**Chapter 3 GUIDED EXERCISE**

**MANAGING FILES USING COMMANDLINE TOOLS**

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

**OUTCOMES**

You should be able to create, organize, copy, and remove files and directories.

**BEFORE YOU BEGIN**

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

On workstation, run the **lab files-manage start** command. This command runs a start script that determines if the servera machine is reachable on the network.

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

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

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

*...output omitted...*

[student@servera ~]$

**2.** 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**

**3.** Continuing in the student user's home directory, use the **touch** command to create sets of empty practice files to use during this lab.

**•** Create six files with names of the form **song*X*.mp3**.

**•** Create six files with names of the form **snap*X*.jpg**.

**•** Create six files with names of the form **film*X*.avi**.

In each set, replace X with the numbers 1 through 6.

[student@servera ~]$ **touch song1.mp3 song2.mp3 song3.mp3 song4.mp3 \**

**song5.mp3 song6.mp3**

[student@servera ~]$ **touch snap1.jpg snap2.jpg snap3.jpg snap4.jpg \**

**snap5.jpg snap6.jpg**

[student@servera ~]$ **touch film1.avi film2.avi film3.avi film4.avi \**

**film5.avi film6.avi**

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

total 0

-rw-rw-r--. 1 student student 0 Feb 4 18:23 film1.avi

-rw-rw-r--. 1 student student 0 Feb 4 18:23 film2.avi

-rw-rw-r--. 1 student student 0 Feb 4 18:23 film3.avi

-rw-rw-r--. 1 student student 0 Feb 4 18:23 film4.avi

-rw-rw-r--. 1 student student 0 Feb 4 18:23 film5.avi

-rw-rw-r--. 1 student student 0 Feb 4 18:23 film6.avi

drwxrwxr-x. 2 student student 6 Feb 4 18:23 Music

drwxrwxr-x. 2 student student 6 Feb 4 18:23 Pictures

-rw-rw-r--. 1 student student 0 Feb 4 18:23 snap1.jpg

-rw-rw-r--. 1 student student 0 Feb 4 18:23 snap2.jpg

-rw-rw-r--. 1 student student 0 Feb 4 18:23 snap3.jpg

-rw-rw-r--. 1 student student 0 Feb 4 18:23 snap4.jpg

-rw-rw-r--. 1 student student 0 Feb 4 18:23 snap5.jpg

-rw-rw-r--. 1 student student 0 Feb 4 18:23 snap6.jpg

-rw-rw-r--. 1 student student 0 Feb 4 18:23 song1.mp3

-rw-rw-r--. 1 student student 0 Feb 4 18:23 song2.mp3

-rw-rw-r--. 1 student student 0 Feb 4 18:23 song3.mp3

-rw-rw-r--. 1 student student 0 Feb 4 18:23 song4.mp3

-rw-rw-r--. 1 student student 0 Feb 4 18:23 song5.mp3

-rw-rw-r--. 1 student student 0 Feb 4 18:23 song6.mp3

drwxrwxr-x. 2 student student 6 Feb 4 18:23 Videos

**4.** Continuing in the student user's home directory, move the song files to the **Music** subdirectory, the snapshot files to the **Pictures** subdirectory, and the movie files to the **Videos** subdirectory. When distributing files from one location to many locations, first change to the directory containing the *source* files. Use the simplest path syntax, absolute or relative, to reach the destination for each file management task.

[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**

[student@servera ~]$ **ls -l Music Pictures Videos**

Music:

total 0

-rw-rw-r--. 1 student student 0 Feb 4 18:23 song1.mp3

-rw-rw-r--. 1 student student 0 Feb 4 18:23 song2.mp3

-rw-rw-r--. 1 student student 0 Feb 4 18:23 song3.mp3

-rw-rw-r--. 1 student student 0 Feb 4 18:23 song4.mp3

-rw-rw-r--. 1 student student 0 Feb 4 18:23 song5.mp3

-rw-rw-r--. 1 student student 0 Feb 4 18:23 song6.mp3

Pictures:

total 0

-rw-rw-r--. 1 student student 0 Feb 4 18:23 snap1.jpg

-rw-rw-r--. 1 student student 0 Feb 4 18:23 snap2.jpg

-rw-rw-r--. 1 student student 0 Feb 4 18:23 snap3.jpg

-rw-rw-r--. 1 student student 0 Feb 4 18:23 snap4.jpg

-rw-rw-r--. 1 student student 0 Feb 4 18:23 snap5.jpg

-rw-rw-r--. 1 student student 0 Feb 4 18:23 snap6.jpg

Videos:

