

Command Line Basics

1/2

Linux Essentials
Session-2

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What is Essential to Managing an OS?



Brainstorming



Essential to OS Management

- File management
 - How are files structured?
 - Copy, move, delete, create files
 - Home directory
 - Directory contents
 - Navigating directories
 - Searching in files, directories
 - File permissions
 - Editing files
- User management
 - Add, delete, modify users
 - Create, modify passwords
- Performance management
 - System performance
 - Who is logged in



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What is Essential to Managing an OS?





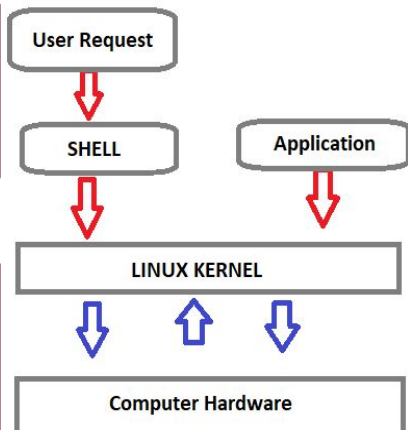
DevOps Engineers are not System Administrators. Why is this important?



What is SHELL?

Shell is a program that receives the user's commands and gives them to the operating system to process and displays the output.

Bash (**B**ourne **A**gain **S**hell) is an enhanced version of Steve Bourne's first Unix shell application, and serves as the shell program on most Linux systems.



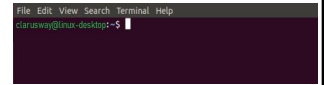


What is SHELL?

The standard Linux shell is both a command-line interpreter and a programming language.



The command prompt for Linux generally shows the current **user**, the current **host**, and the appropriate **directory**.



At the end of the prompt list, the \$(dollar sign) signifies the current user being unprivileged, and the device is ready to receive feedback.

The input is sent for parsing and execution to the interpreter.



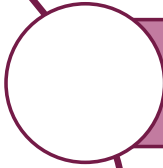
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Files and Directories

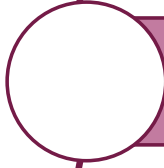




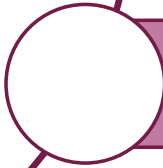
Files and Directories



The file system hierarchy standard (FHS) defines the structure of the file systems on Linux.



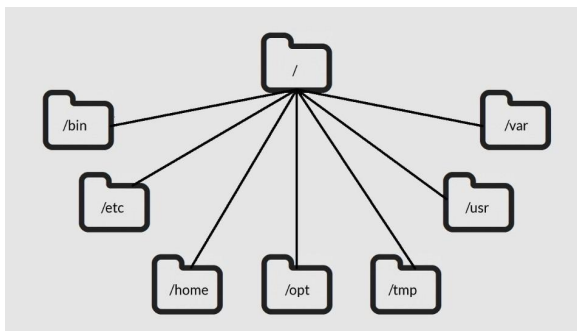
In the FHS, all files and directories appear under the root directory /, even if they are stored on different physical or virtual devices.



Most of these directories exist in all UNIX, however, they are not considered authoritative for platforms other than Linux.



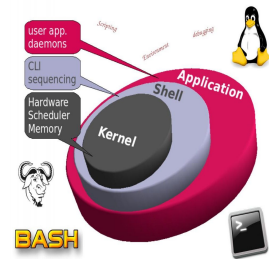
File System Hierarchy Standard (FHS)





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Basic SHELL Commands



Basic Shell Commands

pwd show current path

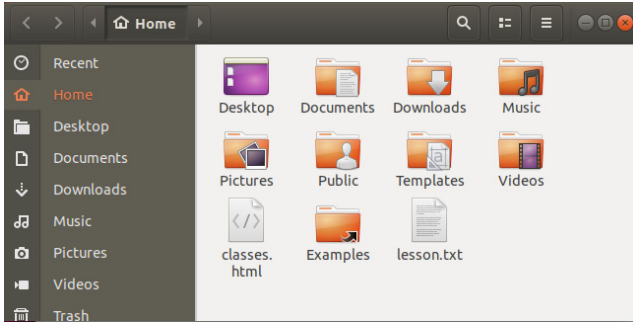
```
user@clarusway-linux: ~  
File Edit View Search Terminal Help  
user@clarusway-linux:~$ pwd  
/home/user  
user@clarusway-linux:~$
```



