UNIX Course Module 10

Hands-on: 1

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Use of Ping Command

Operation 1: Use ping command to check the connectivity of host to another node. With the ping command, use the IP address or the hostname.

```
$ ping 192.168.122.1
```

```
intellipaat@localhost:~
File  Edit  View  Search  Terminal  Help
[intellipaat@localhost ~]$ ping 192.168.122.1
PING 192.168.122.1 (192.168.122.1) 56(84) bytes of data.
64 bytes from 192.168.122.1: icmp_seq=1 ttl=64 time=0.041 ms
64 bytes from 192.168.122.1: icmp_seq=2 ttl=64 time=0.086 ms
64 bytes from 192.168.122.1: icmp_seq=3 ttl=64 time=0.086 ms
64 bytes from 192.168.122.1: icmp_seq=4 ttl=64 time=0.075 ms
64 bytes from 192.168.122.1: icmp_seq=5 ttl=64 time=0.088 ms
64 bytes from 192.168.122.1: icmp_seq=6 ttl=64 time=0.088 ms
64 bytes from 192.168.122.1: icmp_seq=7 ttl=64 time=0.087 ms
64 bytes from 192.168.122.1: icmp_seq=8 ttl=64 time=0.088 ms
64 bytes from 192.168.122.1: icmp_seq=9 ttl=64 time=0.031 ms
64 bytes from 192.168.122.1: icmp_seq=10 ttl=64 time=0.088 ms
^C
--- 192.168.122.1 ping statistics ---
10 packets transmitted, 10 received, 0% packet loss, time 245ms
rtt min/avg/max/mdev = 0.031/0.075/0.088/0.023 ms
```

To get the IP address use ifconfig command.

```
intellipaat@localhost:~
File  Edit  View  Search  Terminal  Help
[intellipaat@localhost ~]$ ifconfig
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        ether 08:00:27:c9:a3:54  txqueuelen 1000  (Ethernet)
        RX packets 0  bytes 0 (0.0 B)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 0  bytes 0 (0.0 B)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING>  mtu 65536
        inet 127.0.0.1  netmask 255.0.0.0
        inet6 ::1  prefixlen 128  scopeid 0x10<host>
        loop  txqueuelen 1000  (Local Loopback)
        RX packets 40  bytes 3360 (3.2 KiB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 40  bytes 3360 (3.2 KiB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

virbr0: flags=4099<UP,BROADCAST,MULTICAST>  mtu 1500
        inet 192.168.122.1  netmask 255.255.255.0  broadcast 192.168.122.255
        ether 52:54:00:27:48:85  txqueuelen 1000  (Ethernet)
        RX packets 0  bytes 0 (0.0 B)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 0  bytes 0 (0.0 B)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
```

You can also ping a website as shown below:

```
intellipaat@localhost:~
File  Edit  View  Search  Terminal  Help
[intellipaat@localhost ~]$ ping www.intellipaat.com
PING www.intellipaat.com (104.20.37.203) 56(84) bytes of data.
64 bytes from 104.20.37.203 (104.20.37.203): icmp_seq=1 ttl=51 time=44.4 ms
64 bytes from 104.20.37.203 (104.20.37.203): icmp_seq=2 ttl=51 time=42.9 ms
64 bytes from 104.20.37.203 (104.20.37.203): icmp_seq=3 ttl=51 time=42.3 ms
64 bytes from 104.20.37.203 (104.20.37.203): icmp_seq=4 ttl=51 time=41.9 ms
64 bytes from 104.20.37.203 (104.20.37.203): icmp_seq=5 ttl=51 time=41.6 ms
^C
--- www.intellipaat.com ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 9ms
rtt min/avg/max/mdev = 41.599/42.617/44.392/1.018 ms
[intellipaat@localhost ~]$
```

The ping command will continuously keep on passing the packets. We can pass a specific number of packets as well.

Operation 2: Use the -c flag to pass a specific number of packets.

```
$ ping -c 6 192.168.122.1
```

```
intellipaat@localhost:~
File  Edit  View  Search  Terminal  Help
[intellipaat@localhost ~]$ ping -c 6 192.168.122.1
PING 192.168.122.1 (192.168.122.1) 56(84) bytes of data.
64 bytes from 192.168.122.1: icmp_seq=1 ttl=64 time=0.036 ms
64 bytes from 192.168.122.1: icmp_seq=2 ttl=64 time=0.086 ms
64 bytes from 192.168.122.1: icmp_seq=3 ttl=64 time=0.044 ms
64 bytes from 192.168.122.1: icmp_seq=4 ttl=64 time=0.047 ms
64 bytes from 192.168.122.1: icmp_seq=5 ttl=64 time=0.089 ms
64 bytes from 192.168.122.1: icmp_seq=6 ttl=64 time=0.089 ms

--- 192.168.122.1 ping statistics ---
6 packets transmitted, 6 received, 0% packet loss, time 113ms
rtt min/avg/max/mdev = 0.036/0.065/0.089/0.023 ms
[intellipaat@localhost ~]$
```

