

# SUSE Linux Enterprise Server 10 Fundamentals Workbook

COURSE 3071

**Novell Training Services**

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AUTHORIZED COURSEWARE

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# Introduction

This workbook is designed to help you practice the skills associated with *SUSE Linux Enterprise Server 10 Fundamentals* (Course 3071) objectives.

These skills, along with those taught in the *SUSE Linux Enterprise Server 10 Administration* (3072) and *SUSE Linux Enterprise Server 10 Advanced Administration* (3073) courses, prepare you to take the Novell Certified Linux Professional 10 (Novell CLP 10) certification practicum test.



Instructions for setting up a self-study environment are in the directory setup on the Course DVD.

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Before starting the exercises in this workbook, you need to review the following:

- [Course Scenario](#)
- [Exercise Conventions](#)

## Course Scenario

You are system administrator for your Digital Airlines office. The management is considering migration of some network services to SUSE Linux Enterprise Server 10 servers.

As system administrator, you decide to do the following:

- Install SUSE Linux Enterprise Server 10 on a test workstation.
- Become familiar with the graphical user interface and the command line interface.
- Learn how to integrate your SUSE Linux Enterprise Server into an existing network.
- Learn how to get help for all problems you might have.
- Learn how to manage software packages with the configuration tool YaST2.
- Learn how to edit configuration files with an graphical editor or the command line editor vi.
- Understand the structure of the Linux file system and basic shell commands for working in the file system (e.g. copying, moving).
- Learn how to manage users, groups and file permissions to ensure a basic file system security.

Once you complete this training, you will be able to install SUSE Linux Enterprise Server 10 and set up a system for further tests.



## Exercise Conventions

When working through an exercise, you will see conventions that indicate information you need to enter that is specific to your server.

The following describes the most common conventions:

- ***italicized/bolded text***. This is a reference to your unique situation, such as the host name of your server.

For example, if the host name of your server is DA50, and you see the following,

***hostname.digitalairlines.com***

you would enter

***DA50.digitalairlines.com***

- ***10.0.0.xx***. This is the IP address that is assigned to your SUSE Linux Enterprise Server 10 server.

For example, if your IP address is 10.0.0.50, and you see the following

***10.0.0.xx***

you would enter

***10.0.0.50***

- ***Select***. The word *select* is used in exercise steps to indicate a variety of actions including clicking a button on the interface and selecting a menu item.
- ***Enter and Type***. The words *enter* and *type* have distinct meanings.

The word *enter* means to type text in a field or at a command line and press the Enter key when necessary. The word *type* means to type text without pressing the Enter key.

If you are directed to type a value, make sure you do not press the Enter key or you might activate a process that you are not ready to start.

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## SECTION 1 Understand the Linux Story

In this section of the workbook, you learn how to do the following:

- [“Install SUSE Linux Enterprise Server 10” on 1-2](#)

In this exercise, you install SUSE Linux Enterprise Server 10.

## **Exercise 1-1     *Install SUSE Linux Enterprise Server 10***

In this exercise, you install SUSE Linux Enterprise Server 10. Select the default options when possible.

In part III, enter **digitalairlines.com** as domain name. In part IV, use **novell** as root password. In part V, deactivate the firewall and skip the Novell Customer Center configuration. In part VI, create an user account **geeko** for Geeko Chameleon with password of **novell**.

Do the following:

- [Part I: Boot the System and Start the Installation](#)
- [Part II: Check your Keyboard Layout before Starting the Installation of the Software Packages](#)
- [Part III: Specify your Hostname](#)
- [Part IV: Enter a Root Password](#)
- [Part V: Open SSH Port and Test the Internet Connection](#)
- [Part VI: Configure Basic Services](#)
- [Part VII - Select Local User Authentication and Add a User](#)
- [Part VIII: Finish the Installation](#)

### **Part I: Boot the System and Start the Installation**

To boot the system and start the installation, do the following:

1. Insert *SUSE Linux Enterprise Server 10 DVD* into your DVD drive.
2. Reboot your computer.
3. From the installation menu, select **Installation** and press **Enter**.
4. From the language dialog, select **English (US)**; then select **Next**.
5. From the Novell Software License Agreement dialog, select **Yes, I Agree to the Licence Agreement** and then select **Next**.
6. (Conditional) Select **New installation**; then select **Next**.

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7. From the Clock and Time Zone dialog, select your region and time zone. Select **Next**.

## **Part II: Check your Keyboard Layout before Starting the Installation of the Software Packages**

To check your keyboard layout before starting the installation of the software packages, do the following:

1. In the **Overview** tab verify that the correct keyboard layout is selected in the section **Keyboard Layout**.
2. (Conditional) If the correct keyboard layout is not selected, from the **Change** drop-down list select **Keyboard Layout**; then select the correct layout and select **Accept**.
3. Confirm the YaST installation suggestions by selecting **Accept**.
4. Confirm the installation settings by selecting **Install**.

After copying files and finishing a basic installation, YaST reboots your computer to a Password for “root” dialog.

## **Part III: Specify your Hostname**

To specify your hostname, do the following:

1. In the Domain Name field, enter **digitalairlines.com**. Make sure that the option **Change Hostname via DHCP** is activated. Select **Next**.

## **Part IV: Enter a Root Password**

To enter a root password, do the following:

1. Specify the root password by entering **novell** (twice); then select **Next**.
2. Confirm the two warning messages by selecting **Yes**.



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You should use an insecure password (such as **novell**) only for the purpose of training. Choose a more secure password on a live system.

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## Part V: Open SSH Port and Test the Internet Connection

To open the SSH port and test the internet connection, do the following:

1. To allow network access to your computer for your trainer, disable the Firewall by selecting **enabled** in the second line of the Firewall section (“Firewall is **enabled**” changes to “Firewall is **disabled**”). Confirm the other suggestions of YaST's network configuration by selecting **Next**.
2. Select **Yes, Test Connection to the Internet**; then test your Internet connection by selecting **Next**.
3. Do one of the following:
  - ❑ If the connection test fails (you see a failed message for the release notes), select **OK** and then **Next**.
  - or*
  - ❑ If the connection test is successful, select **Next**.
4. In the Novell Customer Center select **Configure Later**; then select **Next**.



