

Lab – File System Commands

Introduction

In this lab, you will use CLI commands to manage files and folders in Windows.

Recommended Equipment

- A computer running Windows

Instructions

Step 1: Access the Windows command prompt.

- a. Log on to a Windows computer. The account **ITEUser** is used as the example user account throughout this lab.
- b. To access the Windows command prompt, click **Start** and enter **cmd**. Select **Command Prompt** or **cmd.exe** to continue.

Step 2: Create and change directories.

In this step, you will use the change directory (**cd**), make directory (**md**), and directory (**dir**) commands.

Note: A directory is another word for folder. Directory and folder are used interchangeably throughout this lab.

- a. Type **cd** at the command prompt.

Question:

What is the current directory?

C:\Users\Ian Canoy

- b. Type **dir** at the command prompt to list the files and folders that are in the current folder.

```
C:\Users\ITEUser> dir
Volume in drive C has no label.
Volume Serial Number is 9055-35E9
```

```
Directory of C:\Users\ITEUser

04/27/2019  09:21 AM    <DIR>      .
04/27/2019  09:21 AM    <DIR>      ..
04/25/2019  11:39 AM    <DIR>      3D Objects
04/25/2019  11:39 AM    <DIR>      Contacts
04/26/2019  10:29 AM    <DIR>      Desktop
04/25/2019  11:39 AM    <DIR>      Documents
04/25/2019  11:39 AM    <DIR>      Downloads
<some output omitted>
          0 File(s)              0 bytes
        15 Dir(s)   32,671,969,280 bytes free
```

- c. In the current directory, use the **md** command to create three new folders: **ITEfolder1**, **ITEfolder2**, and **ITEfolder3**. Type **md ITEfolder1** and press **Enter**. Create **ITEfolder2** and **ITEfolder3**. (Note: The command **mkdir** performs the same function as the command **md**.)

```
C:\Users\ITEUser> md ITEfolder1  
C:\Users\ITEUser> md ITEfolder2 ITEfolder3
```

- d. Type **dir** to verify that the folders have been created.
e. Type **cd ITEfolder3** at the command prompt and press **Enter**.

Question:

Which folder are you in now?

In ITEfolder 3

- f. Create **ITEfolder4** in the current directory. Within the **ITEfolder4** folder, create a folder named **ITEfolder5**. Use the **dir** command to verify the folder creation.

Question:

What command or commands did you use to create the nested folders?

I used md ITEfolder4 and md ITEfolder5

- g. Change directory as necessary until you are in **ITEfolder5**.
h. Type **cd ..** to change the current directory. Each **..** is a shortcut to move up one level in the directory tree.

Question:

After issuing the **cd ..** command, what is your directory now?

What would be the current directory if you issue this command at
C:\Users\ITEUser\ITEfolder3\ITEFolder4?

C:\Users\Ian Canoy

Step 3: Create text files.

- a. Navigate to the **C:\Users\ITEUser\ITEfolder1** directory. Type **cd ..\ITEfolder1** at the prompt.
b. Type **echo This is doc1.txt > doc1.txt** at the command prompt. The **echo** command is used to display a message at the command prompt. The **>** is used to redirect the message from the screen to a file. For example, in the first line, the message **This is doc1.txt** is redirected into a new file named **doc1.txt**. Use the **echo** command and **>** redirect to create these files: **doc2.txt**, **file1.txt**, and **file2.txt**.

```
C:\Users\ITEUser\ITEfolder1> echo This is doc1.txt > doc1.txt  
C:\Users\ITEUser\ITEfolder1> echo This is doc2.txt > doc2.txt  
C:\Users\ITEUser\ITEfolder1> echo This is file1.txt > file1.txt  
C:\Users\ITEUser\ITEfolder1> echo This is file2.txt > file2.txt
```

- c. Use the **dir** command to verify the files are in the **ITEfolder1** folder.

```
C:\Users\ITEUser\ITEFolder1> dir  
<some output omitted>  
04/29/2019  08:05 AM           19 doc1.txt  
04/29/2019  08:06 AM           19 doc2.txt  
04/29/2019  08:08 AM          20 file1.txt  
04/29/2019  08:08 AM          20 file2.txt  
                           4 File(s)           78 bytes
```

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```
2 Dir(s) 32,625,397,760 bytes free
```

- d. Use the **more** or **type** command to view the content of the newly created text files.

```
C:\Users\ITEUser\ITEfolder1> more doc1.txt  
This is doc1.txt
```

```
C:\Users\ITEUser\ITEfolder1> type doc2.txt  
This is doc2.txt
```

Step 4: Copy, delete, and move files.

- a. At the command prompt, type **move doc2.txt C:\Users\ITEUser\ITEfolder2** to move the file **doc2.txt** to the **C:\Users\ITEUser\ITEfolder2** directory.

