1.4.3 Linux Facts

Linux is an open source operating system. You can even create your own custom version of Linux called a *distribution*. Some of the more popular Linux distributions include openSUSE, Fedora, and Ubuntu.

Like Windows, Linux provides two different user interfaces. There is a a graphical interface where you can click on things with a mouse and make selections to bring up applications. There is also a command line interface called the *shell* that allows you to enter commands at the shell prompt to manage the system. The command line interface is consistent across all distributions of Linux. Each Linux distribution uses a slightly different graphical user interface. If you learn how to manage Linux systems from within a shell, then you can manage just about any Linux distribution.

The shell is often referred to as the bash (Bourne-again shell) shell.

A superuser in Linux is equivalent to an administrator in Windows.

Linux has two especially important features, command history and command completion. Command history saves commands entered at the shell prompt. The command completion feature tries to guess a command you are entering and will complete the command for you if you press the TAB key.

Use the shell commands listed in the following table to manage the file system on Linux.

Command	Description
pwd	Displays the path of the current directory on the screen. pwd stands for print working directory.
ifconfig	Displays the IP address and the subnet mask assigned to this system.
ls	Displays a list of files and subdirectories that exist within a directory. Several options are commonly used with this command: ▪ **-a** displays all files, including hidden files. ▪ **-l** displays a detailed (long) listing of directory contents including ownership, permissions, modification dates, and file sizes. ▪ **-R** displays the contents of the directory and all of its subdirectories.
--help	Displays a brief summary of how to use the command.
bash	Starts a new Bourne-again shell (bash) session.
man	Displays the manual page for a command. It's very similar to the help screen, but it provides more detail. Use the Q key to quit and go back to the shell prompt.
info	Displays more extensive documentation about the command. Use the Q key to quit and go back to the shell prompt.
cd	Changes directories in the file system. For example, to change to the /home directory in the file system, you would enter **cd /home** at the shell prompt.
cp	

	Copies files and directories from one location in the file system to another. For example, to copy the widget.odt file to the /home/rtracy directory, you would enter **cp widget.odt /home/rtracy** at the shell prompt. To copy an entire directory structure, include the **-R** option, which specifies that the directory contents be recursively copied.
mv	Moves and/or renames files and directories from one location or name to another. For example, to move the widget.odt file in your current working directory to the /home/rtracy directory, you would enter **mv widget.odt /home/rtracy** at the shell prompt. Before moving it, you could rename it to newwidget.odt by entering **mv widget.odt newwidget.odt** or, alternatively, you could rename and move it simultaneously by entering **mv widget.odt /home/rtracy/newwidget.odt**.
rm	Deletes files and directories from the file system. For example, to delete the widget.odt file, you would enter **rm widget.odt** at the shell prompt.
cat	Displays the contents of a text file on the screen. For example, to view the contents of the widget.txt file, you would enter **cat widget.txt** at the shell prompt.
less	Displays the contents of a text file on the screen, pausing the output one screen at a time. For example, to view the contents of the widget.txt file one page at a time, you would enter **less widget.txt** at the shell prompt.
head	Displays the first few lines of a text file on the screen. For example, to view the first lines of the widget.txt file, you would enter **head widget.txt** at the shell prompt.
tail	Displays the last few lines of a text file on the screen. For example, to view the last lines of the widget.txt file, you would enter **tail widget.txt** at the shell prompt. The **-f** option can be used with tail to monitor a file for changes. If new content is added to the end of the file (such as a log file), the new lines will be displayed on the screen.
vi	Edits the contents of a text file. The vi uses four different operating modes: ▪ Command mode ▪ Command-line mode ▪ Insert mode ▪ Replace mode For example, to edit the contents of the widget.txt file, you would enter **vi widget.txt** at the shell prompt. You would then press the **i** key to enter Insert mode and make the necessary changes to the file. When done editing the file, you would press the **Esc** key to enter Command mode. Then you would press the **:** key to enter command-line mode where you would enter **exit** or **wq** (for write and quit) to save your changes and exit the vi editor.
su	Allows you to switch user accounts. ▪ **su -** (su with a space and a hyphen) is used to switch to the root user with the home directory and environment variables assigned to the root user.
shutdown	Shuts down or reboots the system in a secure manner. The syntax of the shutdown command is **shutdown -h|-r +m message**. The options for the shutdown command include:

	▪ **+m** specifies when to perform the shutdown operation. **m** is the amount of time is specified in minutes. ▪ **-h** instructs the system to shut down and power down. ▪ **-r** instructs the system to reboot after the shutdown. ▪ **-p** powers off the machine. ▪ **message** specifies a message that is sent to all users that accompanies the standard shutdown notification.