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You should install the updates on production systems. You do not install the updates during training because the updates might change menus and user interfaces. Also you need a maintenance contract with Novell to get updates for SUSE Linux Enterprise Server 10.

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## Part VI: Configure Basic Services

To configure basic services, do the following:

1. In the Service Configuration dialog, make sure that **Use Following Configuration** is selected; then select **Next**.

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## Part VII - Select Local User Authentication and Add a User

1. In the User Authentication Method dialog, select **Local (/etc/passwd)**; then select **Next**.
2. Add a local user by entering the following:
  - ❑ User's Full Name: **Geeko Chameleon**
  - ❑ Username: **geeko**
  - ❑ Password: **novell**
  - ❑ Confirm Password: **novell**When you finish, select **Next**.
3. Confirm the two warning messages by selecting **Yes**.



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You should use an insecure password (such as novell) only for the purpose of training. Choose a more secure password on a live system.

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YaST begins configuring your SUSE Linux Enterprise Server 10 system.

## Part VIII: Finish the Installation

To finish the installation, do the following:

1. Confirm the release notes by selecting **Next**.
2. Accept the default hardware configuration by selecting **Next**.
3. Deselect the option **Clone This System for Autoyast** and select **Finish**.

The GUI login screen appears.

**(End of Exercise)**

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## SECTION 2    Use the Linux Desktop

In this section of the workbook, you learn how to do the following:

- [“Log In to and Log Out from the GNOME Desktop” on 2-2](#)

In this exercise, you learn how to log in to and log out from your GNOME desktop.

- [“Work with Icons in GNOME” on 2-3](#)

In this exercise, you add a new icon to your desktop. You also add and remove an applet to and from the bottom panel.

- [“Use the GNOME File Manager \(Nautilus\)” on 2-5](#)

In this exercise, you explore your GNOME desktop and learn how to use the GNOME File Manager Nautilus.

- [“Access the Command Line Interface” on 2-8](#)

In this exercise, you switch to virtual terminals and back to the graphical user interface. You also log in and log out at a virtual terminal.

## **Exercise 2-1      Log In to and Log Out from the GNOME Desktop**

In this exercise, you learn how to log in to and log out from your GNOME desktop.

Do the following from the GUI login screen (where you were left after installing SUSE Linux Enterprise Server 10):

1. In the Username field, enter **geeko**; then press **Enter**.
2. In the Password field, enter **novell**; then press **Enter**.

For security reasons, asterisks are displayed instead of the letters when you are entering the password.

The GNOME desktop environment starts.

3. To log out, open the main menu (labeled **Computer**) in the bottom panel.
4. Select **Log Out**.
5. In the confirmation dialog, select **OK**.

You are returned to the GUI login screen.

***(End of Exercise)***

## **Exercise 2-2      Work with Icons in GNOME**

In part I of this exercise, you add a new launcher labeled “xeyes” for the program `/usr/X11R6/bin/xeyes` to your desktop. The icon for the new launcher should be `gnome-eog.png`. In part II, you add and remove the applet “geyes” to and from your bottom panel.

Do the following:

- [Part I: Create a new Launcher](#)
- [Part II: Add and Remove an Applet to and from the Bottom Panel](#)

### **Part I: Create a new Launcher**

To create a new launcher, do the following:

1. Right-click the background of your desktop.
2. Select **Create Launcher** from the pop-up menu.
3. In the Name textbox enter **xeyes**
4. In the Command textbox enter **/usr/X11R6/bin/xeyes**
5. Select **No Icon**.
6. Select **gnome-eog.png** from the Browse Icon dialog.
7. Select **OK**.
8. Select **OK**.

### **Part II: Add and Remove an Applet to and from the Bottom Panel**

To add and remove an applet to and from the bottom panel, do the following.

1. To add a new applet in the bottom panel, right-click at a free space in the bottom panel.
2. Select **Add to Panel** from the pop-up menu.
3. Select **Geyes** from the list and then select **Add**.
4. Move your mouse pointer.
5. To remove the Geyes applet, right-click the applet in the bottom panel.
6. Select **Remove from Panel** from the pop-up menu.

***(End of Exercise)***

## **Exercise 2-3      Use the GNOME File Manager (Nautilus)**

In this exercise, you explore your GNOME desktop. Use Nautilus to copy the file `/etc/DIR_COLORS` into your home directory and add the “Oh no!” emblem to the copied file. In part IV, you rename the copied file to “example.txt”. In part V, you delete example.txt and empty the trash.

Do the following:

- [Part I: Start GNOME](#)
- [Part II: Start Nautilus and Copy a File](#)
- [Part III: Add an Emblem to the Copied File Icon](#)
- [Part IV: Rename the Copied File](#)
- [Part V: Delete the Copied File](#)

### **Part I: Start GNOME**

To start GNOME, do the following:

1. In the Username field, enter **geeko** and press **Enter**.
2. In the Password field, enter **novell** and press **Enter**.

For security reasons, asterisks are displayed instead of the actual letters when you enter the password.

The GNOME desktop environment starts.

### **Part II: Start Nautilus and Copy a File**

To start Nautilus and copy a file, do the following:

1. Start the Nautilus file manager by selecting the **geeko's Home** icon on the desktop.
2. View the file system tree in the side panel by opening the menu at the top of the side panel (labeled **Places** when Nautilus is started the first time). Select **Tree** from the menu.

3. View the contents of the /etc directory by selecting the small triangle in front of the **File System** entry in the side panel. Then select **etc** in the side panel (a single mouse click).
4. Copy the file /etc/DIR\_COLORS on the desktop by scrolling down and selecting the **DIR\_COLORS** file icon, dragging it over the desktop while the Ctrl key is pressed, and releasing the mouse button.

Notice there is a small plus at the mouse pointer while dragging the file, indicating that you are copying a file.

5. Switch back to your home directory by selecting **Home Folder** in the side panel.
6. Move the file DIR\_COLORS from the desktop into your home directory by selecting the **DIR\_COLORS** file icon, dragging it over the right frame of the Nautilus window, and releasing the mouse button.

