New Lab Intro to KDE Terminal Konsole

After completing this lab activity the student will be able to;
Access the KDE Terminal Konsole and enter basic commands.
Enter commands using a typical command line interface (CLI).
Explain the use of the following commands, ls, ls –al, dir, mkdir, whoami,
Explain the directory structure of a typical user.

This lab activity will introduce you to one of the many command line interfaces available
in Linux/UNIX operating systems and a few of the most basic commands. The command
line interface you will be using for this lab activity is the console called the Konsole and
is also referred to as Terminal.

Note: As you notice, in the KDE system many features are written with the capital letter
"K" in place of the first letter or the utility to reflect the fact it was modified for the KDE
system.

The original UNIX system did not use a graphical user interface GUI but rather was a
command line interface (CLI) similar to the command prompt in Windows operating
systems. The command line interface is referred to as a shell. Even today the command
line interface (the shell) is used to issue commands on a Linux server to minimize system
resources. For example, there is no need to start the GUI on the server to add a new user
to an existing system. Starting the GUI will reduce the system performance because it
requires RAM to run the GUI. A GUI will affect the overall performance of the server
when it is supporting many users (clients). Using the command line interface will have
minimal effect on the server performance.
Another reason for learning to use the command line interface is when the GUI system
fails to load. When the GUI fails to load, the CLI may be the only way to repair the
server. There are many different command line interfaces used in UNIX, as well as
Linux. Two very well known command line interface shells are Bourne Again Shell
(bash) and Korn Shell (ksh). When the shell is incorporated into desktop system, it is
referred to as a shell console or terminal emulator.

An important difference between commands issued in UNIX/Linux is that they are case
sensitive. This means that commands designed to be issued in lower case letters will not
be recognized if issued in upper case. Microsoft Windows command prompt will
recognize commands in upper or lower case. Please note the fact that letter case is
important. Also not the fact that certain commands are restricted to use by the super user
root and can not be issued by ordinary users. For example the ifconfig command will not
be recognized by some Linux systems except when issued by the super user root. You
would have to change to the superuser to issue that particular command.

Common Command chart and compare to Windows command prompt commands.

cd	Change the current directory.
clear	Clear the display area.
dir	Display the current directory.
finger	Display information about the current user.
halt	Shut down the system.
ifconfig	Display wired network adapter information.
iwconfig	Display wireless adapter information.
l	List files in the current directory.
ls	List files in the current directory.
ls –a	List files both hidden and system files.
ls –l	List files in long fashion.
man	Access the manual pages.
mkdir	Make or create a new directory.
ping	Similar to Microsoft ping command.
pwd	Print or display the current working directory path.
reboot	Reboots the system.
rm	Remove or delete a file.
rmdir	Remove or delete a directory.
su	Switch from the current user.
touch	Create a file.
traceroute	Similar to tracert in Microsoft operating systems.
who	Displays all users currently logged on.
whoami	Displays who the current user is.

You leave or close the KDE Konsole by simply by issuing the command **quit** at the prompt or selecting close session or quit from the drop down menu under Session at the top left corner of the Konsole screen.
Note: Previous versions used "quit" to end a session. Many times an obsolete or legacy command can still be issued to the system.

The two most common reasons for a student to fail to properly issue a command from the terminal command prompt is the use of uppercase rather than lower case letters in the command and attempting to issue a command requiring super user privilege.

Materials Required
Linux SuSE (Note: you can perform this lab activity on most versions of SuSE Linux as well as some other versions.

1. _____ Report to your assigned workstation and boot the Linux system if needed.

2. ____ Logon as a user using your assigned user name and password, not as root.
3. ____ Open the KDE Konsole. To open the Konsole simply select the Application Launcher and then select "Terminal" located on the "Favorites" tab.
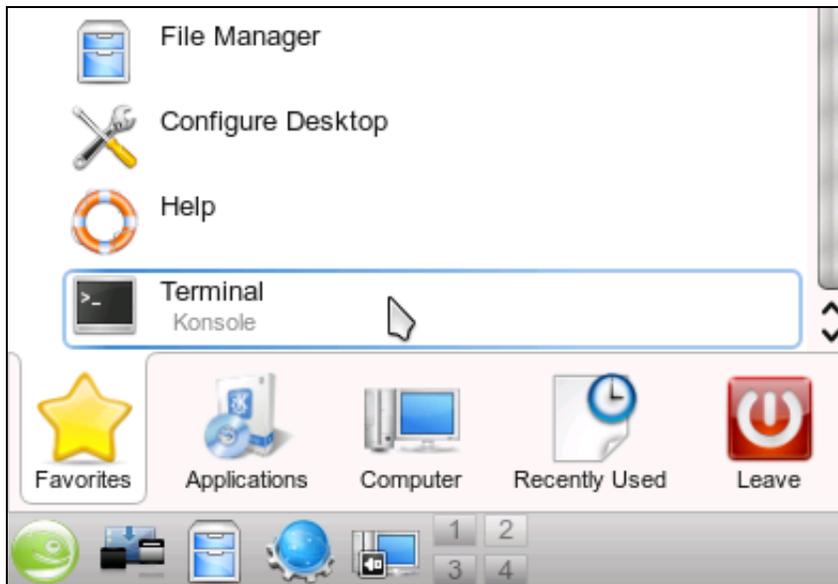
Favorites Terminal Cropped

