Lab: Manage Files from the Command Line

Efficiently create, move, and remove files and directories by using the shell and various file name matching techniques.

**Outcomes**

* Use wildcards to locate and manipulate files.

As the student user on the workstation machine, use the lab command to prepare your system for this exercise.

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

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

**Instructions**

1. Use the ssh command to log in to the serverb machine as the student user. The system's configuration supports the use of SSH keys for authentication.

Locked Solution

1. Create a directory called project\_plans in the Documents directory. The Documents directory is placed in the student user's home directory. Create two empty files in the project\_plans directory called season1\_project\_plan.odf and season2\_project\_plan.odf.

Hint: If the ~/Documents directory does not exist, then use the mkdir command -p option to create it.

Locked Solution

1. Create sets of empty practice files to use in this lab. If you do not immediately recognize the intended shell expansion shortcut, then use the solution to learn and practice. Use shell tab completion to locate file path names. Create 12 files with tv\_season*X*\_episode*Y*.ogg names in the /home/student directory. Replace *X* with the season number and *Y* with that season's episode, for two seasons of six episodes each.

Locked Solution

1. As the author of a successful series of mystery novels, you are editing your next bestseller's chapters for publishing. Create eight files with mystery\_chapter*X*.odf names. Replace *X* with the numbers 1 through 8.

Locked Solution

1. Use a single command to create two subdirectories called season1 and season2 under the Videos directory to organize the TV episodes. Move the appropriate TV episodes into the season subdirectories. Use only two commands, and specify destinations with relative syntax.

Locked Solution

1. Create a two-level directory hierarchy with a single command to organize the mystery book chapters. Create the my\_bestseller subdirectory under the Documents directory, and create the chapters subdirectory under the new my\_bestseller directory. Create three more subdirectories directly under the my\_bestseller directory with a single command. Name these subdirectories editor, changes, and vacation. You do not need to use the mkdir -p command to create parents because the my\_bestseller parent directory exists.

Locked Solution

1. Change to the chapters directory. Use the tilde (~) home directory shortcut to move all book chapters to the chapters directory, which is now your current directory. Use the simplest syntax to specify the destination directory.

You want to send the first two chapters to the editor for review. Move only those two chapters to the editor directory to avoid modifying them during the review. Starting from the chapters subdirectory, use brace expansion with a range to specify the chapter file names to move and a relative path for the destination directory.

While on vacation, you intend to write chapters 7 and 8. Use a single command to move the files from the chapters directory to the vacation directory. Specify the chapter file names by using brace expansion with a list of strings and without using wildcard characters.

Locked Solution

1. Change your working directory to ~/Videos/season2, and then copy the first episode of the season to the vacation directory. Use a single cd command to change from your working directory to the ~/Documents/my\_bestseller/vacation directory. List its files. Use the *previous working directory* argument to return to the season2 directory. (This argument succeeds if the last directory change with the cd command used only one command rather than several cd commands.) From the season2 directory, copy the episode 2 file into the vacation directory. Use the shortcut again to return to the vacation directory.

Locked Solution

1. The authors of chapters 5 and 6 want to experiment with possible changes. Copy both files from the ~/Documents/my\_bestseller/chapters directory to the ~/Documents/my\_bestseller/changes directory to prevent these changes from modifying original files. Navigate to the ~/Documents/my\_bestseller directory. Use square-bracket pattern matching to specify which chapter numbers to match in the filename argument of the cp command.

Locked Solution

1. Change your current directory to the changes directory and use the date +%F command with command substitution to copy the mystery\_chapter5.odf file to a new file that includes the full date. Use the mystery\_chapter5\_YYYY-MM-DD.odf name format.

By using command substitution with the date +%s command, make another copy of mystery\_chapter5.odf, and append the current time stamp (as the number of seconds since the epoch, 1970-01-01 00:00 UTC) to ensure a unique file name.