Notice there is no small plus at the mouse pointer while dragging the file, indicating that you are moving a file.

### Part III: Add an Emblem to the Copied File Icon

To add an emblem to the copied file icon, do the following:

1. Switch to the list of emblems by opening the menu at the top of the side panel (labeled **Tree** now). Select **Emblems** from the menu.
2. Scroll down in the side panel to the **Oh no!** icon.
3. Drag the **Oh no!** icon over the icon of the **DIR\_COLORS** file in the right frame, and release the mouse button.

### Part IV: Rename the Copied File

To rename the copied file, do the following:

1. Rename the copied file by right-clicking the **DIR\_COLORS** file icon, and then selecting **Rename** from the popup menu.

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2. For the new filename, type **example.txt**; then press **Enter**.

### **Part V: Delete the Copied File**

To delete the copied file, do the following:

1. Delete the file **example.txt** by dragging the file icon over the **Trash** icon on the desktop, and releasing the mouse button.
2. Close the Nautilus file manager window.
3. Right-click the **Trash** icon on the desktop and select **Empty Trash** from the pop-up menu.
4. In the confirmation dialog, select **Empty Trash**.

***(End of Exercise)***

**Exercise 2-4      Access the Command Line Interface**

In this exercise, you log in as user `geeko` at the first virtual terminal. You switch to the second virtual terminal and verify that a login prompt is shown there. Before switching back to the graphical user interface, you log out from the first virtual terminal.

Do the following:

1. Switch to the first virtual terminal by pressing **Ctrl+Alt+F1**.
2. Type **geeko** as a login name and press **Enter**.
3. Type **novell** as the password and press **Enter**.
4. Switch to the second virtual terminal by pressing **Ctrl+Alt+F2**.  
Notice that you are not logged in at this terminal.
5. Press **Ctrl+Alt+F1** to switch back to the first terminal.  
You are still logged in as `geeko`.
6. Log out by entering:  
**exit**
7. Switch back to the graphical user interface by pressing **Ctrl+Alt+F7**.

**(End of Exercise)**



## SECTION 3 Administer Linux with YaST

In this section of the workbook, you learn how to do the following:

- [“Get to Know YaST” on 3-2](#)

In this exercise, you learn how to use the different user interfaces of YaST and how to start some YaST modules.

- [“Manage the Network Configuration Information from YaST” on 3-5](#)

In this exercise you change all the network configuration information into static values.

- [“Install New Software” on 3-9](#)

In this exercise, you install another software package that is available on the SUSE Linux Enterprise Server 10 installation media.

### **Exercise 3-1      Get to Know YaST**

In this exercise, you learn how to use the different user interfaces of YaST and how to start some YaST modules. In part I, you start the graphical user interface of YaST. In part II, you view the file `/proc/version` with the YaST system log module. In part III, you to set the time. Repeat part I and II with the ncurses user interface of YaST in part IV and V.

To use YaST, do the following:

- [Part I: Start YaST](#)
- [Part II: View the Content of a System Log File](#)
- [Part III: Change Time and Date](#)
- [Part IV: Start the ncurses Interface of YaST](#)
- [Part II: View the Content of a System Log File](#)
- [Part VI: Exit YaST](#)

#### **Part I: Start YaST**

To start YaST, do the following:

1. From the GNOME desktop, open the main menu.
2. Select **More Applications**.
3. Enter **ya** into the Filter text box.
4. Select the **YaST** icon to start YaST.
5. Enter the root password **novell** in the appearing dialog; then select **Continue** or press Enter.

The YaST Control Center appears.

#### **Part II: View the Content of a System Log File**

To view the content of a system log file, do the following:

1. Select **Miscellaneous > View System Log**.

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2. From the top drop-down list, select **/proc/version**.
3. Close the log window by selecting **OK**.

### Part III: Change Time and Date

To change time and date, do the following:

1. Select **System > Date and Time**.
2. Select **Change**.
3. Enter the current time (such as **08:00:00**) and the current date (such as **27/04/2006**).
4. Select **Apply**.
5. Select **Accept**.

### Part IV: Start the ncurses Interface of YaST

To start the ncurses interface of YaST, do the following:

1. Switch to the first virtual terminal by pressing **Crtl+Alt+F1**.
2. Log in as **root** with a password of **novell**.
3. View a list of the available YaST modules by entering **yast -l**.
4. Enter **yast** to start the ncurses interface of YaST.

### Part V: View the Content of a System Log File

To view the content of a system log file, do the following:

1. Press **cursor-down** until **Miscellaneous** is highlighted in the left frame and press **Enter**.
2. Press **cursor-down** until **View System Log** is highlighted in the right frame and press **Enter**.
3. Press **cursor-down** until **/proc/version** is selected and press **Enter**.

4. Press Tab twice to highlight **OK** and press **Enter**.

## **Part VI: Exit YaST**

To exit YaST, do the following:

1. Press **Alt+Q** to select **Quit**.
2. Log out by entering  
**exit**
3. Switch back to the graphical interface by pressing **Crtl+Alt+F7**.
4. Close the YaST window.

***(End of Exercise)***

## **Exercise 3-2      *Manage the Network Configuration Information from YaST***

Up to now, your system got all network configuration information via DHCP. In this exercise you change all the important information into static values.

Use the **ip** command to find out which ip address you are currently using. Also note your current hostname. Then change the network configuration to static IP addresses, using the values you found. Use 10.0.0.254 as default gateway and also as address of the name server.

To manage the network configuration information from YaST, do the following:

- [Part I: Get your IP Number and Hostname](#)
- [Part II: Start the YaST Network Configuration Module](#)
- [Part III: Enter a Static IP Address and Subnet Mask](#)
- [Part IV: Change your Hostname](#)
- [Part V: Enter a DNS Server](#)
- [Part VI: Enter a Default Gateway](#)
- [Part VII: Activate new Settings and Finish](#)

### **Part I: Get your IP Number and Hostname**

To get your IP number and hostname, do the following:

1. From the GNOME desktop, open the main menu.
2. Select **More Applications**.
3. Enter **term** into the Filter text box.
4. Select the **Gnome Terminal** icon to start a terminal emulation.
5. Enter **/sbin/ip address show** to record the following information for your SUSE Linux Enterprise Server 10 server:
  - IP address:
  - Hostname:

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6. Close the terminal window.

