Bash Commands Reference Sheet

About

This reference can be used when using a Bash terminal session on Linux or Unix-Like Systems. This reference is by no means exhaustive, but gives administrators the tools they need to navigate a Linux or Unix-Like system.

Syntax

Text surrounded by square brackets "[ ]" are required parameters.
Text surrounded by curly braces "{ }" are optional parameters.

Navigation

pwd

Lists the directory the session this session is in.

Example

```
jsmith@GRV-DC01:~$ pwd
/home/jsmith
```

ls {-flags} [target_directory]

Lists the contents of the specified directory. If no directory is given, details about the current directory will be given. Multiple flags can be combined.

Commonly used flags:

-a - Shows all files regardless of visibility.

Note: *Hidden files have a "." prefix.*

-l - Shows long listing format.

Example

```
jsmith@GRV-DC01:~/backup_dir/profiles/jsmith$ ls -al
total 12
drwxrwxr-x 2 jsmith jsmith 4096 Jul  9 20:57 .
drwxrwxr-x 3 jsmith jsmith 4096 Jul  9 20:50 ..
-rw-rw-r-- 1 jsmith jsmith    0 Jul  9 20:54 .hidden_file.txt
-rw-rw-r-- 1 jsmith jsmith    6 Jul  9 20:57 password.txt
```

cd {directory_name}

Changes current working directory to directory specified.

Commonly used directory name shortcuts

.. - Changes directory to parent directory of the current directory

/ - Changes to the root directory.

~ - Changes to the home directory. **Default.**

Example

```
jsmith@GRV-DC01:~/backup_dir/user_acct/profiles$ cd /
jsmith@GRV-DC01:/$
```

File and Directory Manipulation

chmod {option}[permission change type][permissions] [filename]

Changes permissions of the specified file.

Option

This value dictates who will get this permission change. There are four options to choose from. Multiple options can be combined.

u - "User". The user that owns this file.

g - "Group". The group that this file belongs to.

o - "Others". The users and groups that don't belong in the previous two categories.

a - "All". Includes Users, Group, and Others. **Default.**

Permission Change Type

This value dictates if the permission type is being added or removed

from the option.

+ - Adds the following permission to the selected options.

- - Removes the following permission to the selected options.

Permissions

This value dictates what type of permissions are affected by this command. Multiple permissions can be combined.

r - Read access to the specified file.

w - Write access to the specified file.

x - Executable access to the specified file.

Example

```
jsmith@GRV-DC01:~/backup_dir/profiles/jsmith$ chmod ugoa+rwx my_script.sh
jsmith@GRV-DC01:~/backup_dir/profiles/jsmith$ ls -l
total 1
-rwxrwxrwx 1 jsmith jsmith 0 Jul  9 22:24 my_script.sh
```

touch [file_name]

Creates a file with the specified name.

Example

```
jsmith@GRV-DC01:~/backup_dir/profiles/jsmith$ touch new_file.txt
jsmith@GRV-DC01:~/backup_dir/profiles/jsmith$ ls
my_file.txt  my_script.sh  new_file.txt  password.txt
```

rm [file_or_directory_name] {-flag}

Removes the specified file or directory.

Warning: This operation cannot be undone.

Commonly used flags:

-r - "Recursive". Removes all contents of the specified directory.

Note: *Must be used if executing rm command on a directory.*

Example

```
jsmith@GRV-DC01:~/backup_dir/profiles/jsmith$ ls
deleteme  my_file.txt  my_script.sh  password.txt
jsmith@GRV-DC01:~/backup_dir/profiles/jsmith$ rm deleteme -r
jsmith@GRV-DC01:~/backup_dir/profiles/jsmith$ ls
my_file.txt  my_script.sh  password.txt
```

cp [file_name] [new_file_name]

Makes a copy of a specified file.

Example

```
jsmith@GRV-DC01:~/backup_dir/profiles/jsmith$ cp new_file.txt my_copy.txt
jsmith@GRV-DC01:~/backup_dir/profiles/jsmith$ ls
my_copy.txt  my_file.txt  my_script.sh  new_file.txt  password.txt
```

mv [file_or_directory_name] [target_directory]

Moves a file or directory to the specified target directory.

Example

```
jsmith@GRV-DC01:~/backup_dir/profiles/jsmith$ ls
dest_dir  move_me  my_copy.txt  my_file.txt  my_script.sh  new_file.txt
jsmith@GRV-DC01:~/backup_dir/profiles/jsmith$ mv move_me dest_dir
jsmith@GRV-DC01:~/backup_dir/profiles/jsmith$ ls
dest_dir  my_copy.txt  my_file.txt  my_script.sh  new_file.txt  password.txt
jsmith@GRV-DC01:~/backup_dir/profiles/jsmith$ cd dest_dir
jsmith@GRV-DC01:~/backup_dir/user_acct/profiles/jsmith/dest_dir$ ls
move_me
```

mkdir [directory_name]

Creates a new directory with the specified name.