total 0

-rw-rw-r--. 1 student student 0 Feb 4 18:23 film1.avi

-rw-rw-r--. 1 student student 0 Feb 4 18:23 film2.avi

-rw-rw-r--. 1 student student 0 Feb 4 18:23 film3.avi

-rw-rw-r--. 1 student student 0 Feb 4 18:23 film4.avi

-rw-rw-r--. 1 student student 0 Feb 4 18:23 film5.avi

-rw-rw-r--. 1 student student 0 Feb 4 18:23 film6.avi

[student@servera ~]$

**5.** Continue in the student user's home directory and create three subdirectories for organizing your files into projects. Name the subdirectories **friends**, **family**, and **work**. Use a single command to create all three subdirectories at the same time. You will use these directories to rearrange your files into projects.

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

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

total 0

drwxrwxr-x. 2 student student 6 Feb 4 18:38 family

drwxrwxr-x. 2 student student 6 Feb 4 18:38 friends

drwxrwxr-x. 2 student student 108 Feb 4 18:36 Music

drwxrwxr-x. 2 student student 108 Feb 4 18:36 Pictures

drwxrwxr-x. 2 student student 108 Feb 4 18:36 Videos

drwxrwxr-x. 2 student student 6 Feb 4 18:38 work

**6.** Copy a selection of new files to the project directories **family** and **friends**.

Use as many commands as needed. You do not have to use only one command as in the example. For each project, first change to the project directory, then copy the source files to this directory. Keep in mind that you are making copies, therefore the original files will remain in their original locations after the files are copied to the project directories.

**•** Copy files (all types) containing the numbers 1 and 2 in to the **friends** subdirectory.

**•** Copy files (all types) containing the numbers 3 and 4 in to the **family** subdirectory.

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

[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**

total 0

-rw-rw-r--. 1 student student 0 Feb 4 18:42 film1.avi

-rw-rw-r--. 1 student student 0 Feb 4 18:42 film2.avi

-rw-rw-r--. 1 student student 0 Feb 4 18:42 snap1.jpg

-rw-rw-r--. 1 student student 0 Feb 4 18:42 snap2.jpg

-rw-rw-r--. 1 student student 0 Feb 4 18:42 song1.mp3

-rw-rw-r--. 1 student student 0 Feb 4 18:42 song2.mp3

[student@servera friends]$

**6.1** Execute the previous command again, but this time redirect output to file ~/step6.1.txt. When finished, verify the contents of the file.

[student@servera friends]$ **ls -l >~/step6.1.txt**

[student@servera friends]$

[student@servera friends]$**cat ~/step6.1.txt**

total 0

-rw-rw-r--. 1 student student 0 Dec 7 10:45 film5.avi

-rw-rw-r--. 1 student student 0 Dec 7 10:45 film6.avi

-rw-rw-r--. 1 student student 0 Dec 7 10:45 snap5.jpg

-rw-rw-r--. 1 student student 0 Dec 7 10:45 snap6.jpg

-rw-rw-r--. 1 student student 0 Dec 7 10:45 song5.mp3

-rw-rw-r--. 1 student student 0 Dec 7 10:45 song6.mp3

[student@servera]$

[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 .**

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

total 0

-rw-rw-r--. 1 student student 0 Feb 4 18:44 film3.avi

-rw-rw-r--. 1 student student 0 Feb 4 18:44 film4.avi

-rw-rw-r--. 1 student student 0 Feb 4 18:44 snap3.jpg

-rw-rw-r--. 1 student student 0 Feb 4 18:44 snap4.jpg

-rw-rw-r--. 1 student student 0 Feb 4 18:44 song3.mp3

-rw-rw-r--. 1 student student 0 Feb 4 18:44 song4.mp3

**6.2** Execute the previous command again, but this time redirect output to file ~/step6.2.txt. When finished, verify the contents of the file.