## Part II: Start the YaST Network Configuration Module

To start the network configuration module of YaST, do the following:

1. From the GNOME desktop, open the main menu.
2. Select **More Applications**.
3. Enter **ya** into the Filter text box.
4. Select the **YaST** icon to start YaST.
5. Enter the root password **novell** in the appearing dialog; then select **Continue** or press Enter.

The YaST Control Center appears.

6. Start the network card module by selecting **Network Devices > Network Card**.

## Part III: Enter a Static IP Address and Subnet Mask

To enter a static IP address and subnet mask, do the following:

1. Make sure that **Traditional Method with ifup** is selected and select **Next**.

Your network card is listed in the upper table.

2. Make sure **your network card** is selected; then select **Edit**.
3. Make sure that the **Address** tab is activated.
4. Switch the setup by selecting **Static address setup**.
5. In the IP Address field, enter the **IP address** from Part I.
6. In the Subnet mask field, enter **255.255.255.0**.

## Part IV: Change your Hostname

To change your hostname, do the following:

1. Select **Host name and name server**.
2. (Conditional) If a dialog appears indicating that the **resolv.conf** files has been temporarily modified, continue by selecting **Modify**.
3. In the Hostname field, enter the **hostname** from Part I.
4. In the Domain Name field, enter **digitalairlines.com**.

## Part V: Enter a DNS Server

To enter a DNS server, do the following:

1. In the Name Server 1 field, enter the IP address of your DNS server (**10.0.0.254**).
2. If there are values in the other Name Server text fields, remove them.
3. In the Domain Search field, enter **digitalairlines.com**.
4. If there are values in the other Domain Search text fields, remove them.
5. Select **OK**.

## Part VI: Enter a Default Gateway

To enter a default gateway, do the following:

1. Select **Routing**.
2. In the Default Gateway field, enter the IP address of your Internet gateway (**10.0.0.254**).
3. Select **OK**.

## Part VII: Activate new Settings and Finish

To activate new settings and finish, do the following:

1. Select **Next**.
2. Select **Next**.
3. Close the YaST Control Center.
4. To test your network connection, start the web browser Firefox and try to call <http://www.novell.com>.

***(End of Exercise)***



### **Exercise 3-3      *Install New Software***

In this exercise, you install another software package that is available on the SUSE Linux Enterprise Server 10 installation media. It is called *locate* and it is needed in one of the following sections.

To install new software, do the following:

- [Part I: Start YaST](#)
- [Part II: Look for a Software Package](#)
- [Part II: Install a Software Package and Finish](#)

#### **Part I: Start YaST**

To start YaST, do the following:

1. From the GNOME desktop, open the main menu.
2. Select **More Applications**.
3. Enter **ya** into the Filter text box.
4. Select the **YaST** icon to start YaST.
5. Enter the root password **novell** in the appearing dialog; then select **Continue** or press **Enter**.
6. The YaST Control Center appears.

#### **Part II: Look for a Software Package**

To look for a software package, do the following:

1. From the YaST Control Center, select **Software > Software Management**.
2. From the Filter drop-down list, select **Search**.
3. In the Search textbox enter **locate**; select **Search**.

## Part II: Install a Software Package and Finish

To install a software package and finish, do the following:

1. From the right side of the window, select the package **findutils-locate**.
2. Select **Accept**.
3. (Conditional) If requested by YaST, insert the appropriate *SUSE Linux Enterprise Server 10 DVD*; then select **OK**.
4. When asked to install or remove more packages, select **No**.
5. Close the YaST Control Center by selecting **Close**.
6. (Conditional) If you installed from DVD, remove the DVD from your drive.

***(End of Exercise)***

## SECTION 4    Locate and Use Help Resources

In this section of the workbook, you learn how to do the following:

- [“Access and Use man Pages” on 4-2](#)

In this exercise, you learn how to use the commands `whatis` and `man` and how to navigate in the help text.

- [“Access and Use info Pages” on 4-3](#)

In this exercise, you learn how to use the `info` command and how to navigate in the info text.

- [“Access Release Notes and White Papers Pages” on 4-4](#)

In this exercise, you access release notes and white paper pages.

- [“Find Help on the Web” on 4-7](#)

In this exercise, you learn how to find help on the web.

## **Exercise 4-1      Access and Use man Pages**

In this exercise, you learn how to use the commands `whatis` and `man` and how to navigate in the help text. You find out how often the man pages of the `info` command contain the word “filename”.

To get help about the command `info`, do the following:

1. From the GNOME desktop, open the main menu.
2. Select **More Applications**.
3. Enter **term** into the Filter text box.
4. Select the **Gnome Terminal** icon to start a terminal emulation.
5. Find the sections of the man pages for the command `info` by entering **whatis info**.
6. Read the first section (executable programs and shell commands) of the man pages of the command `info` by entering **man 1 info**.
7. To look for “filename”, enter **/filename**.
8. Scroll through the text with the up and down arrow keys.
9. When you finish viewing the information, exit (quit) the man page by typing **q**.

Leave the Terminal window open for the next exercise.

**(End of Exercise)**

**Exercise 4-2      Access and Use info Pages**

In this exercise, you learn how to use the info command and how to navigate through the info text.

To use info pages of the command info, do the following:

1. From the terminal window, display the info pages for the command info by entering **info info**.
2. Move the cursor to the first reference (Getting Started) by pressing **Tab**.
3. Follow the reference by pressing **Enter**.
4. Move the cursor to the reference **Quitting Info** by pressing **Tab** nine times.
5. Follow the reference by pressing **Enter**.
6. Return to the page Getting Started by typing **l** (lowercase L).
7. Exit the info file by typing **q**.
8. Close the terminal window.

***(End of Exercise)***

### **Exercise 4-3      Access Release Notes and White Papers Pages**

In this exercise, you access release notes and white paper pages. In part I, you access the HTML version of the release notes. In part II, you install the HTML howtos. In part III, you access the howto of the DSL configuration.