4. ____ Now issue the command ls and note what appears on the screen. The ls command consists of low case letter L not the number one followed by the lower case letter S. You should a display of directories and files similar to the ones in the figure below.
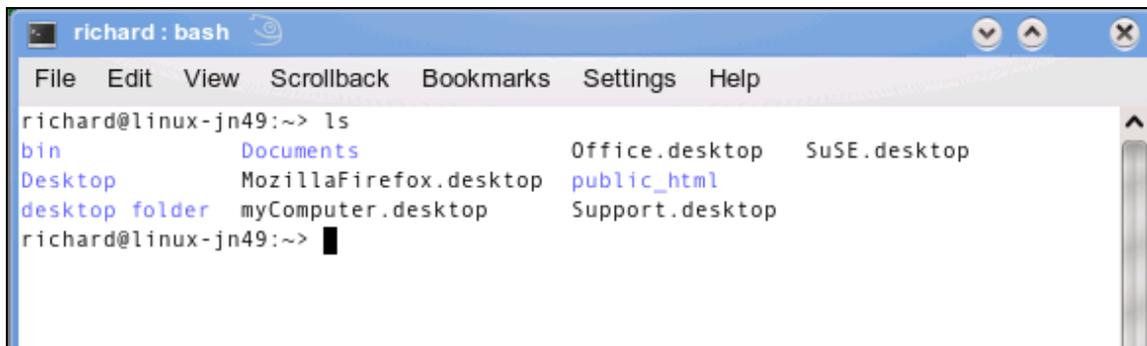
LS Command Cropped

5. ____ Now issue the ls command using uppercase letters. What was the result of using upper case letters in the command? The command should not be recognized. No files or directories should display.