Basic Shell Commands

ls lists directory contents

ls -l lists directory contents with details



```
user@clarusway-linux: ~  
File Edit View Search Terminal Help  
user@clarusway-linux:~$ ls  
classes.html Downloads Music Templates  
Desktop examples.desktop Pictures Videos  
Documents lesson.txt Public  
user@clarusway-linux:~$
```

```
user@clarusway-linux: ~  
File Edit View Search Terminal Help  
user@clarusway-linux:~$ ls -l  
total 48  
-rw-r--r-- 1 user user 16 Mar 2 21:56 classes.html  
drwxr-xr-x 2 user user 4096 Mar 2 21:54 Desktop  
drwxr-xr-x 2 user user 4096 Mar 2 21:54 Documents  
drwxr-xr-x 2 user user 4096 Mar 2 21:54 Downloads  
-rw-r--r-- 1 user user 8980 Mar 2 21:53 examples.desktop  
-rw-r--r-- 1 user user 0 Mar 2 21:55 lesson.txt  
drwxr-xr-x 2 user user 4096 Mar 2 21:54 Music  
drwxr-xr-x 2 user user 4096 Mar 2 21:54 Pictures  
drwxr-xr-x 2 user user 4096 Mar 2 21:54 Public  
drwxr-xr-x 2 user user 4096 Mar 2 21:54 Templates  
drwxr-xr-x 2 user user 4096 Mar 2 21:54 Videos  
user@clarusway-linux:~$
```



Basic Shell Commands

cd [dir] change (current) directory

cd .. change current directory to one level up

cd / change current directory to the root directory

cd ~ change current directory to the home directory

```
user@clarusway-linux: ~  
File Edit View Search Terminal Help  
user@clarusway-linux:~$ cd test  
user@clarusway-linux:~/test$ cd ..  
user@clarusway-linux:~$ cd /  
user@clarusway-linux:/$ cd ~  
user@clarusway-linux:~$
```




Basic Shell Commands

mkdir [dir] create a new directory

```
user@clarusway-linux: ~  
File Edit View Search Terminal Help  
user@clarusway-linux:~$ ls  
classes.html Downloads Music Templates  
Desktop examples.desktop Pictures test  
Documents lesson.txt Public Videos  
user@clarusway-linux:~$ mkdir clarusway  
user@clarusway-linux:~$ ls  
clarusway Downloads Pictures Videos  
classes.html examples.desktop Public  
Desktop lesson.txt Templates  
Documents Music test  
user@clarusway-linux:~$
```



Basic Shell Commands

rmdir [dir] delete an empty directory

```
user@clarusway-linux: ~  
File Edit View Search Terminal Help  
user@clarusway-linux:~$ ls  
clarusway Downloads Pictures Videos  
classes.html examples.desktop Public  
Desktop lesson.txt Templates  
Documents Music test  
user@clarusway-linux:~$ rmdir test  
user@clarusway-linux:~$ ls  
clarusway Documents lesson.txt Public  
classes.html Downloads Music Templates  
Desktop examples.desktop Pictures Videos  
user@clarusway-linux:~$
```

```
user@clarusway-linux: ~  
File Edit View Search Terminal Help  
user@clarusway-linux:~$ cd test  
user@clarusway-linux:~/test$ ls  
t.txt  
user@clarusway-linux:~/test$ cd ..  
user@clarusway-linux:~$ rmdir test  
rmdir: failed to remove 'test': Directory not empty  
user@clarusway-linux:~$ ls  
clarusway Downloads Pictures Videos  
classes.html examples.desktop Public  
Desktop lesson.txt Templates  
Documents Music test  
user@clarusway-linux:~$
```



Basic Shell Commands

touch create a file

```
user@clarusway-linux: ~  
File Edit View Search Terminal Help  
user@clarusway-linux:~$ ls  
clarusway Downloads Pictures Videos  
classes.html examples.desktop Public  
Desktop lesson.txt Templates  
Documents Music test  
user@clarusway-linux:~$ touch test-file.txt  
user@clarusway-linux:~$ ls  
clarusway Downloads Pictures test-file.txt  
classes.html examples.desktop Public Videos  
Desktop lesson.txt Templates  
Documents Music test  
user@clarusway-linux:~$
```