Do the following:

- [Part I: Access Release Notes](#)
- [Part II: Install Howtos](#)
- [Part III: Access Howtos](#)

#### **Part I: Access Release Notes**

To access release notes, do the following:

1. Start the file manager Nautilus by selecting the **geeko's Home** on the desktop.
2. Double-click the **File System** icon.
3. Double-click the **usr** icon.
4. Double-click the **share** icon.
5. Double-click the **doc** icon.
6. Double-click the **release-notes** icon.
7. Double-click the **SUSE\_Linux\_Enterprise\_Server\_10** icon.
8. Double-click the **RELEASE-NOTES.en.html** icon.

The Firefox web browser starts.

9. Read the Release Notes by selecting **RELEASE-NOTES.en.html** in the web browser.
10. Close the Firefox window.
11. Close the Nautilus window.

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## Part II: Install Howtos

To install howtos, do the following:

1. From the GNOME desktop, open the main menu.
2. Select **More Applications**.
3. Enter **ya** into the Filter text box.
4. Select the **YaST** icon to start YaST.
5. Enter the root password **novell** in the appearing dialog; then select **Continue** or press Enter.
6. The YaST Control Center appears.
7. From the YaST Control Center, select **Software > Software Management**.
8. From the Filter drop-down list, select **Search**.
9. In the Search textbox enter **howto**; select Search.
10. From the right side of the window, select the package **howtoenh**.
11. Select **Accept**.
12. (Conditional) If requested by YaST, insert the appropriate **SUSE Linux Enterprise Server 10 DVD**; then select **OK**.
13. When asked to install or remove more packages, select **No**.
14. Close the YaST Control Center by selecting **Close**.
15. (Conditional) If you installed from DVD, remove the DVD from your drive.

## Part III: Access Howtos

To access howtos, do the following:

1. Start the file manager Nautilus by selecting the **geeko's Home** on the desktop.
2. Double-click the **File System** icon.
3. Double-click the **usr** icon.

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4. Double-click the **share** icon.
5. Double-click the **doc** icon.
6. Double-click the **howto** icon.
7. Double-click the **html** icon.
8. Double-click the **DSL-HOWTO** icon.
9. Double-click the **index.html** icon.

The Firefox web browser starts.

10. Close the Firefox window.
11. Close the Nautilus window.

***(End of Exercise)***



## **Exercise 4-4 Find Help on the Web**

In this exercise, you learn how to find help on the web. You look for updates for SUSE Linux Enterprise Server 10 on the Novell support website. In part II, you use the Google Linux search engine to find information on GNOME and SLES10 in the internet.

Do the following:

- [Part I: Start Firefox](#)
- [Part II: Look for Patches at the Novell Website](#)
- [Part III: Use Google to Find Information](#)

### **Part I: Start Firefox**

To start Firefox, do the following:

1. Start Firefox by selecting the Firefox icon on the desktop.

### **Part II: Look for Patches at the Novell Website**

To look for patches at the Novell website, do the following:

1. In the Location bar enter **support.novell.com**.  
The Novell support home page appears.
2. Select **download > patches** in the left column.
3. Select **SUSE Patch Support Database (PSDB)**.
4. Select **by product**.
5. Select **SUSE Linux Enterprise Server 10 for x86 (i386)**.

You get a list of patches. You must have a registered SUSE product with upgrade protection in order to access the patch downloads.

### Part III: Use Google to Find Information

To use Google to find information, do the following:

1. When you finish, in the address field enter **www.google.com/linux**
2. In the text field at the top of the page, enter **gnome and sles10**
3. Select **Google Search**.
4. Select one or more of the displayed links.
5. When you finish, close the Firefox window.

***(End of Exercise)***

## SECTION 6 Work with the Linux Shell and Command Line

In this section of the workbook, you learn how to do the following:

- [“Execute Commands at the Command Line” on 6-2](#)

In this exercise, you use the history feature of the shell and get root permissions at the command line. You use the commands `history` and `su`.

- [“Perform Common Command Line Tasks” on 6-3](#)

In this exercise, you create an alias labeled “hello” that prints a personal welcome message “Hello *username*” on the screen.

- [“Work with Command Syntax and Special Characters” on 6-4](#)

In this exercise, you learn how to use wildcards and other special characters.

- [“Use Piping and Redirection” on 6-7](#)

In this exercise, you practice piping the output of standard commands into files and other commands.

**Exercise 6-1      Execute Commands at the Command Line**

In this exercise, you use the history feature of the shell and get root permissions at the command line. You use the commands history and su.

To execute commands at the command line, do the following:

1. Open a terminal window.
2. View the history cache by entering **history**
3. Press **Up-arrow** until you see an **ls** command you would like to execute; then press Enter.
4. Type **h** and press **Page Up** once.  
You should see the command **history** at the command line again.
5. Press Enter to execute the **history** command.
6. Switch to root by entering **su -**; then enter a password of **novell**.
7. Check to make sure you are logged in as root by entering **id**
8. Start YaST by entering **yast2**  
YaST should start in QT mode.
9. Quit YaST by selecting **File > Quit**.
10. Become the user geeko again by entering **exit**
11. Close the terminal window by entering **exit**

**(End of Exercise)**

**Exercise 6-2      Perform Common Command Line Tasks**

In this exercise, you create an alias labeled “hello” that prints a personal welcome message “Hello *username*” on the screen. At the end of this exercise, you remove this alias.

To understand common command line tasks, do the following:

1. Open a terminal window.
2. View all defined aliases by entering  
**alias**
3. Define a new alias by entering the following  
**alias hello='echo Hello \$USER'**
4. Check the functionality of the alias hello by entering  
**hello**
5. Check the command type of the command hello by entering  
**type hello**
6. Remove the alias by entering  
**unalias hello**
7. Close the terminal window.

***(End of Exercise)***

## **Exercise 6-3      *Work with Command Syntax and Special Characters***

In this exercise, you learn how to use wildcards and other special characters.

