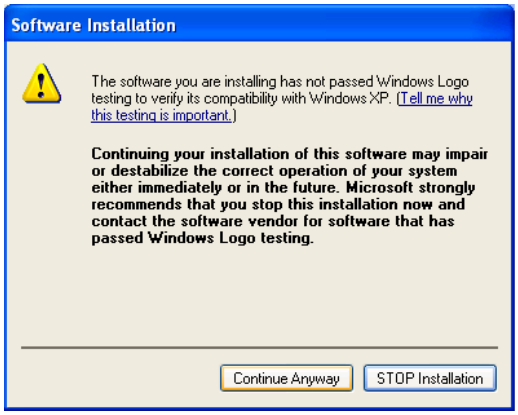
4. Click *Next*.

The End User License Agreement window appears.

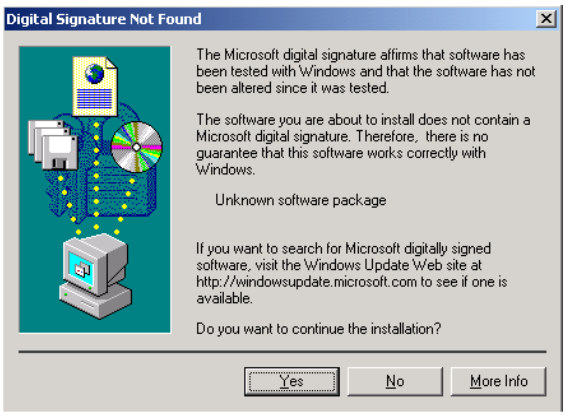
5 Click *I accept this agreement*, then click *Next*.

A software installation note appears, indicating that the software has not passed Windows logo testing.

If you are installing Windows XP or Windows Server 2003, you see the following:



If you are installing Windows 2000, you see the following:



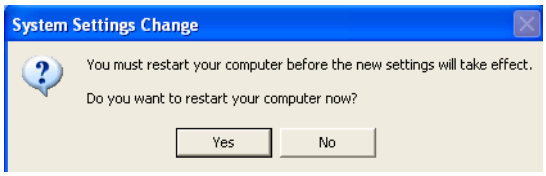
6 Click *Continue Anyway* or click *Yes* for each occurrence of this window.

A Congratulations window indicates that the drivers were installed.

NOTE: Clicking *Cancel* on this screen does not cancel the installation. If you want to cancel, you will have to uninstall (see Section 1.6, "Uninstalling the Driver Pack," on page 17).

7 Click *Finish*.

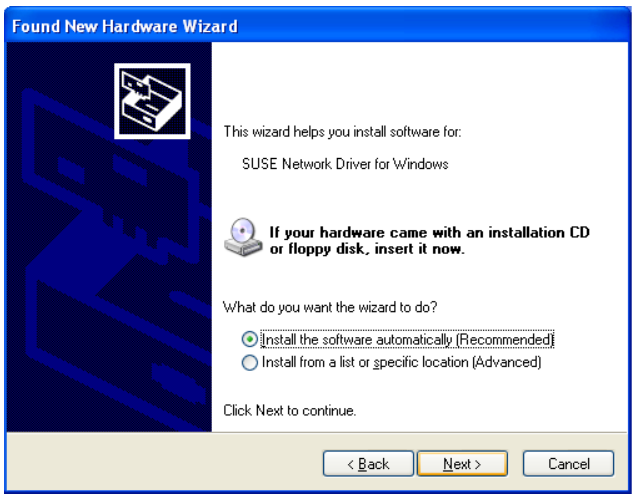
A message appears, indicating that you must restart the system.



8 Click *Yes*.

The system restarts. The Found New Hardware Wizard appears, indicating that it has found new hardware.

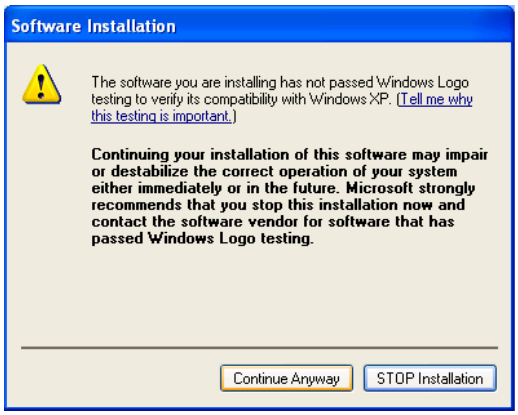
9 Click *Yes this time only*, then click *Next*.



