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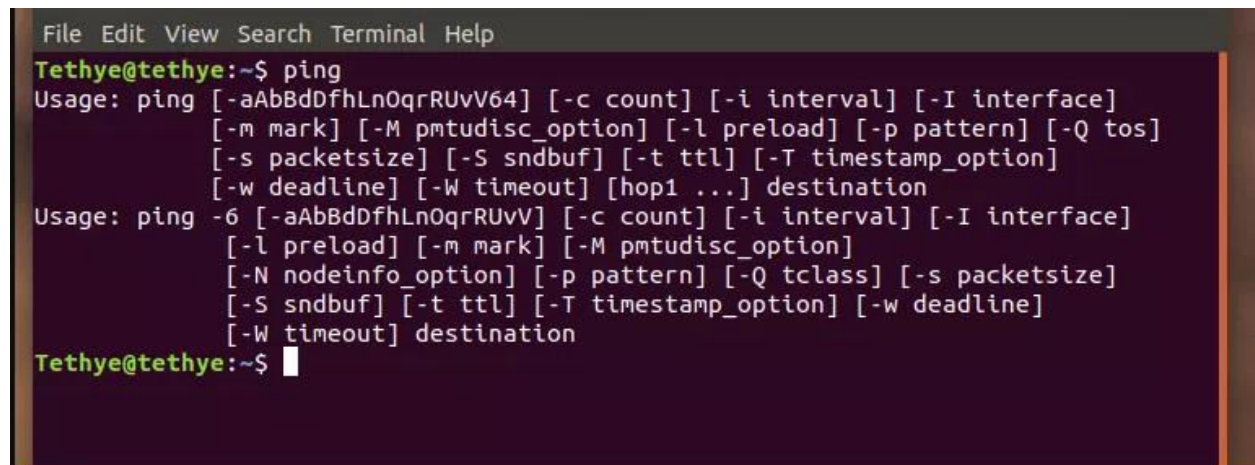
ID: IT-18055

Assignment No: 1

Assignment Name: Linux Command

Ping:

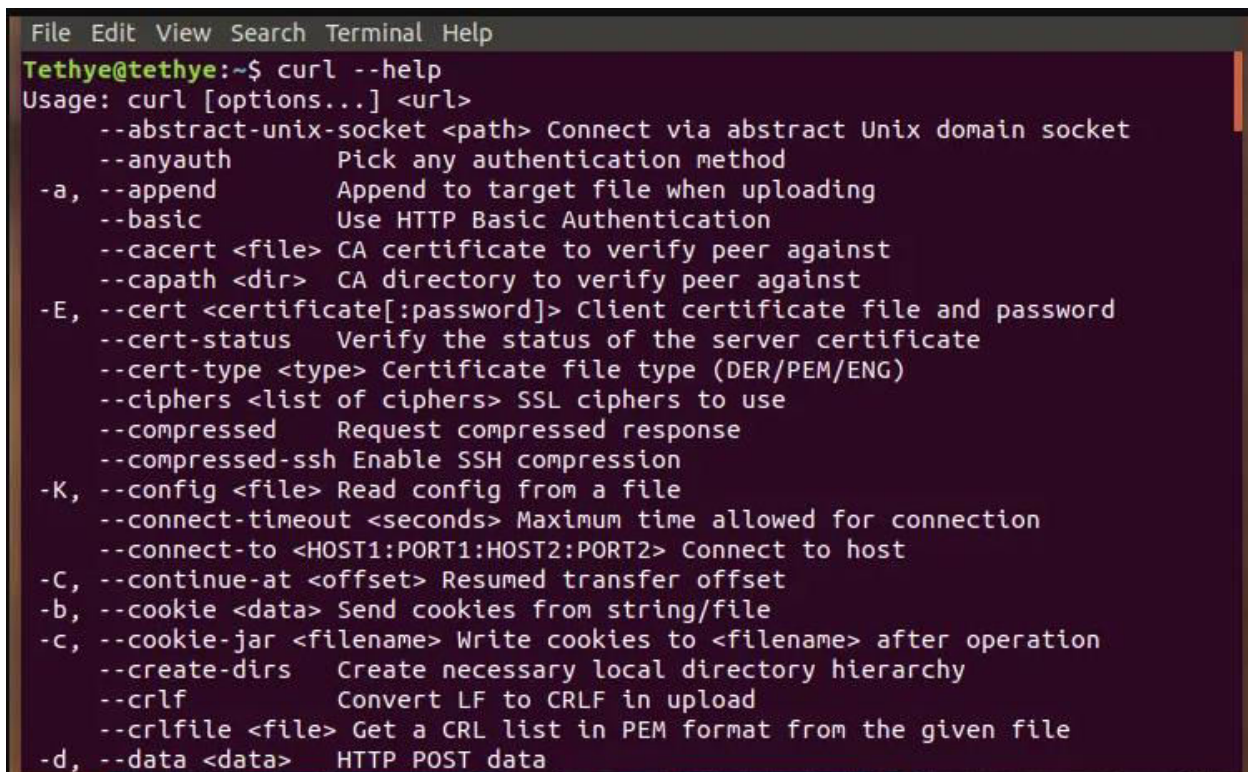
Ping works by sending one or more ICMP (Internet Control Message Protocol) Echo Request packages to a specified destination IP on the network and waits for a reply. The ping command is one of the most used tools for troubleshooting, testing, and diagnosing network connectivity issues.