To learn how to use command syntax and special characters, do the following:

- [Part I: Change the Character Encoding](#)
- [Part II: Use Search Patterns](#)
- [Part III: Create Some More Files](#)
- [Part IV: Mask Special Characters](#)

### **Part I: Change the Character Encoding**

To change the character encoding, do the following:

1. Open a terminal window.
2. To change the character encoding from UTF-8 to POSIX, enter **LANG=POSIX**

### **Part II: Use Search Patterns**

To use search patterns, do the following:

1. List all filenames in the directory /bin/ that start with the character “a” by entering **ls /bin/a\***
2. List all file names in the directory /bin/ that consist of 4 characters by entering **ls /bin/????**
3. List all filenames in the directory /bin/ that consist of 4 or more characters by entering **ls /bin/????\***

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4. List all filenames in the directory `/bin/` that do not start with one of the characters from `a` to `r` by entering  
**`ls /bin/[!a-r]*`**

### Part III: Create Some More Files

To create some more files, do the following:

1. Start the file manager Nautilus by selecting **geeko's Home** at the desktop.
2. Create a new file by right-clicking the file view frame and selecting **Create Document > Empty File**.
3. Enter a filename of **My**; then press **Enter**.
4. Create a new file by right-clicking the file view frame and selecting **Create Document > Empty File**.
5. Enter a filename of **File**; then press **Enter**.
6. Create a new file by right-clicking the file view window and selecting **Create Document > Empty File**.
7. Enter a filename of **My File**; then press **Enter**.
8. Close the Nautilus window.

### Part IV: Mask Special Characters

To mask special characters, do the following:

1. From the terminal window, list the files `My` and `File` by entering  
**`ls -l My File`**
2. List the file `My File` by entering  
**`ls -l My\ File`**
3. Remove the files `My`, `File`, and `My File` by entering  
**`rm My File My\ File`**
4. Verify that the files have been removed by entering  
**`ls -l`**

5. Close the terminal window.

***(End of Exercise)***

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## **Exercise 6-4      Use Piping and Redirection**

In this exercise, you practice piping the output of standard commands into files and other commands.

To understand piping and redirection, do the following:

1. Open a terminal window.
2. Pipe the output of the `ls` command for the home directory (“~”) to a file by entering  
**`ls ~ > home_directory`**
3. Display the content of the file by entering  
**`cat home_directory`**
4. Append the output of the `ls` command for the root directory (“/”) to the file `home_directory` by entering  
**`ls / >> home_directory`**
5. Display the content of the file by entering  
**`cat home_directory`**
6. Overwrite the file `home_directory` with the output of the `ls` command by entering  
**`ls / > home_directory`**
7. Display the content of the file by entering  
**`cat home_directory`**
8. Write the output of the `ls` command on the screen and into the file `home_directory` by entering  
**`ls ~ | tee home_directory`**
9. Remove the file `home_directory` by entering  
**`rm home_directory`**
10. Verify that the file was removed by entering  
**`ls -l`**
11. Close the terminal window.

***(End of Exercise)***

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## SECTION 7 Use Linux Text Editors

In this section of the workbook, you learn how to do the following:

- [“Use vi to Edit Files in the Linux System” on 7-2](#)

In this exercise, you create an edit a file with the text editor vi.

## **Exercise 7-1      Use vi to Edit Files in the Linux System**

In this exercise, you create a new file `vi_test` with the text editor `vi`. In part II, you edit the text in the command mode of `vi`.

To use the command line editor `vi`, do the following:

- **Part I: Enter a Text**
- **Part II: Edit a Text**

### **Part I: Enter a Text**

To enter a text, do the following:

1. Open a terminal window.
2. Start `vi` by entering **vi**.
3. Switch to the insert mode by typing **i**.
4. Type the following two paragraphs of text (press **Enter** at the end of each line):

**Administrator training for SUSE Linux Enterprise Server  
10 will be held  
in Training Room 4 of Building B on Tuesday  
of next week.**

**Make sure you bring your SUSE Linux Enterprise Server  
10 Administration  
Manual. There will be wireless Internet access  
available in the training room.**

5. Exit the insert mode by pressing **Esc**.

### **Part II: Edit a Text**

To edit a text, do the following:

1. Move the cursor to the middle of the second line of the first paragraph.
2. Delete text to the right of the cursor by typing **D** (uppercase d).

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3. Undo the deletion by typing **u**.
4. Delete the character directly under the cursor by pressing **Delete**.
5. Copy the current line to the internal buffer by typing **y** twice.
6. Move the cursor to the beginning the first line of the second paragraph.
7. Insert the contents of the internal buffer after the current line by typing **p**.
8. Save the file with filename vi\_test by entering **:w vi\_test**.
9. Exit vi by entering **:q**.
10. Close the terminal window.

***(End of Exercise)***

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## SECTION 8    Manage Users, Groups, and Permissions

In this section of the workbook, you learn how to do the following:

- [“Manage User Accounts with YaST” on 8-2](#)

In this exercise, you create and remove an user account with the YaST user management module.

- [“Check User and Group Information on Your Server” on 8-5](#)

In this exercise, you write down the GIDs of some groups and the UIDs of some users. You also switch to user root with the su command.

- [“Create and Manage Users and Groups from the Command Line” on 8-7](#)

In this exercise, you add and remove an user from the command line.

- [“Manage File Permissions and Ownership” on 8-10](#)

In this exercise, you create directories with different permissions.

## **Exercise 8-1      Manage User Accounts with YaST**

In this exercise, you create and remove a user account with the YaST user management module. In part I, you create a new account labeled “tux” for the user “Tux Penguin” with the password of “novell”. In part II, you log in as user tux. In part III, you open the file `/etc/passwd` and look for the entries for `geeko` and `tux`. In part IV, you log in as `geeko` and remove `tux`’s account.

To manage user accounts with YaST, do the following:

- [Part I: Create a New User Account with YaST](#)
- [Part II: Log In as New User](#)
- [Part III: View the passwd File](#)
- [Part IV: Log In as User `geeko` and Remove the New User Account](#)

### **Part I: Create a New User Account with YaST**

To create a new user account with YaST, do the following:

1. From the GNOME desktop, select **Applications > System > YaST**; then enter a password of **novell** and select **Continue**.