6. ____ The ls command has switches that will modify the command. Two switches often used are a and l. The a switch when issued modifies the ls command to list all files, which means show hidden and system files. The l switch modifies the ls command to list the files in long list fashion. Issue the command ls –al and observe the results. You should see a screen display similar to the one below.
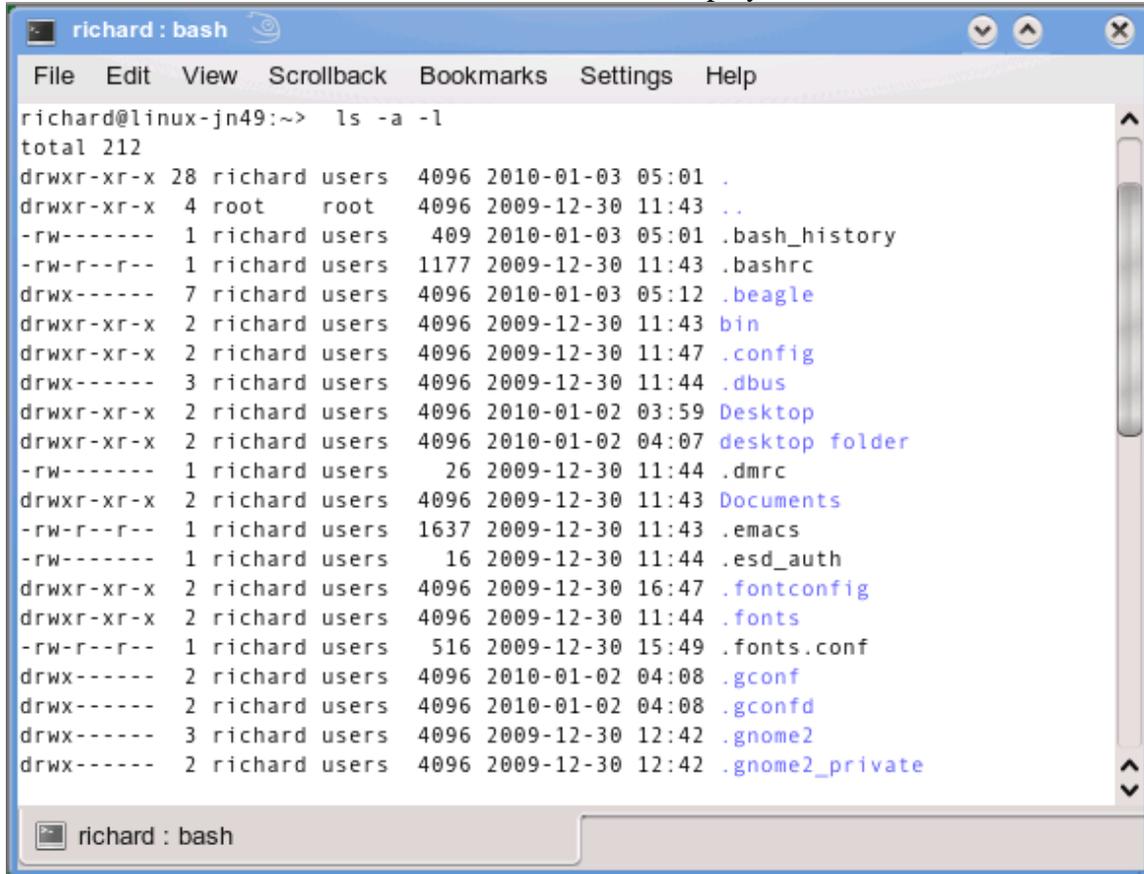
```
richard : bash

File   Edit   View   Scrollback   Bookmarks   Settings   Help

richard@linux-jn49:~>  ls -a -l
total 212
drwxr-xr-x 28 richard users  4096 2010-01-03 05:01 .
drwxr-xr-x  4 root    root   4096 2009-12-30 11:43 ..
-rw-------  1 richard users   409 2010-01-03 05:01 .bash_history
-rw-r--r--  1 richard users  1177 2009-12-30 11:43 .bashrc
drwx------  7 richard users  4096 2010-01-03 05:12 .beagle
drwxr-xr-x  2 richard users  4096 2009-12-30 11:43 bin
drwxr-xr-x  2 richard users  4096 2009-12-30 11:47 .config
drwx------  3 richard users  4096 2009-12-30 11:44 .dbus
drwxr-xr-x  2 richard users  4096 2010-01-02 03:59 Desktop
drwxr-xr-x  2 richard users  4096 2010-01-02 04:07 desktop folder
-rw-------  1 richard users    26 2009-12-30 11:44 .dmrc
drwxr-xr-x  2 richard users  4096 2009-12-30 11:43 Documents
-rw-r--r--  1 richard users  1637 2009-12-30 11:43 .emacs
-rw-------  1 richard users    16 2009-12-30 11:44 .esd_auth
drwxr-xr-x  2 richard users  4096 2009-12-30 16:47 .fontconfig
drwxr-xr-x  2 richard users  4096 2009-12-30 11:44 .fonts
-rw-r--r--  1 richard users   516 2009-12-30 15:49 .fonts.conf
drwx------  2 richard users  4096 2010-01-02 04:08 .gconf
drwx------  2 richard users  4096 2010-01-02 04:08 .gconfd
drwx------  3 richard users  4096 2009-12-30 12:42 .gnome2
drwx------  2 richard users  4096 2009-12-30 12:42 .gnome2_private

richard : bash
```

LS L A Cropped

All the information about the files and directories are displayed across the screen. Information about the file is read from left to right. The name of the file is displayed at the far right. The other information about the file will be explained in detail in a later lab activity. For now you are just becoming familiar with how to use the Konsole.

7. ___ Enter the **l** (lower case L) command and observe the results.
8. ___ Now issue the **dir** command. The contents of other directory should be listed.
9. ___ Create an empty file by using the **touch** command. Issue the command touch zfile and then view the current directory contents using the l or ls command to verify the creation of the new file called zfile. The file should appear at the bottom of the list.
10. ___ Now create another file called zzfile and verify the creation of the new file using **l** or **ls** command.
11. ___ Create a directory called zdir using the **mkdir** command. Issue the command **mkdir zdir**. Verify the creation of zdir using the l or ls command.

12. ___ You can remove or delete the directory by using the **rmdir** command. Files can be removed or deleted using the **rm** command. To remove the directory, simply issue the command rmdir followed by the name of the directory – for example rmdir zdir. To remove a file, simply issue the **rm** command followed by the file name – for example **rm zfile**. Remove the zdir directory and the zfile and zzfile files using the appropriate commands. Verify they have all been removed using the **l** or **ls** command.
13. ___ Enter the **whoami** command to display the current user. The current user account name should be displayed.
14. ___ Enter the **who** command to display current information about the user.
15. ___ Another useful command that will allow you to view current information about the user is **finger**. Issue the command **finger** at the CLI and view the results.
16. ___ Now log on as a different user using the switch user option located in the Application Launcher under the xxx tab. A message dialog box will ask if you would like to create a new session using desktop 2. You will also see an option asking if you would like to lock the current screen or desktop. Do not select the option to lock the screen.
17. ___ After the new user session loads open the Konsole and issue the whoami, who and finger commands. Observe the results of each command and write a brief summary of the observation.