A terminal window with a dark purple background and a light green title bar. The title bar contains the text "File Edit View Search Terminal Help". The terminal shows the command "Tethye@tethye:~\$ ping" followed by two lines of usage information. The first line is "Usage: ping [-aAbBdDfhLnOqrRUvV64] [-c count] [-i interval] [-I interface] [-m mark] [-M pmtudisc_option] [-l preload] [-p pattern] [-Q tos] [-s packetsize] [-S sndbuf] [-t ttl] [-T timestamp_option] [-w deadline] [-W timeout] [hop1 ...] destination". The second line is "Usage: ping -6 [-aAbBdDfhLnOqrRUvV] [-c count] [-i interval] [-I interface] [-l preload] [-m mark] [-M pmtudisc_option] [-N nodeinfo_option] [-p pattern] [-Q tclass] [-s packetsize] [-S sndbuf] [-t ttl] [-T timestamp_option] [-w deadline] [-W timeout] destination". The prompt "Tethye@tethye:~\$" is followed by a cursor.

```
File Edit View Search Terminal Help
Tethye@tethye:~$ ping
Usage: ping [-aAbBdDfhLnOqrRUvV64] [-c count] [-i interval] [-I interface]
          [-m mark] [-M pmtudisc_option] [-l preload] [-p pattern] [-Q tos]
          [-s packetsize] [-S sndbuf] [-t ttl] [-T timestamp_option]
          [-w deadline] [-W timeout] [hop1 ...] destination
Usage: ping -6 [-aAbBdDfhLnOqrRUvV] [-c count] [-i interval] [-I interface]
          [-l preload] [-m mark] [-M pmtudisc_option]
          [-N nodeinfo_option] [-p pattern] [-Q tclass] [-s packetsize]
          [-S sndbuf] [-t ttl] [-T timestamp_option] [-w deadline]
          [-W timeout] destination
Tethye@tethye:~$
```

CURL:

Curl is a command line tool to transfer data to or from a server, using any of the supported protocols (HTTP, FTP, IMAP, POP3, SCP, SFTP, SMTP, TFTP, TELNET, LDAP or FILE). curl is powered by Libcurl. This tool is preferred for automation, since it is designed to work without user interaction.

A screenshot of a terminal window with a dark background and light-colored text. The window title bar shows 'File Edit View Search Terminal Help'. The prompt is 'Tethye@tethye:~\$' and the command entered is 'curl --help'. The output lists various curl options and their descriptions, including --abstract-unix-socket, --anyauth, -a, --append, --basic, --cacert, --capath, -E, --cert, --cert-status, --cert-type, --ciphers, --compressed, --compressed-ssh, -K, --config, --connect-timeout, --connect-to, -C, --continue-at, -b, --cookie, -c, --cookie-jar, --create-dirs, --crlf, --crlfile, and -d, --data.

```
File Edit View Search Terminal Help
Tethye@tethye:~$ curl --help
Usage: curl [options...] <url>
  --abstract-unix-socket <path> Connect via abstract Unix domain socket
  --anyauth              Pick any authentication method
-a, --append            Append to target file when uploading
--basic                 Use HTTP Basic Authentication
--cacert <file>         CA certificate to verify peer against
--capath <dir>          CA directory to verify peer against
-E, --cert <certificate[:password]> Client certificate file and password
--cert-status           Verify the status of the server certificate
--cert-type <type>      Certificate file type (DER/PEM/ENG)
--ciphers <list of ciphers> SSL ciphers to use
--compressed            Request compressed response
--compressed-ssh        Enable SSH compression
-K, --config <file>     Read config from a file
--connect-timeout <seconds> Maximum time allowed for connection
--connect-to <HOST1:PORT1:HOST2:PORT2> Connect to host
-C, --continue-at <offset> Resumed transfer offset
-b, --cookie <data>     Send cookies from string/file
-c, --cookie-jar <filename> Write cookies to <filename> after operation
--create-dirs           Create necessary local directory hierarchy
--crlf                  Convert LF to CRLF in upload
--crlfile <file>        Get a CRL list in PEM format from the given file
-d, --data <data>       HTTP POST data
```