[student@servera ~/family]$**ls -l >~/step6.2.txt**

[student@servera ~/family]$

[student@servera 10:49:13 ~/family]$**cat ~/step6.2.txt**

total 0

-rw-rw-r--. 1 student student 0 Dec 7 10:44 film3.avi

-rw-rw-r--. 1 student student 0 Dec 7 10:44 film4.avi

-rw-rw-r--. 1 student student 0 Dec 7 10:44 snap3.jpg

-rw-rw-r--. 1 student student 0 Dec 7 10:44 snap4.jpg

-rw-rw-r--. 1 student student 0 Dec 7 10:44 song3.mp3

-rw-rw-r--. 1 student student 0 Dec 7 10:44 song4.mp3

[student@servera family]$

**7.** For your work project, create additional copies.

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

[student@servera work]$ **cp ~/Music/song5.mp3 ~/Music/song6.mp3 \**

**~/Pictures/snap5.jpg ~/Pictures/snap6.jpg \**

**~/Videos/film5.avi ~/Videos/film6.avi .**

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

total 0

-rw-rw-r--. 1 student student 0 Feb 4 18:48 film5.avi

-rw-rw-r--. 1 student student 0 Feb 4 18:48 film6.avi

-rw-rw-r--. 1 student student 0 Feb 4 18:48 snap5.jpg

-rw-rw-r--. 1 student student 0 Feb 4 18:48 snap6.jpg

-rw-rw-r--. 1 student student 0 Feb 4 18:48 song5.mp3

-rw-rw-r--. 1 student student 0 Feb 4 18:48 song6.mp3

**7.1** Execute the previous command again, but this time redirect output to file ~/step7.1.txt. When finished, verify the contents of the file.

[student@servera 10:52:02 ~/work]$**ls -l >~/step7.1.txt**

[student@servera 10:52:06 ~/work]$

[student@servera 10:52:08 ~/work]$**cat ~/step7.1.txt**

total 0

-rw-rw-r--. 1 student student 0 Dec 7 10:45 film5.avi

-rw-rw-r--. 1 student student 0 Dec 7 10:45 film6.avi

-rw-rw-r--. 1 student student 0 Dec 7 10:45 snap5.jpg

-rw-rw-r--. 1 student student 0 Dec 7 10:45 snap6.jpg

-rw-rw-r--. 1 student student 0 Dec 7 10:45 song5.mp3

-rw-rw-r--. 1 student student 0 Dec 7 10:45 song6.mp3

[student@servera 10:52:10 ~/work]$

**8.** Your project tasks are now complete, and it is time to clean up the projects.

Change to the student user's home directory. Attempt to delete both the **family** and **friends** project directories with a single **rmdir** command.

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

[student@servera ~]$ **rmdir family friends**

rmdir: failed to remove 'family': Directory not empty

rmdir: failed to remove 'friends': Directory not empty

Using the **rmdir** command should fail because both subdirectories contain files.

**9.** Use the **rm -r** command to recursively delete both the **family** and **friends** subdirectories and their contents.

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

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

total 0

drwxrwxr-x. 2 student student 108 Feb 4 18:36 Music

drwxrwxr-x. 2 student student 108 Feb 4 18:36 Pictures

drwxrwxr-x. 2 student student 108 Feb 4 18:36 Videos

drwxrwxr-x. 2 student student 108 Feb 4 18:48 work

**10.** Delete all the files in the work project, but do not delete the work directory.

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

[student@servera work]$ **rm song5.mp3 song6.mp3 snap5.jpg snap6.jpg \**

**film5.avi film6.avi**

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

total 0

**11.** Finally, from the student user's home directory, use the **rmdir** command to delete the **work** directory. The command should succeed now that it is empty.

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

[student@servera ~]$ **rmdir work**

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

total 0

-rw-rw-r--. 1 student student 338 Dec 7 10:49 step6.1.txt

-rw-rw-r--. 1 student student 338 Dec 7 10:47 step6.2.txt

drwxrwxr-x. 2 student student 108 Dec 6 14:14 Music

drwxrwxr-x. 2 student student 108 Dec 6 14:16 Pictures

drwxrwxr-x. 2 student student 108 Dec 6 14:16 Videos

-rw-rw-r--. 1 student student 338 Dec 7 10:52 step7.1.txt

[student@servera ~]$

**12.** Exit from servera.

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

logout

Connection to servera closed.

[student@workstation ~]$

**13. Evaluation**

On workstation, run the **lab files-manage grade** script to complete this exercise.

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

**14. Finish**

On workstation, run the **lab files-manage finish** script to finish this exercise. The script will remove all directories and files created during this exercise.

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

This concludes the guided exercise.

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