Whoami _____

Who _____

Finger _____

18. ___ Logoff the current user and return to your own logon session.
19. ___ Some commands require the root password or you must be logged on as the root. You need not log off and log back on as the root. A quick way to change to the root is to issue the **su** command. **Su** represents immediately after issuing the **su root** command you will be prompted for the root password. After providing the root password you will be issuing commands as the root user. You will remain the root user until you exit the CLI or switch to another user. Enter the **su root** command followed with the root password now.
20. ___ You can shut-down or reboot the Linux server or desktop from the Konsole using the commands **halt** and **reboot**. The **halt** command will shutdown the server/computer and the **reboot** command will reboot the server/computer. Try each command now. You must be the root to perform these commands.
21. ___ Standard in all versions of UNIX/Linux is the user manual referred to as the **man** pages. The manual pages are written in text-only format. To access the manual pages, enter the **man** command at the prompt followed by the command you want information about. For example, **man finger** will display information in the man pages about the finger command including options and arguments. Issue the man finger command now and observe the results. You can use the "Enter" key or "Spacebar" to view additional lines of text. The spacebar displays an additional page and the "Enter" key displays one additional line of text. After you finish viewing the information you can use the lower case "Q" to quit or close the man pages. You can also use the mouse to close the manual pages.

Note you can also issue info and xxxxxxx.to display information.

22. ___ Close the manual pages.
23. ___ Display information about the ls command using the man pages by entering man ls.
24. ___Display information about the following commands, **su**, **finger**, **whois**, and **who**.
25. ___ Another handy command is pwd. The pwd command displays the current working directory for the location in the directory structure you are presently in when you issue the command. For example, when the user "Richard" issues the pwd command, his exact location in the directory structure will be displayed as related to his home directory. For example the results will be similar to /home/richard. Issue the pwd command now and observe the results,
26. ___ Three very important troubleshooting commands are **ping**, **traceroute** and i**fconfig**. The ping command is issues in similar fashion as is ping when using the Windows command prompt. The one big difference is that when you issue the ping command in Linux, it will continually repeat until you use the keyboard combination "**Ctrl – C**". Enter the **ping** command now followed by **127.0.0.1**. Wait for the results and then use the **Ctrl – C** key combination to stop the ping.
27. ___ Now issue the ping command once more but this time use the ping command switch **–c** followed by a number. The –c represents count which is the number of times to issue the ping command. For example **ping 127.0.0.1 –c 4** will result in four pings being issues and then stop. Try the command now **ping 127.0.0.1 –c 4**.
28. ____ The Linux **traceroute** command is similar to Microsoft's' t**racert** command and produces similar results. If your Linux workstation is connected to the Internet, try issuing the **traceroute** command now to a known Internet location such as www.rmroberts.com. For example traceroute www.rmroberts.com or some other known URL. Observe the results.
Note: Any user can issue a ping command but only the root can issue the Traceroute command.
29. ___ The **ifconfig** command is similar to the ipconfig command used in Windows. Issue the **ifconfig** command at the command prompt and observe the results. You should see the assigned IP address for the network adapter.
30. ___ Access the man pages to learn more about the **ping**, **traceroute** and **ifconfig** commands.
31. ___ Review the commands used in this lab activity.
32. ___ Return all materials to their proper storage area and then answer the review questions.

Review Questions
1. What is the name of the KDE terminal emulator? Konsole.
2. What does the acronym CLI represent? Command Line Interface.
3. Why would a system administrator use the command line interface rather than a graphical interface? To conserve system resources and to troubleshoot a GUI failure.
4. What command ends the Konsole session? Exit.

5. What commands can be used to list all the files in a directory including the hidden files? ls –a
6. What command is used to display the current logged on user? Whoami.
7. What command is used to display all currently logged on to the system? who
8. What command can be used to display more detailed information about the user other than whoami? finger
9. What command is used to create an empty file? touch
10. What command is used to stop or shutdown the system? halt
11. What command is used to remove or delete a file? rm
12. What command is used to delete or remove a directory? rmdir
13. Who can use the halt command? superuser
14. What are the results of the following command ping 127.0.0.1 –c 8? The ping command is issued eight times for IP address 127.0.0.1.
15. What keyboard combination is used to stop the ping command? Ctrl – C.
16. What command would you use to find more information about the finger command? man finger.
17. What are the two most common reasons for a student to fail to properly issue a command from the Konsole command prompt? The use of uppercase rather than lower case letters in the command and attempting to issue a command requiring super user privilege.

Review Question Answers

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