WGET:

WGET is a free utility for non-interactive download of files from the web. It supports HTTP, HTTPS, and FTP protocols.

```
File Edit View Search Terminal Help
Tethye@tethye:~$ wget --help
GNU Wget 1.19.4, a non-interactive network retriever.
Usage: wget [OPTION]... [URL]...

Mandatory arguments to long options are mandatory for short options too.

Startup:
  -V, --version          display the version of Wget and exit
  -h, --help             print this help
  -b, --background       go to background after startup
  -e, --execute=COMMAND  execute a '.wgetrc'-style command

Logging and input file:
  -o, --output-file=FILE  log messages to FILE
  -a, --append-output=FILE append messages to FILE
  -d, --debug             print lots of debugging information
  -q, --quiet             quiet (no output)
  -v, --verbose           be verbose (this is the default)
  -nv, --no-verbose       turn off verbosity, without being quiet
  --report-speed=TYPE     output bandwidth as TYPE. TYPE can be bits
  -i, --input-file=FILE   download URLs found in local or external FILE
  -F, --force-html        treat input file as HTML
  -B, --base=URL          resolves HTML input-file links (-i -F)
                        relative to URL
```

TC:

TC is used to configure Traffic Control in the Linux kernel. Traffic Control consists of the following: SHAPING When traffic is shaped, its rate of transmission is under control. Shaping may be more than lowering the available bandwidth - it is also used to smooth out bursts in traffic for better network behaviour.

```
File Edit View Search Terminal Help
Tethye@tethye:~$ tc
Usage: tc [ OPTIONS ] OBJECT { COMMAND | help }
       tc [-force] -batch filename
where  OBJECT := { qdisc | class | filter | action | monitor | exec }
       OPTIONS := { -s[tatistics] | -d[etails] | -r[aw] | -p[retty] | -b[atch] [
filename] | -n[etns] name |
               -nm | -nam[es] | { -cf | -conf } path } | -j[son]
Tethye@tethye:~$
```

DIG/NSLOOKUP:

Dig (Domain Information Groper) is a command line utility that performs DNS lookup by querying name servers and displaying the result to you. In this tutorial, you'll find all the basic uses of the command you should know in the Linux operating system.

```
File Edit View Search Terminal Help
Tethye@tethye:~$ dig

; <<>> DiG 9.11.3-1ubuntu1.13-Ubuntu <<>>
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 14856
;; flags: qr rd ra; QUERY: 1, ANSWER: 13, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 65494
;; QUESTION SECTION:
;.                               IN      NS

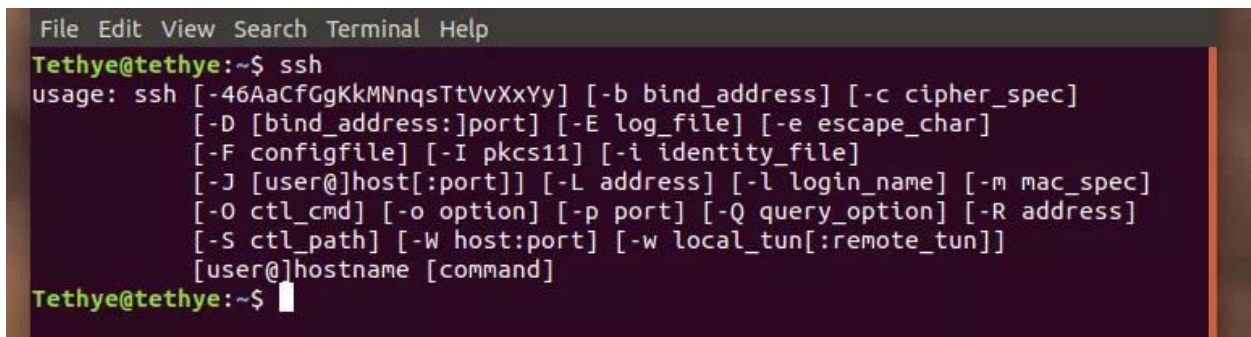
;; ANSWER SECTION:
.      57561    IN      NS      d.root-servers.net.
.      57561    IN      NS      j.root-servers.net.
.      57561    IN      NS      g.root-servers.net.
.      57561    IN      NS      m.root-servers.net.
.      57561    IN      NS      b.root-servers.net.
.      57561    IN      NS      l.root-servers.net.
.      57561    IN      NS      i.root-servers.net.
.      57561    IN      NS      a.root-servers.net.
.      57561    IN      NS      k.root-servers.net.
.      57561    IN      NS      f.root-servers.net.
.      57561    IN      NS      e.root-servers.net.
.      57561    IN      NS      h.root-servers.net.
.      57561    IN      NS      c.root-servers.net.

;; Query time: 11 msec
;; SERVER: 127.0.0.53#53(127.0.0.53)
;; WHEN: Wed Dec 09 17:17:47 +06 2020
;; MSG SIZE rcvd: 239

Tethye@tethye:~$
```


