**Lab Chapter 3 Copied from RH Academy Chapter 3**

**Chapter 03 section 06**

## Guided Exercise: Managing Files Using Command-line Tools

In this exercise you will create, organize, copy, and remove files and directories.

**Log in as the student user on workstation using student as the password.**

This command prepares your environment and ensures that all required resources are available.

[student@workstation ~]$ **lab start files-manage**

**Procedure 3.1. Instructions**

1. Log in to the servera machine as the student user. In the student user's home directory, create three subdirectories: Music, Pictures, and Videos.
   1. Use the ssh command to log in to the servera machine as the student user. The systems are configured to use SSH keys for authentication; therefore, a password is not required.
   2. [student@workstation ~]$ **ssh student@servera**
   3. ...output omitted...

[student@servera ~]$

* 1. In the student user's home directory, use the mkdir command to create three subdirectories: Music, Pictures, and Videos.

[student@servera ~]$ **mkdir Music Pictures Videos**

* 1. Run the following command to verify that the 3 directories were created: **ls**

**Screenshot of output of ls command:**

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1. Use the touch command to create sets of empty practice files to use during this lab. In each set, replace X with the numbers 1 through 6.
   1. Create six files with names of the form song*X*.mp3.
   2. Create six files with names of the form snap*X*.jpg.
   3. Create six files with names of the form film*X*.avi.







1. Run the following command to verify that the 3 directories were created: **ls -l**

**Screenshot of output of ls -l command:**

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1. Move the song files (.mp3 extension) to the Music directory, the snapshot files (.jpg extension) to the Pictures directory, and the movie files (.avi extension) to the Videos directory.
   1. Notice that each mv command is on two lines
   2. You are able to do that if you end the first part of the command with a \

[student@servera ~]$ **mv song1.mp3 song2.mp3 song3.mp3 \**

**song4.mp3 song5.mp3 song6.mp3 Music**

[student@servera ~]$ **mv snap1.jpg snap2.jpg snap3.jpg \**

**snap4.jpg snap5.jpg snap6.jpg Pictures**

[student@servera ~]$ **mv film1.avi film2.avi film3.avi \**

**film4.avi film5.avi film6.avi Videos**

1. Run the following command to view the content of the 3 directories:

**ls -l Music Pictures Videos**

**Screenshot of output of ls -l command:**

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1. Create three subdirectories for organizing your files, and name the subdirectories friends, family, and work. Use a single command to create all three subdirectories at the same time. Then run the ls -l command. Your output should look like the one below:

[student@servera ~]$ **mkdir friends family work**

[student@servera ~]$ **ls -l**

-----output should look like this

total 0

drwxr-xr-x. 2 student student 6 Mar 7 21:01 family

drwxr-xr-x. 2 student student 6 Mar 7 21:01 friends

drwxr-xr-x. 2 student student 108 Mar 7 21:00 Music

drwxr-xr-x. 2 student student 108 Mar 7 21:00 Pictures

drwxr-xr-x. 2 student student 108 Mar 7 21:00 Videos

drwxr-xr-x. 2 student student 6 Mar 7 21:01 work

1. Copy files that contain numbers 1 and 2 to the friends directory and files that contain numbers 3 and 4 to the family directory. Keep in mind that you are making copies; therefore, the original files must remain in their original locations after you complete the step. Then run the ls -l command. Your output should look like the one below:

When you copy files from multiple locations into a single location, Red Hat recommends that you change to the destination directory before you copy the files. Use the simplest path syntax, whether absolute or relative, to reach the source for each file management task.

* 1. Copy files that contain numbers 1 and 2 to the friends directory.

[student@servera ~]$ **cd friends**

[student@servera friends]$ **cp ~/Music/song1.mp3 ~/Music/song2.mp3 \**

**~/Pictures/snap1.jpg ~/Pictures/snap2.jpg ~/Videos/film1.avi \**

**~/Videos/film2.avi .**

[student@servera friends]$ **ls -l**

-----output should look like this

total 0

-rw-r--r--. 1 student student 0 Mar 7 21:02 film1.avi

-rw-r--r--. 1 student student 0 Mar 7 21:02 film2.avi

-rw-r--r--. 1 student student 0 Mar 7 21:02 snap1.jpg

-rw-r--r--. 1 student student 0 Mar 7 21:02 snap2.jpg

-rw-r--r--. 1 student student 0 Mar 7 21:02 song1.mp3

-rw-r--r--. 1 student student 0 Mar 7 21:02 song2.mp3

1. Copy files that contain numbers 3 and 4 to the family directory. Then run ls -l

[student@servera friends]$ **cd ../family**

[student@servera family]$ **cp ~/Music/song3.mp3 ~/Music/song4.mp3 \**

**~/Pictures/snap3.jpg ~/Pictures/snap4.jpg ~/Videos/film3.avi \**

**~/Videos/film4.avi .**

1. Run the following command to view the content of family:

**ls -l**

**Screenshot of output of ls -l command:**

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1. Copy the family and friends directories and their contents to the work directory. Then run ls -l

