

SUSE LINUX Administration Self-Study Workbook

This workbook is designed to help you practice the skills associated with Course 3037 (SUSE LINUX Administration) objectives outside of a classroom.

Introduction

The skills introduced in this workbook are critical for performing basic administrative tasks with SUSE LINUX, and are necessary for passing the Novell CLP (Certified Linux Professional) practicum.

The exercises in this workbook are the same as those included in your *Course 3037 SUSE LINUX Administration* manual, but with modifications and notes to help you perform the exercises on a single computer without relying on an instructor or partner SLES 9 server.



If you experience any problems using the SLES 9 VMware Server DVD or the Self-Study Workbook, please email your questions or comments to EDCustomer@novell.com.

SLES 9 Server Setup Instructions

Before starting the exercises in this workbook, you need to set up a SLES 9 server with the same configuration as that provided in the classroom.

There are 2 solutions provided for you:

- [“Access the SLES 9 Server as a VMware Server” on Intro-2](#)
- [“Install the SLES 9 Student Server With AutoYaST” on Intro-7](#)

Access the SLES 9 Server as a VMware Server

If you want to avoid dedicating a computer to a SLES 9 installation, you can use the SLES 9 VMware virtual server provided on the *SLES 9 VMware Server DVD*.

The following guides you through installing and using the SLES 9 VMware server:

- [Check Setup Prerequisites](#)
- [Install the SLES 9 VMware Server](#)
- [Configure the SLES 9 VMware Server](#)
- [Start the SLES 9 VMware Server](#)
- [VMware Workstation Tips](#)

Check Setup Prerequisites

The following items are required to run the SLES 9 VMware server on your computer:

Table Intro-1

Item	Requirement
Memory	256 MB RAM (minimum)

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Hard Drive Space	3.4 GB
DVD-ROM Drive	For reading the SLES 9 Self-Study Server DVD and other CDs required for the exercises.
Software	VMware Workstation 4.5 or later (Windows or Linux)
SLES 9 Self-Study Server DVD	Contains the SLES 9 VMware Server files

Although you can run the SLES 9 VMware server with 256 MB of RAM, processing time for performing some Linux administration tasks (such as using YaST) can be significantly reduced by increasing memory for the VMware server.

If you do not own a copy of VMware Workstation (or have a version earlier than 4.5), you can download and install a VMware Workstation 4.5 30-day evaluation copy from www.vmware.com.

Install the SLES 9 VMware Server

Once you have VMware Workstation 4.5 installed on your host computer, do the following to install the SLES 9 VMware server:

1. Insert the *SLES 9 Self-Study Server DVD* in your DVD-ROM drive.
2. Copy the VMware server files on the DVD to a directory on your hard drive.

We recommend creating a specific directory (such as */tmp/vmware/SLES9_SS*) to store the files.

3. Start VMware Workstation 4.5.
4. Select **File > Open Virtual Machine**.

5. Browse to and open the **sles.vmx** file.

The SLES9_SS VMware server opens in VMware Workstation and is ready to start.

Configure the SLES 9 VMware Server

Before starting the SLES 9 server, do the following:

1. Select **VM > Settings** (or **Edit virtual machine settings**).

A Virtual Machine Settings - SLES9_SS dialog appears.

From this dialog you can adjust the settings for several devices such as memory, floppy drive, and network adaptor before starting the virtual server.

2. Check the following device settings:

- **Memory.** This memory setting indicates the amount of memory used by the SLES 9 virtual server on the host computer.

Although you can run the SLES 9 virtual server with 256 MB of memory, we recommend increasing the amount (when possible) to increase the speed of certain administrative tasks (such as starting X Windows or using the GUI version of YaST).

- **DVD/CD-ROM.** This is the DVD drive on your host computer, and should be set as a physical drive.

We recommend leaving the default setting at “auto detect” for Windows.

If you are running VMware Workstation on Linux, enter the device name of the DVD drive (such as /dev/hda). You can normally select the device name from the drop-down list for the Device field.