SSH:

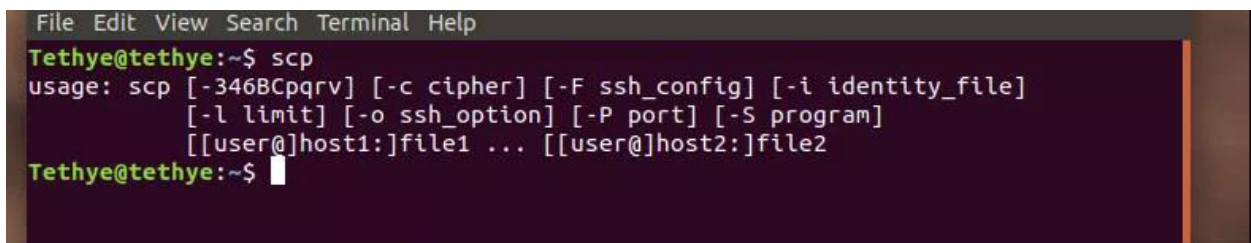
SSH command provides a secure encrypted connection between two hosts over an insecure network. This connection can also be used for terminal access, file transfers, and for tunneling other applications. Graphical X11 applications can also be run securely over SSH from a remote location.

A terminal window with a dark background and light green text. The title bar at the top reads 'File Edit View Search Terminal Help'. The prompt is 'Tethye@tethye:~\$'. The user has entered 'ssh', and the terminal displays the usage for the ssh command. The usage text is: 'usage: ssh [-46AaCfGgKkMnNqsTtVvXxYy] [-b bind_address] [-c cipher_spec] [-D [bind_address:]port] [-E log_file] [-e escape_char] [-F configfile] [-I pkcs11] [-i identity_file] [-J [user@]host[:port]] [-L address] [-l login_name] [-m mac_spec] [-O ctl_cmd] [-o option] [-p port] [-Q query_option] [-R address] [-S ctl_path] [-W host:port] [-w local_tun[:remote_tun]] [user@]hostname [command]'. The prompt returns to 'Tethye@tethye:~\$' with a cursor.

```
File Edit View Search Terminal Help
Tethye@tethye:~$ ssh
usage: ssh [-46AaCfGgKkMnNqsTtVvXxYy] [-b bind_address] [-c cipher_spec]
          [-D [bind_address:]port] [-E log_file] [-e escape_char]
          [-F configfile] [-I pkcs11] [-i identity_file]
          [-J [user@]host[:port]] [-L address] [-l login_name] [-m mac_spec]
          [-O ctl_cmd] [-o option] [-p port] [-Q query_option] [-R address]
          [-S ctl_path] [-W host:port] [-w local_tun[:remote_tun]]
          [user@]hostname [command]
Tethye@tethye:~$
```

SCP:

SCP(secure copy) command in Linux system is used to copy file(s) between servers in a secure way. The SCP command or secure copy allows secure transferring of files in between the local host and the remote host or between two remote hosts.

A terminal window with a dark background and light green text. The title bar at the top reads 'File Edit View Search Terminal Help'. The prompt is 'Tethye@tethye:~\$'. The user has entered 'scp', and the terminal displays the usage for the scp command. The usage text is: 'usage: scp [-346BCpqrV] [-c cipher] [-F ssh_config] [-i identity_file] [-l limit] [-o ssh_option] [-P port] [-S program] [[user@]host1:]file1 ... [[user@]host2:]file2'. The prompt returns to 'Tethye@tethye:~\$' with a cursor.

```
File Edit View Search Terminal Help
Tethye@tethye:~$ scp
usage: scp [-346BCpqrV] [-c cipher] [-F ssh_config] [-i identity_file]
          [-l limit] [-o ssh_option] [-P port] [-S program]
          [[user@]host1:]file1 ... [[user@]host2:]file2
Tethye@tethye:~$
```

TCPDUMP:

TCPDUMP is a most powerful and widely used command-line packets sniffer or package analyzer tool which is used to capture or filter TCP/IP packets that received or transferred over a network on a specific interface. It is available under most of the Linux/Unix based operating systems.

```
Tethye@tethye:~$ tcpdump
tcpdump: wlp2s0: You don't have permission to capture on that device
(socket: Operation not permitted)
Tethye@tethye:~$
```