Locked Solution

1. After further review, you decide that you do not need the plot changes. Delete the changes directory.

If it is necessary, then navigate to the changes directory and delete all the files within the directory. You cannot delete a directory when it is the current working directory.

Change to the parent directory of the changes directory. Try to delete the empty directory by using the rm command without the -r recursive option. This attempt should fail. Finally, use the rmdir command to delete the empty directory, which succeeds.

When the vacation is over, you no longer need the vacation directory. Delete it by using the rm command with the *recursive* option.

When finished, return to the student user's home directory.

Locked Solution

1. Create a hard link to the ~/Documents/project\_plans/season2\_project\_plan.odf file called ~/Documents/backups/season2\_project\_plan.odf.back. A hard link protects against accidental deletion of the original file and keeps the backup file updated as you change the original file.

Hint: If the ~/Documents/backups directory does not exist, then use the mkdir command to create it.

Locked Solution

**Evaluation**

As the student user on the workstation machine, use the lab command to grade your work. Correct any reported failures and rerun the command until successful.

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

**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-review**

**🚀 Red Hat: Files Review Lab — Экзаменационная шпаргалка**

**🔧 1. Подготовка лабораторной среды:**

bash

CopyEdit

lab start files-review

ssh student@serverb

**🔧 2. Создать проектные файлы:**

bash

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mkdir -p ~/Documents/project\_plans

touch ~/Documents/project\_plans/season1\_project\_plan.odf

touch ~/Documents/project\_plans/season2\_project\_plan.odf

**🔧 3. Создать файлы с TV-сезонами:**

bash

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touch tv\_season{1,2}\_episode{1..6}.ogg

**🔧 4. Создать главы книги:**

bash

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touch mystery\_chapter{1..8}.odf

**🔧 5. Создать директории для сезонов и переместить серии:**

bash

CopyEdit

mkdir -p Videos/season{1,2}

mv tv\_season1\_episode?.ogg Videos/season1/

mv tv\_season2\_episode?.ogg Videos/season2/

**🔧 6. Создать структуру книги:**

bash

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mkdir -p Documents/my\_bestseller/chapters

mkdir Documents/my\_bestseller/{editor,changes,vacation}

**🔧 7. Переместить главы книги в папку chapters:**

bash

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cd ~/Documents/my\_bestseller/chapters

mv ~/mystery\_chapter?.odf .

**🔧 8. Переместить главы 1-2 в editor:**

bash

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mv mystery\_chapter{1..2}.odf ../editor/

Переместить главы 7-8 в vacation:

bash

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mv mystery\_chapter{7,8}.odf ../vacation/

**🔧 9. Переместиться в season2, скопировать серии:**

bash

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cd ~/Videos/season2

cp tv\_season2\_episode1.ogg ~/Documents/my\_bestseller/vacation/

cd ~/Documents/my\_bestseller/vacation

cd -

cp tv\_season2\_episode2.ogg ~/Documents/my\_bestseller/vacation/

cd ~/Documents/my\_bestseller/vacation

**🔧 10. Скопировать главы 5 и 6 в changes с pattern matching:**

bash

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cd ~/Documents/my\_bestseller

cp chapters/mystery\_chapter[5-6].odf changes/

**🔧 11. Сделать резервные копии с текущей датой:**

bash

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cd changes

cp mystery\_chapter5.odf mystery\_chapter5\_$(date +%F).odf

cp mystery\_chapter5.odf mystery\_chapter5\_$(date +%s).odf

**🔧 12. Удаление изменений:**

bash

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cd ..

rm changes # не сработает (ожидаемо)

rm -r changes # полное удаление

rm -r vacation # полное удаление

cd ~

**🔧 13. Создать hard link для резервной копии:**

bash

CopyEdit

mkdir -p ~/Documents/backups

ln ~/Documents/project\_plans/season2\_project\_plan.odf ~/Documents/backups/season2\_project\_plan.odf.back

**🔧 14. Финальная проверка:**

bash

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lab grade files-review