- **Floppy Drive.** This is the floppy drive on your host computer.

The default is set to “A:” for a Windows computer. If you are running VMware Workstation on Linux, change the setting to the device for the floppy drive (such as /dev/fd0).

- **Network Adaptor.** The “NAT” network connection default setting provides a VMware Workstation DHCP server for the SLES 9 server (which is configured to use DHCP).

While you can select another setting (such as “Bridged”), these have not been tested and can cause problems completing the exercises.

We recommend keeping the default “NAT” setting.

The rest of the settings should work properly to provide you with the access you need to devices for USB, sound, and mouse control.

If not, return to this dialog to make the necessary adjustments to the settings.

3. When you finish reviewing the virtual server configuration, save any changes and close the dialog by selecting **OK**.

During the exercises, you use the Ctrl+Alt key combination to access features such as terminal consoles. VMware Workstation also uses this hot key combination to switch you out of the virtual server to the host machine.

4. To change the VMware hot key configuration, select **Edit > Preferences**.

A Preferences dialog appears.

5. Select the **Hot keys** tab; then select the **Ctrl-Shift-Alt** option.

Once you start the SLES 9 VMware server, you can press Ctrl+Shift+Alt to access the host machine, including the VMware Workstation menu options.

6. Save the change by selecting **OK**.

Start the SLES 9 VMware Server

Do the following:

1. Start the SLES 9 VMware server by selecting **Power > Power On** (or **Start this virtual machine**).
2. The SLES 9 server starts booting.
3. (Conditional) If you cannot see the entire SLES 9 window on your monitor, select the VMware Workstation full screen mode.

After starting the SLES 9 services, a blank screen is displayed while the X windows GUI interface is loaded.

Depending on the amount of memory allocated to the virtual server, loading the GUI interface can take almost a minute.

4. Once the GUI login dialog appears (with Geeko Novell listed as a user), select **VM > Install VMware Tools**.

The VMware Tools package enhances the graphics resolution and color depth capabilities of your virtual server.

A Question dialog appears to confirm the installation.

5. Install the VMware Tools package by selecting **Install**.

The installation takes only a couple of seconds, but no “success” dialog is displayed to indicate that the package was installed.

You can verify that the package was installed by displaying the VM menu. If there is a **Cancel VMware Tools Install** option listed, then the package was installed successfully.

6. After the VMware Tools installation, click in the virtual server window to switch keyboard and mouse functionality from the host computer to the virtual server.

You are ready to begin Exercise 1-1.

VMware Workstation Tips

Although we rely on your experience with VMware Workstation to complete the exercises in a virtual server environment, the following are some tips that can help you when using the SLES 9 virtual server:

- If you cannot use the keyboard to enter text, try selecting the virtual server window with the mouse or try pressing **Shift-Tab**.
- If you need to adjust the SLES 9 virtual server resolution to fit the monitor on your host computer, follow the steps in Exercise 1-2 “[Customize Your SLES 9 Installation With YaST](#)” on 1-5 to make the adjustment.
- If you need to switch keyboard and mouse focus from the virtual server to the host computer, press **Ctrl+Shift+Alt**; then select the virtual window again to switch focus back.
- If you want to save a copy of the SLES 9 virtual server before continuing on with an exercise or the next exercise, use the Snapshot feature (**Snapshot > Save Snapshot**).
- Before powering off the SLES 9 virtual server, make sure you shut down the server to avoid any problems caused by not shutting down the server cleanly.

Install the SLES 9 Student Server With AutoYaST

If you want to install the SLES 9 student server on an available computer, the *3037_Course_CD* includes an AutoYaST file (/setup/student.xml) that automatically configures SLES 9 for you during installation. All you need to do is swap CDs during the installation.



By installing SLES 9 with AutoYaST, you remove the existing operating system and all files on your hard drive. Before starting the installation, make sure you back up any important files you want to keep.