The YaST Control Center appears.

2. From the YaST Control Center, select **Security and Users > User Management**.
3. Add a new user by selecting **Add**.
4. Enter the following information:
  - ☐ User’s Full Name: **Tux Penguin**
  - ☐ Username: **tux**
  - ☐ Password: **novell**
  - ☐ Confirm Password: **novell**
5. When you finish, select **Accept**.
6. Confirm the password warning by selecting **Yes**.

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7. Save the new settings by selecting **Finish**.
8. Close the YaST window.

## Part II: Log In as New User

To log in as the new user, do the following:

1. From the bottom panel, log out by selecting **Desktop > Log Out**.
2. In the log out dialog, select **OK**.  
X Window is restarted and the GUI login screen appears.
3. In the Username field enter **tux** and press **Enter**.
4. In the Password field enter **novell** and press **Enter**.
5. Close or cancel any displayed dialogs.

## Part III: View the passwd File

To view the passwd file, do the following:

1. Start the Nautilus file manager by double-clicking the **tux's Home** icon on the desktop.  
The content of tux's home directory is displayed.
2. Browse to the directory **/home**.  
Notice there are directories for users tux and geeko.
3. Browse to the directory **/etc**.
4. Select the file **passwd**.  
Notice the entries for users tux and geeko at the end of the file.
5. Close all windows.

## Part IV: Log In as User geeko and Remove the New User Account

To log in as user geeko and remove the new user account, do the following:

1. From the bottom panel, log out by selecting **Desktop > Log Out**.
2. In the log out dialog, select **OK**.  
X Window is restarted and the GUI login screen appears.
3. Log in as **geeko** with a password of **novell**.
4. Start YaST by selecting **Applications > System > YaST**; then enter a password of **novell** and select **Continue**.
5. From the YaST Control Center, select **Security and Users > User Management**.
6. From the list of users, select **tux**; then select **Delete**.
7. Select **Delete Home Directory /home/tux**; then select **Yes**.
8. Select **Finish**.
9. Confirm that the user tux has been removed by doing the following:
  - a. Start the Nautilus file manager by double-clicking the **geeko's Home** icon on the desktop.  
The content of Geeko's home directory is displayed.
  - b. Browse to the directory **/home**.  
Notice there is only one entry for user geeko.
  - c. Browse to the directory **/etc**.
  - d. Select the file **passwd**.  
Notice the entry for tux has been removed from the end of the file.
  - e. Close the Nautilus window.
10. Close the YaST Control Center.

**(End of Exercise)**

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**Exercise 8-2      Check User and Group Information on Your Server**

In this exercise, you write down the GIDs of some groups and the UIDs of some users. You also switch to user root with the `su` command.

Check the user and group information on your SUSE Linux Enterprise Server by doing the following from a command line:

1. Make sure you are logged in as **geeko** to the GNOME desktop.
2. Start a terminal emulation from the main menu.
3. Switch to user root by entering **su -** with a password of **novell**.
4. Display all information in the file `/etc/group` by entering **less /etc/group**.
5. Write down the GIDs of the following groups:
  - a. ftp
  - b. lp
  - c. nobody
  - d. root
  - e. www
  - f. users
6. Exit by typing **q**.
7. Display the contents of the file `/etc/passwd` by entering **less /etc/passwd**.
8. Write down the UIDs of the following groups:
  - a. ftp

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- b. lp
  - c. nobody
  - d. root
  - e. wwwrun
  - f. geeko
9. Exit by typing **q**.
10. Display the identity information of the logged in user by entering **id**.
- Because you have root permissions, you see UID, GID, and group information for root.
11. Exit the su state and return to the geeko user by entering **exit**.
12. Enter **id** again.
- Notice that the groups displayed for geeko are different from those displayed for root.
13. Close the terminal window by entering **exit**.

***(End of Exercise)***

### **Exercise 8-3      *Create and Manage Users and Groups from the Command Line***

In this exercise, you add and remove an user from the command line. In part I, you add a new user account labeled “tux” for user “Tux Penguin” with the `useradd` command. You also look for the new entries in the files `/etc/passwd` and `/etc/shadow`. In part II, you set the password for tux to “novell” with the command `passwd`. In part III, you switch to user tux with the command `su` and to change the password to “d1g1t@l” with the command `passwd`. In part IV, you remove the account of user tux with the command `userdel`. You also change a password.

To manage user accounts, do the following:

- [Part I: Add a New User](#)
- [Part II: Create a Password for the New User](#)
- [Part III: Log In as New User and Change Your Password](#)
- [Part IV: Remove the New User Account](#)

#### **Part I: Add a New User**

To add a new user, do the following:

1. Open a terminal window; then switch to root (**su -**) with a password of **novell**.
2. Create a new local user by entering the following  
**useradd -c “Tux Penguin” -m tux**
3. Verify that a home directory for tux was created by entering  
**ls /home**
4. Verify that there is a entry for the tux user in `/etc/passwd` by entering  
**cat /etc/passwd**.

Notice the “x” in the second field, indicating that the password for tux is stored in `/etc/shadow`.

5. Have a look at the password in /etc/passwd by entering  
**cat /etc/shadow**.

Notice the “!” in the second field, indicating that there is no valid password for tux.

## Part II: Create a Password for the New User

To create a password for the new user, do the following:

1. Create a password for the user tux by entering  
**passwd tux**.
2. Enter the password **suse** twice.
3. Log out as root by entering  
**exit**

## Part III: Log In as New User and Change Your Password

To log in as the new user and change your password, do the following:

1. Log in as tux by entering  
**su - tux**
2. Enter the tux password (**suse**).
3. Change the password of the user tux by entering  
**passwd**
4. Enter the old password of the user tux (**suse**).
5. Try to change the password to novell by entering  
**novell**

You receive a warning that the password is too simple.

6. Enter **d1g1t@l** as new password (twice).
7. Log out as user tux by entering  
**exit**

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## Part IV: Remove the New User Account

To remove the new user account, do the following:

1. Switch to user root (**su -**) with a password of **novell**.
2. Delete the user tux by entering  
**userdel -r tux**
3. Verify that the home directory for tux has been removed by entering  
**ls /home**
4. Verify that there is no entry for tux in /etc/passwd by entering  
**cat /etc/passwd**
5. Close the terminal window.