```
C:\Users\ITEUser\ITEfolder1> move doc2.txt C:\Users\ITEUser\ITEfolder2  
1 file(s) moved.
```

- b. Type **dir** at the prompt to verify that **doc2.txt** is no longer in the current directory.

- c. Navigate to **C:\Users\ITEUser\ITEfolder2** to change the directory to **ITEfolder2**. Type **dir** at the prompt to verify **doc2.txt** has been moved.

- d. Type **copy doc2.txt doc2_copy.txt** to create a copy of **doc2.txt**. Type **dir** at the prompt to verify a copy of the file has been created.

```
C:\Users\ITEUser\ITEfolder2> dir  
<some output omitted>  
Directory of C:\Users\ITEUser\ITEfolder2
```

```
04/30/2019 09:07 AM 19 doc2.txt  
04/30/2019 09:07 AM 19 doc2_copy.txt  
2 File(s) 38 bytes  
2 Dir(s) 31,753,068,544 bytes free
```

- e. Use the **move** command to move **doc2_copy.txt** to **ITEfolder1**. Type **move doc2_copy.txt ..\ITEfolder1**.

```
C:\Users\ITEUser\ITEfolder2> move doc2_copy.txt ..\ITEfolder1  
1 file(s) moved.
```

- f. A copy of the file **doc2.txt** can be created in a new location using the **copy** command. At the prompt, enter the **copy doc2.txt ..\ITEfolder1\doc2_new.txt**.

```
C:\Users\ITEUser\ITEfolder2> copy doc2.txt ..\ITEfolder1\doc2_new.txt  
1 file(s) copied.
```

- g. The file **doc2.txt** can also be moved to a new location with a new filename using the **move** command. Type **move doc2.txt ..\ITEfolder1\doc2_new.txt** at the prompt.

```
C:\Users\ITEUser\ITEfolder2> move doc2.txt ..\ITEfolder1\doc2_move.txt  
1 file(s) moved.
```

- h. Type **dir ..\ITEfolder1** to view the content in **ITEfolder1** without leaving the current directory.

```
C:\Users\ITEUser\ITEfolder2> dir ..\ITEfolder1  
<some output omitted>  
Directory of C:\Users\ITEUser\ITEfolder1
```

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```
04/29/2019 12:08 PM <DIR> .
04/29/2019 12:08 PM <DIR> ..
04/29/2019 08:05 AM 19 doc1.txt
04/29/2019 08:06 AM 19 doc2_copy.txt
04/29/2019 08:06 AM 19 doc2_move.txt
04/29/2019 08:06 AM 19 doc2_new.txt
04/29/2019 08:08 AM 20 file1.txt
04/29/2019 08:08 AM 20 file2.txt
       6 File(s)      116 bytes
      2 Dir(s)  31,467,700,224 bytes free
```

- i. Change the current directory to **ITEfolder1**. Type **cd ..\ITEfolder1** at the prompt.
- j. Move **file1.txt** and **file2.txt** into **ITEfolder3**. To move all the files that contain the word **file** into **ITEfolder3** with one command, use a **wildcard (*)** character to represent one or more characters. Type **move file* ..\ITEfolder3**.

```
C:\Users\ITEUser\ITEfolder1> move file* ..\ITEfolder3
C:\Users\ITEUser\ITEfolder1\file1.txt
C:\Users\ITEUser\ITEfolder1\file2.txt
      2 file(s) moved.
```

- k. To view the content of the file **doc2_new.txt**, use the **type** or **more** command at the prompt.
C:\Users\ITEUser\ITEfolder1> type doc2_new.txt
This is doc2.txt
- l. Use the **ren** command to rename **doc2_new.txt** to **doc3.txt**. Use the **dir** command to display the content in the directory.
c:\Users\ITEUser\ITEfolder1> ren doc2_new.txt file.log

- m. Use the **type** or **more** command to view the content of the newly rename file **file.log**.

```
C:\Users\ITEUser\ITEfolder1> more file.log
This is doc2.txt
```

- n. To delete a file or multiple files, use the **del** command with the file names at the prompt.

Question:

What single command would you use to delete all the files with **doc2** in the filename? Use the command to remove the files with **doc2** in the filename.

```
del *doc2*.*
```

What command would you use to delete all the files in the directory? Use the command to remove the files.

```
del **
```

Step 5: Use the **xcopy** and **robocopy** commands.

In this step, the **xcopy** and **robocopy** commands are used to copy the content in a directory.