Example

```
jsmith@GRV-DC01:~/backup_dir/profiles/jsmith$ ls
my_file.txt  my_script.sh  new_directory  password.txt
```

rmdir [directory_name]

Removes the specified directory.

Example

```
jsmith@GRV-DC01:~/backup_dir/profiles/jsmith$ rmdir new_directory
jsmith@GRV-DC01:~/backup_dir/profiles/jsmith$ ls
my_file.txt  my_script.sh  password.txt
```

./[filename]

Executes the specified file.

Example

```
jsmith@GRV-DC01:~/backup_dir/profiles/jsmith$ ./say_hello.sh
Hello!
```

System Commands

`Ctrl+C`

Keyboard shortcut to end the active program in your bash session.

sudo [command]

Will execute the specified command with elevated privileges.

> **Warning: This should only be used when necessary. Untrusted third-party scripts should not be executed with sudo privileges.**

exit

Exits the Bash session.

> ***Note:*** *Pressing* `Ctrl+D` *will call this command.*

shutdown {-flags} [time] {message}

Halts, power-off or reboots the host machine.

> **Commonly Used Flags**
>
> **--halt** - Halts the host machine.
>
> **--poweroff** - Power-off the host machine. **Default.**

--reboot - Reboots the host machine.

-c - Cancels a scheduled shutdown command.

Time Format

The following formats can be used:

HH:MM - Command executes at the specified time. Time is in 24-hour format.

+MM - Command executes after the specified numbers of minutes has passed.

now - Command executes immediately.

clear

Clears the contents from the terminal session window.

Note: *Pressing* `Ctrl+L` *will call this command.*

top

Displays Linux processes currently running.

Example

```
jsmith@GRV-DC01:~/backup_dir/profiles/jsmith$ top
top - 23:39:51 up 3 days, 13:12,  1 user,  load average: 1.22, 1.40, 1.45
top - 23:40:03 up 3 days, 13:12,  1 user,  load average: 1.17, 1.38, 1.44
Tasks: 262 total,   1 running, 261 sleeping,   0 stopped,   0 zombie
%Cpu(s): 12.6 us,  3.9 sy,  0.0 ni, 83.5 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :  15702.7 total,   5903.7 free,   4112.9 used,   5686.1 buff/cache
MiB Swap:   2048.0 total,   2048.0 free,      0.0 used.  10118.5 avail Mem

    PID USER      PR  NI    VIRT    RES    SHR S  %CPU  %MEM     TIME+ COMMAND
  47938 jsmith    20   0   38.4g 451024 119624 S  33.4   2.8  38:56.02 code
   1564 jsmith    20   0 5544096 384888 129408 S   6.6   2.4  30:07.72 gnome-she
  55404 jsmith    20   0 2459792 130976  88456 S   5.0   0.8  10:42.37 Isolated
  47906 jsmith    20   0   16.7g 117356  83672 S   4.6   0.7  19:48.92 code
    416 root     -51   0       0      0      0 S   4.0   0.0   3:29.84 irq/50-rm
  47869 jsmith    20   0   20.8g 173060 120988 S   3.0   1.1   5:02.55 code
   3431 jsmith    20   0  668904  90688  49288 S   2.3   0.6  12:20.18 Xwayland
   1874 jsmith    20   0 1783872 414320  60472 S   1.0   2.6   1:15.26 snap-stor
  24246 jsmith    20   0   12.6g 655640 284676 S   0.7   4.1  22:19.53 firefox
     14 root      20   0       0      0      0 I   0.3   0.0   0:34.17 rcu_sched
    480 systemd+  20   0   14776   6116   5316 S   0.3   0.0   0:56.00 systemd-o
  27254 jsmith    20   0 2532124 151620  90696 S   0.3   0.9   0:57.11 Isolated
  32026 jsmith    20   0 2706428 189700  95540 S   0.3   1.2   2:10.51 Isolated
```

kill [PID]

Sends the stop signal to the specified process.

> ***Note:*** *PIDs can be found with the* ***top*** *command.*

Example

```
jsmith@GRV-DC01:~/backup_dir/profiles/jsmith$ kill 12345
```

Additional Help

man [command_name]

Returns the manual page for the specified command.

> ***Note:*** *Press* `q` *to exit the manual.*