[student@servera family]$ **cd ../work**

[student@servera work]$ **cp -r ~/family ~/friends .**

[student@servera work]$ **ls -l**

-----output should look like this

total 0

drwxr-xr-x. 2 student student 108 Mar 7 21:05 family

drwxr-xr-x. 2 student student 108 Mar 7 21:05 friends

1. Your project tasks are now complete, and it is time to clean up the directories. Use the rmdir -r command to recursively delete the family, friends, and work directories and their contents.

[student@servera work]$ **cd ..**

[student@servera ~]$ **rm -r family friends work**

[student@servera ~]$ **ls -l**

total 0

drwxr-xr-x. 2 student student 108 Mar 7 21:00 Music

drwxr-xr-x. 2 student student 108 Mar 7 21:00 Pictures

drwxr-xr-x. 2 student student 108 Mar 7 21:00 Videos

1. Return to the workstation system as the student user.

student@servera ~]$ **exit**

logout

Connection to servera closed.

[student@workstation ~]$

**Finish**

On the workstation machine, change to the student user home directory and use the lab command to complete this exercise. This step is important to ensure that resources from previous exercises do not impact upcoming exercises.

[student@workstation ~]$ **lab finish files-manage**

This concludes the section.

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**Chapter 03 section 08**

## Guided Exercise: Making Links Between Files

In this exercise, you will create hard links and symbolic links and compare the results.

Log in as the student user on workstation using student as the password.

On workstation, run the **lab start files-make** command. This command runs a start script that determines if the servera host is reachable on the network and creates the files and working directories on servera.

**[student@workstation ~]$ lab start files-make**

1. Use the **ssh** command to log in to servera as the student user. The systems are configured to use SSH keys for authentication, and therefore a password is not required.

**[student@workstation ~]$ ssh student@servera**

...output omitted...

**[student@servera ~]$**

1. Create a hard link called /home/student/links/file.hardlink for the /home/student/files/target.file file. Verify the link count for the original file and the new linked file.
   1. View the link count for the /home/student/files/target.file file.
   2. [student@servera ~]$ **ls -l files/target.file**
   3. total 4

-rw-r--r--. **1** student student 11 Mar 3 06:51 files/target.file

* 1. Create a hard link called /home/student/links/file.hardlink. Link it to the /﻿home/student/files/target.file file.
  2. [student@servera ~]$ **ln /home/student/files/target.file \**

**/home/student/links/file.hardlink**

* 1. Verify the link count for the original /home/student/files/target.file file and the new linked file, /home/student/files/file.hardlink. The link count should be 2 for both files.
  2. [student@servera ~]$ **ls -l files/target.file links/file.hardlink**
  3. -rw-r--r--. **2** student student 11 Mar 3 06:51 files/target.file

-rw-r--r--. **2** student student 11 Mar 3 06:51 links/file.hardlink

1. Create a symbolic link called /home/student/tempdir that points to the /tmp directory on the servera machine. Verify the newly created symbolic link.
   1. Create a symbolic link called /home/student/tempdir and link it to the /tmp directory.

[student@servera ~]$ **ln -s /tmp /home/student/tempdir**

* 1. Use the ls -l command to verify the newly created symbolic link.
  2. [student@servera ~]$ **ls -l /home/student/tempdir**

lrwxrwxrwx. 1 student student 4 Mar 3 06:55 /home/student/tempdir -> /tmp

1. Run the following command to view the soft link you just created:

**ls -l /home/student/tempdir**

**Screenshot of output of ls -l command:**

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1. Exit from servera.

**[student@servera ~]$ exit**

logout

Connection to servera closed.

[student@workstation ~]$

**Finish**

On workstation, run the **lab finish files-make** script to finish this exercise. This script removes all files and directories created on servera during the exercise.

**[student@workstation ~]$ lab finish files-make**

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**Chapter 03 section 11**

(as you can see from the lab, you are able to view the solution – how to do the task – by clicking Show Solution)

## Lab: Managing Files from the Command Line

**This lab section will not be assigned because it is meant as a self-study and the solutions are available.**

**Make sure to do this lab section while reading chapter 3 – it is very good practice.**

Upload the Word document with the history commands in Canvas