- a. View the content of **ITEfolder3**.

```
C:\Users\ITEUser\ITEfolder1> dir ..\ITEfolder3
<some output omitted>
Directory of c:\Users\ITEUser\ITEfolder3
```

```
04/29/2019  03:11 PM    <DIR>      .
04/29/2019  03:11 PM    <DIR>      ..
04/29/2019  03:05 PM          20 file1.txt
04/29/2019  03:05 PM          20 file2.txt
04/29/2019  03:01 PM    <DIR>      ITEfolder4
                2 File(s)        40 bytes
            3 Dir(s)  31,492,157,440 bytes free
```

- b. Type **xcopy ..\ITEfolder3 .** at the prompt to copy the content of **ITEfolder3** to **ITEfolder1**. Note the **.** at the end of the command. It is a shortcut for the current directory.

```
C:\Users\ITEUser\ITEfolder1> xcopy ..\ITEfolder3 .
..\ITEfolder3\file1.txt
..\ITEfolder3\file2.txt
2 File(s) copied
```

- c. At the prompt, type **dir** to display the content of **ITEfolder1**. Only the files in the **ITEfolder3** were copied into **ITEfolder1**. The directory **ITEfolder4** was not copied into **ITEfolder3**.

```
C:\Users\ITEUser\ITEfolder1> dir
<some output omitted>
Directory of C:\Users\ITEUser\ITEfolder1
04/29/2019  03:16 PM    <DIR>      .
04/29/2019  03:16 PM    <DIR>      ..
04/29/2019  03:05 PM          20 file1.txt
04/29/2019  03:05 PM          20 file2.txt
                2 File(s)        40 bytes
            2 Dir(s)  31,491,321,856 bytes free
```

- d. Use **help xcopy** or **xcopy /?** to determine which switch would allow the **xcopy** command to copy **all** the files and directories.

Question:

What option allows you to copy all the files and directories, including the empty directories?

The option that allows you to do that is /E

- e. Because **ITEfolder4** is a subfolder and **ITEfolder5** is both a subfolder and an empty folder, **/E** is needed to copy all the contents of **ITEfolder3** and the empty subfolder.

Type **xcopy /E ..\ITEfolder3 .** at the prompt to copy the files. When prompted, type **a** to allow overwriting the existing files.

```
c:\Users\ITEUser\ITEfolder1> xcopy /E ..\ITEfolder3
Overwrite C:\Users\ITEUser\ITEfolder1\file1.txt (Yes/No/All)? a
..\ITEfolder3\file1.txt
..\ITEfolder3\file2.txt
2 File(s) copied
```

- f. Verify that the **ITEfolder4** and **ITEfolder5** were also copied in **ITEfolder1**.

```
c:\Users\ITEUser\ITEfolder1> dir
<some output omitted>
Directory of c:\Users\ITEUser\ITEfolder1
04/29/2019  04:41 PM    <DIR>      .
```

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```
04/29/2019  04:41 PM    <DIR>          ..
04/29/2019  03:05 PM                20 file1.txt
04/29/2019  03:05 PM                20 file2.txt
04/29/2019  04:41 PM    <DIR>        ITEfolder4
      2 File(s)           40 bytes
      3 Dir(s)   31,493,193,728 bytes free
```

```
c:\Users\ITEUser\ITEfolder1> dir ITEfolder4
<some output omitted>
Directory of c:\Users\ITEUser\ITEfolder1\ITEfolder4

04/29/2019  04:41 PM    <DIR>          .
04/29/2019  04:41 PM    <DIR>          ..
04/29/2019  03:00 PM    <DIR>        ITEfolder5
      0 File(s)           0 bytes
      3 Dir(s)   31,493,193,728 bytes free
```

- g. The robocopy command can also be used to copy the content of a directory to a new destination. The robocopy command has more capabilities than the built-in Windows copy and xcopy command, such as resume copying after a network interruption, skip files that appear to be identical to the files in the destination folders, and mirror a directory by keeping the destination directory in sync with the source directory.

Copy the ITEfolder4 content to ITEUser folder using the robocopy command.

```
C:\Users\ITEUser\ITEfolder1> robocopy /E
C:\Users\ITEUser\ITEfolder3\ITEfolder4\ C:\Users\ITEUser
```

Note the information provided by the command during the copying process.

- h. Navigate to **C:\Users\ITEUser** to verify that the folder ITEfolder5 is copied.

Step 6: Delete directories.

In this step, you will delete an empty and a non-empty directory using the **rd** command.

- a. Use the **rd ITEfolder2** to delete the empty directory and verify that the directory was deleted.

```
C:\Users\ITEUser> rd ITEfolder2
```

- b. Navigate to the **C:\Users\ITEUser\ITEfolder3** directory.

- c. Use the **rd ITEfolder1** to delete the directory. Verify the directory removal using the **dir** command.

Were you able to delete the directory? Explain.

Yes, I deleted the directory, The rd command removes an directory from the system if it is empty, then after running the command using dir I confirmed that it was deleted.

- d. Use **rd /?** command to determine the switch that allows the deletion of a non-empty directory.

```
c:\Users\ITEUser\ITEfolder3> rd /s ITEfolder1
ITEfolder4, Are you sure (Y/N) ? y
```

- e. Use the appropriate commands to delete all the text files and folders that you have created in this lab. Type **exit** to close the command prompt window.

Reflection Question

What are the advantages of using CLI vs. GUI?

Using the CLI is faster and more efficient than a GUI. It allows automation through scripts, uses fewer system resources, and provides better control over system files. The CLI also enables remote management and can assist with troubleshooting tasks that a GUI cannot handle.