***(End of Exercise)***

## **Exercise 8-4      *Manage File Permissions and Ownership***

In this exercise, you create directories with different permissions.

In part I, you create a directory `~/files/` with two subdirectories `private/` and `public/`. You change the permissions for the directory `private/` that only root has read, write, and execute permissions and the permissions of `public/` that everyone has rights to the directory.

In part II, you switch to user `geeko`. You try to create a file “`geeko`” inside each of these directories. For the file `~/public/geeko`, you have to change the permissions that the users group has write permissions and other does not have any permissions.

To manage file permissions and ownership, do the following:

- [Part I: Create a Private and a Public Directory](#)
- [Part II: Try to Create a File as a Normal User in Both Directories](#)

### **Part I: Create a Private and a Public Directory**

To create a private and a public directory, do the following:

1. Open a terminal window, and switch to root (**su -**) with a password of **novell**.
2. Create the directory `/files/` by entering  
**mkdir /files**
3. Change to the directory `/files/` by entering  
**cd /files**
4. To create the subdirectories `private` and `public` under `/files/` enter  
**mkdir private public**
5. Change the permissions on the private directory so that only root has read, write, and execute permissions by entering the following  
**chmod 700 private**

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6. Change permissions on the public directory so that everyone has rights to the directory by entering the following  
**chmod 777 public**
7. Verify the changes by entering  
**ls -l**

## **Part II: Try to Create a File as a Normal User in Both Directories**

To try to create a file as a normal user in both directories, do the following:

1. Switch to virtual terminal 3 by pressing **Ctrl+Alt+F3**.
2. Login as **geeko** with a **novell** password.
3. Switch to the directory /files/ by entering  
**cd /files**
4. Try to create a file named geeko in the private directory by entering  
**touch private/geeko**

Notice that permission is denied.

5. Try to create a file named geeko in the public directory by entering  
**touch public/geeko**
6. Verify that the file is created by entering  
**ls public**
7. Change to the public directory by entering  
**cd public**
8. List the permissions of the file geeko by entering  
**ls -l geeko**

Notice that the group **users** and other have only read permission for the file.

9. Change permissions so that the group *users* has write permissions and other does not have any permissions by entering the following  
**chmod g+w,o-r geeko**
10. Verify the change by entering  
**ls -l**
11. Log out as geeko by entering **exit** (or by pressing **Ctrl+D**); then return to the GNOME Desktop (**Ctrl+Alt+F7**).
12. Close the terminal window.

***(End of Exercise)***

## APPENDIX A    Use the KDE Desktop Environment

In this section of the workbook, you learn how to do the following:

- [“Install the KDE Desktop Environment” on A-2](#)

In this exercise, you install the KDE desktop environment parallel to GNOME. You also log out from the GNOME environment.

- [“Explore Your KDE Desktop” on A-3](#)

In this exercise, you explore your KDE desktop.

## **Exercise A-1      *Install the KDE Desktop Environment***

In this exercise, you install the KDE desktop environment parallel to GNOME. You also log out from the GNOME environment.

Do the following from the GNOME desktop:

1. Start YaST from the main menu.
2. Enter **novell** as root password and select **Continue**.
3. Select **Software Management**.
4. Select **Patterns** from the **Filter** pull-down menu.
5. Select **KDE Desktop Environment** in the left frame; then select **Accept**.
6. Confirm the information dialog, about automatically resolved dependencies by selecting **Continue**.
7. Insert the installation media YaST asks for and select **OK**.
8. When asked to change the installation media, change it and select **OK**.
9. When finished and asked to install or remove more packages, select **No**.
10. Close the YaST window.
11. Select **Desktop > Log Out** to log out from GNOME.
12. In the confirmation dialog make sure that **Log out** is selected and select **OK**.

***(End of Exercise)***

## **Exercise A-2      Explore Your KDE Desktop**

In this exercise, you explore your KDE desktop. In part I, you log in to the KDE environment. In part II, you use Konqueror to copy the file `/etc/DIR_COLORS` into your home directory. In part III, you rename the copied file to “example.txt”. In part IV, you log out from the KDE desktop.

Do the following from the GUI login screen:

- [Part I: Log In to the KDE Desktop Environment](#)
- [Part II: Copy a File with Konqueror](#)
- [Part III: Rename a File](#)
- [Part IV: Log Out](#)

### **Part I: Log In to the KDE Desktop Environment**

To log in to the KDE desktop environment, do the following:

1. Select **Session**.
2. Select **KDE**; then select **OK**.
3. In the Username field, enter **geeko** and press **Enter**.
4. In the Password field, enter **novell** and press **Enter**.
5. Select **Just For This Session**.

The KDE desktop environment starts and initial dialogs appear.

### **Part II: Copy a File with Konqueror**

To copy a file with Konqueror, do the following:

1. Start the file manager Konqueror by selecting the house icon in Kicker.
2. To view the root directory in the navigation panel, select the red folder icon at the left of the navigation panel.

3. View the contents of the /etc directory by selecting **etc** in the navigation panel (a single mouse click).
4. Copy the file /etc/DIR\_COLORS to the directory /tmp/ by scrolling down and selecting the **DIR\_COLORS** file icon, dragging it over the **tmp** folder icon in the navigation area, and releasing the mouse button.
5. From the popup menu, select **Copy Here**.
6. View the contents of the directory /tmp by selecting **tmp** in the side panel (a single mouse click).

### Part III: Rename a File

To rename a file, do the following:

1. Rename the copied file by right-clicking the **DIR\_COLORS** file icon and then selecting **Rename** from the popup menu.
2. For the new filename, type **example.txt**; then press **Enter**.
3. Quit Konqueror by selecting the **X** button in the top right corner of the window.

### Part IV: Log Out

To log out, do the following:

1. Open the KDE menu by selecting the leftmost icon in the bottom panel.
2. Select **Log Out**; then select **End Current Session**.

You are returned to the GUI login screen.

**(End of Exercise)**