Use of ifconfig Command

Operation 1: The Kernel links up the software side to the hardware side using a network interface and using this command you can configure them.

```
$ ifconfig
```

```
[intellipaat@localhost ~]$ ifconfig
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 10.0.2.15  netmask 255.255.255.0  broadcast 10.0.2.255
        inet6 fe80::ff1e:f8f1:c97a:f5e4  prefixlen 64  scopeid 0x20<link>
        ether 08:00:27:f4:1d:6e  txqueuelen 1000  (Ethernet)
        RX packets 4660  bytes 4854560 (4.6 MiB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 1516  bytes 104039 (101.6 KiB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING>  mtu 65536
        inet 127.0.0.1  netmask 255.0.0.0
        inet6 ::1  prefixlen 128  scopeid 0x10<host>
        loop  txqueuelen 1000  (Local Loopback)
        RX packets 0  bytes 0 (0.0 B)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 0  bytes 0 (0.0 B)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

virbr0: flags=4099<UP,BROADCAST,MULTICAST>  mtu 1500
        inet 192.168.122.1  netmask 255.255.255.0  broadcast 192.168.122.255
        ether 52:54:00:71:dc:1f  txqueuelen 1000  (Ethernet)
        RX packets 0  bytes 0 (0.0 B)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 0  bytes 0 (0.0 B)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
```

For a specific connection, it looks like this:

```
[intellipaat@localhost ~]$ ifconfig enp0s3
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 10.0.2.15  netmask 255.255.255.0  broadcast 10.0.2.255
        inet6 fe80::ff1e:f8f1:c97a:f5e4  prefixlen 64  scopeid 0x20<link>
        ether 08:00:27:f4:1d:6e  txqueuelen 1000  (Ethernet)
        RX packets 4674  bytes 4855730 (4.6 MiB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 1530  bytes 105209 (102.7 KiB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
```

ifup:

```
[intellipaat@localhost ~]$ sudo ifdown enp0s3
[sudo] password for intellipaat:
Connection 'enp0s3' successfully deactivated (D-Bus active path: /org/freedesktop/NetworkManager/ActiveConnection/3)
```

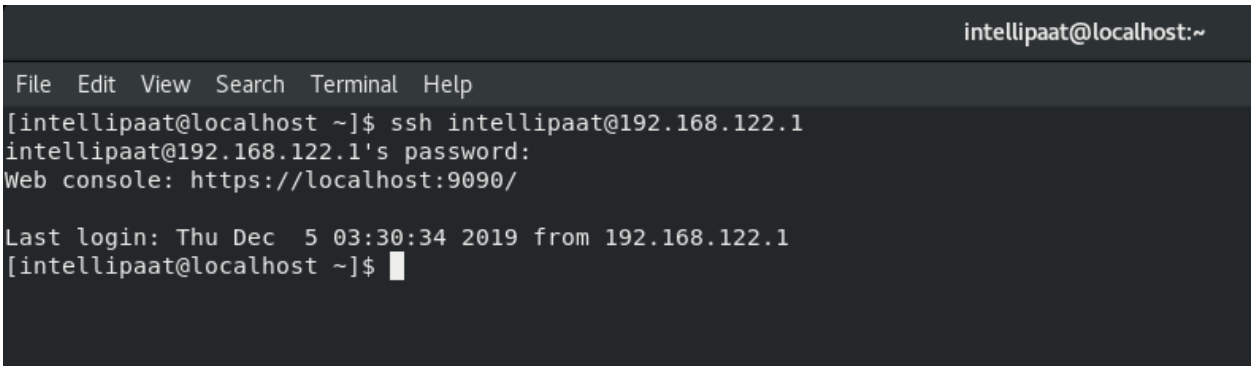
ifdown:

```
[intellipaat@localhost ~]$ sudo ifup enp0s3
Connection successfully activated (D-Bus active path: /org/freedesktop/NetworkManager/ActiveConnection/4)
```

Use of SSH Command

Operation 1: Secure Shell is used to connect to a remote computer securely

```
$ ssh username@ip_address
```



Use of WGET Command

Operation 1: A command used to retrieve content from web servers

$ wget <URL>

```
[intellipaat@localhost ~]$ wget https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/ec2-ug.pdf
--2019-12-26 02:18:05--  https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/ec2-ug.pdf
Resolving docs.aws.amazon.com (docs.aws.amazon.com)... 176.32.98.189
Connecting to docs.aws.amazon.com (docs.aws.amazon.com)|176.32.98.189|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 12426733 (12M) [application/pdf]
Saving to: 'ec2-ug.pdf'

ec2-ug.pdf                          100%[=======================================================================>]  11.85M   799KB/s    in 20s

2019-12-26 02:18:28 (598 KB/s) - 'ec2-ug.pdf' saved [12426733/12426733]

[intellipaat@localhost ~]$ ls
1.txt  Desktop  Documents  Downloads  ec2-ug.pdf  Music  output.txt  Pictures  Public  sql1.sh  sql2.sh  Templates  Videos
```

Use of cURL Command

Operation 1: A command to transfer data using various protocols

$ curl <URL>

```
[intellipaat@localhost ~]$ curl https://intellipaat.com/blog/what-is-data-science/ > intel.html
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
100 98664    0 98664    0     0   340k      0 --:--:-- --:--:-- --:--:--  340k
[intellipaat@localhost ~]$ ls
1.txt  Desktop  Documents  Downloads  ec2-ug.pdf  intel.html  Music  output.txt  Pictures  Public  sql1.sh  sql2.sh  Templates  Videos
```