To install and configure SLES 9 on your computer with AutoYaST, do the following:

1. Check to make sure your computer meets the following hardware requirements:
 - A Pentium® III or AMD 750 Mhz or faster computer
 - 512 MB RAM (256 minimum)
 - 20 GB hard disk
 - CD-ROM drive

Internet access is optional for completing the exercises.

2. Copy the file **student.xml** (on your *3037 Setup CD*) to the root of a floppy diskette.
3. Boot the server from *SLES 9 CD 1*.
4. When the GRUB installation screen appears, highlight the **Installation** option.

You have 20 seconds to highlight the option before GRUB boots from the hard drive.

5. Set the display resolution by pressing **F2**; then select a display resolution of at least **1024x768**.

If a resolution of 1024x768 is not available, select the highest resolution available (such as 640x480).

6. Insert the floppy diskette with the file **student.xml** into the server diskette drive.
7. In the Boot Options field (bottom of the screen), type the following:

autoyast=floppy:///student.xml

Make sure you enter 3 forward slashes (*///*) or the installation program will not be able to find the file `student.xml`.

8. When you are ready to begin installation, press Enter.

The kernel loads and the SLES 9 installation program detects server hardware (including the floppy drive) and starts Linuxrc.

From Linuxrc, you need to indicate that you are using CDs to install SLES 9.

9. Start the manual setup program by selecting **OK**.

A Select the language dialog appears.

10. Select *your language*; then select **OK**.

A Choose a keyboard map dialog appears.

11. Select a *keyboard map*; then select **OK**.

The Linuxrc Main Menu appears.

12. Press the **Enter** key to accept the following default options and start the installation:

- Start Installation or System**
- Start Installation or Update**
- CD-ROM**

Linuxrc mounts the SLES 9 CD 1 in your CD-ROM drive, and then starts YaST.

If you are using a 640 x 480 resolution, a dialog appears indicating that a text-based version of YaST will be used.

13. Wait for AutoYaST to accept the text-based version (after 10 seconds) or select **OK**.

A Software License Agreement dialog appears.

14. Wait for AutoYaST to accept the license agreement (after 10 seconds) or select **I Accept**.

YaST begins preparing the system automatic installation by probing for hardware.

15. (Conditional) If dialogs appear requesting that you confirm driver activation, select **OK** for each dialog.

YaST accesses the file *student.xml* on your diskette and finishes preparing for the installation. YaST then formats your hard drive and begins installing from SLES 9 CD 1.

At certain points, YaST requests a particular SLES 9 installation CD.

16. Insert the requested SLES 9 CD; then continue by selecting **OK**.

Continue swapping CDs as indicated by the YaST installation program.

The installation screen keeps you updated on the installation progress (time remaining and percentage completed).

After copying files from the CDs, YaST performs tasks such as updating the configuration, copying files to the installed system, installing the boot manager, and preparing for an initial system boot.

When these tasks are completed, YaST reboots the system.

17. Remove the student.xml diskette and the last SLES 9 CD from the computer drives, and then wait for the system to boot.

After the system boots, a message appears indicating that YaST is ready to begin detecting your network cards.

18. Select **Continue**.

YaST begins detecting network cards and configuring your server.

A second network card detection message appears.

19. Select **Continue**.

YaST finishes configuring system and boots to runlevel 5 where a GUI login screen appears.

20. Log in as **geeko** with a password of **N0v3ll** (a zero, not an uppercase O) and follow the steps in Exercise 10-3 for setting your language, time zone, and graphics resolution.

Scenario

As system administrator for your Digital Airlines office, you have been tasked by the company to migrate several network services to SLES 9 servers over the next year.

As part of the rollout plan, you would like to install SLES 9 on a prototype/staging server that you can use to do the following:

- Become familiar with basic administrative tasks on the local host (such as providing user access and security)
- Connect to the network to test a variety of services you will be migrating (such as file and print)
- Provide limited access for training others in your office (such as the database group) who will be using or configuring these services
- Test updating and remote administration of SLES 9

Once you complete this initial testing of services and administrative tasks, you will then be in a position to begin rolling out SLES 9 according to guidelines from Digital Airlines corporate headquarters.