Basic Shell Commands

rm delete a file

```
user@clarusway-linux: ~  
File Edit View Search Terminal Help  
user@clarusway-linux:~$ ls  
clarusway Downloads Pictures test-file.txt  
classes.html examples.desktop Public Videos  
Desktop lesson.txt Templates  
Documents Music test  
user@clarusway-linux:~$ rm test-file.txt  
user@clarusway-linux:~$ ls  
clarusway Downloads Pictures Videos  
classes.html examples.desktop Public  
Desktop lesson.txt Templates  
Documents Music test  
user@clarusway-linux:~$
```



Basic Shell Commands

cp copy a file to another location

```
user@clarusway-linux: ~/test
File Edit View Search Terminal Help
user@clarusway-linux:~$ cd test
user@clarusway-linux:~/test$ ls
user@clarusway-linux:~/test$ cd ..
user@clarusway-linux:~$ cp test-file.txt test/
user@clarusway-linux:~$ ls
clarusway    Downloads      Pictures      test-file.txt
classes.html examples.desktop Public         Videos
Desktop      lesson.txt     Templates
Documents    Music          test
user@clarusway-linux:~$ cd test
user@clarusway-linux:~/test$ ls
test-file.txt
user@clarusway-linux:~/test$
```



Basic Shell Commands

mv move a file to another location

```
user@clarusway-linux: ~/test
File Edit View Search Terminal Help
user@clarusway-linux:~/test$ ls
user@clarusway-linux:~/test$ cd ..
user@clarusway-linux:~$ ls
clarusway    Downloads      Pictures      test-file.txt
classes.html examples.desktop Public         Videos
Desktop      lesson.txt     Templates
Documents    Music          test
user@clarusway-linux:~$ mv test-file.txt test/
user@clarusway-linux:~$ ls
clarusway    Downloads      Pictures      Videos
classes.html examples.desktop Public
Desktop      lesson.txt     Templates
Documents    Music          test
user@clarusway-linux:~$ cd test
user@clarusway-linux:~/test$ ls
test-file.txt
user@clarusway-linux:~/test$
```



Basic Shell Commands

echo print message to screen

echo > [file] print message into a file

```
user@clarusway-linux: ~  
File Edit View Search Terminal Help  
user@clarusway-linux:~$ echo "test"  
test  
user@clarusway-linux:~$ cat test-file.txt  
user@clarusway-linux:~$ echo "test" > test-file.txt  
user@clarusway-linux:~$ cat test-file.txt  
test  
user@clarusway-linux:~$
```



Basic Shell Commands

cat show file contents

```
Open lesson.txt Save  
Test lesson file  
Text Tab Width: 8 Ln 1, Col 17 INS
```

```
user@clarusway-linux: ~  
File Edit View Search Terminal Help  
user@clarusway-linux:~$ cat lesson.txt  
Test lesson file  
user@clarusway-linux:~$
```



Multiple File/Directory Operations

- ? used for a single character
- * used for multiple characters.

```
user@clarusway-linux: ~  
File Edit View Search Terminal Help  
user@clarusway-linux:~$ ls  
clarusway      examples.desktop  Music           Videos  
classes.html  html.txt          Pictures        xml.txt  
Desktop        lessons           Public  
Documents      lesson.txt        Templates  
Downloads      linux.txt         test  
user@clarusway-linux:~$ ls l*.*  
lesson.txt  linux.txt  
user@clarusway-linux:~$ ls ?tml.txt  
html.txt  xml.txt  
user@clarusway-linux:~$
```



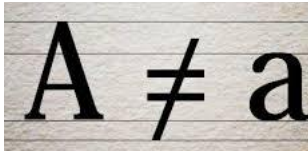
Basic SHELL Commands





Case Sensitivity

Most of the common Linux file systems are case sensitive; this is something to keep in mind when creating files or directories and moving through directories.



Lower-case and upper-case letters have different ASCII representation.



```
touch newfile
touch Newfile
```

Will create two different files.



Task

 clarusway

 lessons

 linux.txt

**“I love linux”
“Sometimes”**

 html.txt

“I can create a website”

 materials

 lms.txt

**“pre-class”
“material”**

 try-it.txt

**“post-class”
“material”**

Solution

```
136 ls
137 mkdir clarusway
138 cd clarusway
139 mkdir lessons
140 cd lessons
141 touch linux.txt
142 echo "I love linux" > linux.txt
143 touch html.txt
144 echo "I can create a web site" > html.txt
145 cd ..
146 mkdir materials
147 cd materials
148 mkdir pre-class
149 cd pre-class
150 touch lms.txt
151 cd ..
152 mkdir post-class
153 cd post-class
154 touch try-it.txt
```

THANKS !

Any questions?