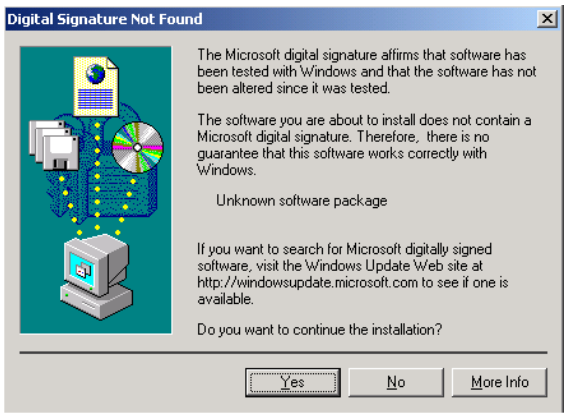
10 Click *Install the software automatically*, then click *Next*.

A software installation note appears, indicating that the software has not passed Windows logo testing.

If you are installing Windows XP or Windows Server 2003, you see the following:

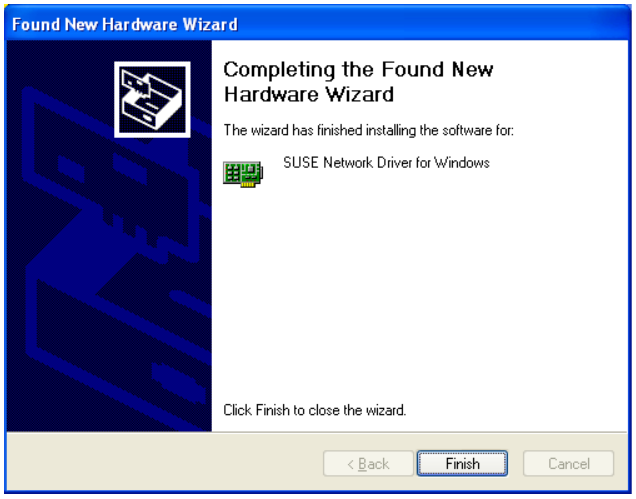


If you are installing Windows 2000, you see the following:



11 Click *Continue Anyway* or click *Yes*.

A message indicates the Found New Hardware Wizard is done.



12 Click *Finish*.

13 If you are installing the Windows 2000 Server, you must reboot the system again.

1.6 Uninstalling the Driver Pack

1 Make sure the installation CD is detached from the virtual machine.

2 Browse to `c:\Program Files\Novell\XenDrv`.

3 Double-click `uninstall.exe`.

You will be prompted to reboot the system.

4 Close all applications that are running and click *OK*.

The system restarts. The Found New Hardware Wizard appears, indicating that it has found new hardware.

5 Click *Yes, this time only*, then click *Next*.

The wizard asks to install software for the PCI Device.

6 Click *Cancel*.

The driver pack is now uninstalled from your system.

1.7 Upgrading the Driver Pack

To upgrade to a newer version of the driver pack:

1 Uninstall the current driver pack (see Section 1.6, “Uninstalling the Driver Pack,” on page 17).

2 Download and install the new driver pack.

1.8 Recovering from a Catastrophic Failure

In the event of a catastrophic failure caused by the driver pack, you can safely remove the driver pack and return to your previous system configuration.

1 Shut down the virtual machine and reboot in safe mode.

2 Uninstall the driver pack (see Section 1.6, “Uninstalling the Driver Pack,” on page 17).

1.9 Avoiding Problems with the Drivers

To avoid problems and potential failure of the device drivers in the driver pack, you should avoid the following actions:

- Using the Device Manager to manage (Update ..., Disable, Uninstall, etc.) the device drivers in the driver pack.
- Deleting driver files manually. Always use the uninstall utility (see Section 1.6, “Uninstalling the Driver Pack,” on page 17).
- Uninstalling the driver pack with the installation CD attached to the virtual machine.
- Canceling the install when you see security alert that indicates the Bus driver has not been properly signed. You must click *Yes* to continue the installation.

- Upgrading the Linux* kernel of the virtual machine host without upgrading the driver pack at the same time.
- Installing or uninstalling the driver pack by any other process than what is documented in this guide (see Section 1.5.2, “Using the Installation Wizard to Install the Driver Pack,” on page 13 and Section 1.6, “Uninstalling the Driver Pack,” on page 17).

1.10 Security Information

There are no known security issues introduced by the device drivers in this driver pack; however, you should familiarize yourself with potential security issues on Xen (http://www.xensource.com). You should also follow the security recommendations for the operating system you are using.

These drivers do not contain or use cryptography.