

To get the internal ip address we use the command `ifconfig` to show the ip configurations of the linux machine.

We `grep` for `broadcast` and print out the second column using `awk` to show only the internal ip address.

```
1  #!/bin/bash
2
3  #Display internal IP address.
4
5  echo 'Your internal IP address is:'
6  ifconfig | grep broadcast | awk '{print $2}'
```

Result: Each time the user runs the script, the user will be presented with the internal ip address

```
(kali㉿kali)-[~/linuxproj]
└─$ bash linuxproj.sh
Your internal IP address is:
192.168.230.130
```

We use `curl` command; Client URL (cURL, pronounced “curl”) is a **command line tool that enables data exchange between a device and a server through a terminal**. Using this command line interface (CLI), a user specifies a server URL (the location where they want to send a request) and the data they want to send to that server URL.

In this case the url is `ifconfig.co`

This site provides the external ip address.

```
8  #Display external IP address.
9  echo 'Your external IP address is:'
10 myip= curl ifconfig.co
```

Result: Each time the user runs the script, the user will be presented with the external ip address.

```
Your external IP address is:
175.156.80.216
```

To get the default gateway ip address, we use the command `route` to display the Kernel IP routing table which also provides the information of the default gateway.

```
(kali@kali)-[~/linuxproj]
$ route
Kernel IP routing table
Destination Gateway Genmask Flags Metric Ref Use Iface
default 192.168.230.2 0.0.0.0 UG 100 0 0 eth0
192.168.230.0 0.0.0.0 255.255.255.0 0 100 0 0 eth0
```

We `grep UG` to only get the line containing the default gateway's ip address and print out the second column using `awk` to show only the default gateway ip address.

This is the script:

```
12 #Display default gateway.
13 echo 'Your default gateway is:'
14 route | grep 'UG' | awk '{print $2}'
15 echo ''
```

Result: Each time the user runs the script, the user will be presented with the external ip address.

```
Your default gateway is:
192.168.230.2
```

We use the command `df -H /dev/sda1` to show the information on the hard disk of the computer we are using.

```
16 #Display hard disk size
17 echo 'Your hard disk size is:'
18 df -H /dev/sda1
19 echo ''
```

Result: Each time the user runs the script, the user will be presented with the information of the hard disk which includes the total hard disk size, used space and also the available/free space on the hard disk.

```
Your hard disk size is:
Filesystem      Size  Used Avail Use% Mounted on
/dev/sda1       83G   19G   60G   25% /
```

To get the Top 5 directories we use : `du -ah /home | sort -n -r | head -n 5`
`du` - is disk usage, `-a` is all the information in the `/home` directory, `-h` is to make the information human readable.

We then use `sort` to arrange the information, `-n` is sort numerically, `-r` is reverse the result so that the bigger numbers are on the top rather than the bottom.

Lastly use the command `head -n 5` to get the results of the top 5 directories.

```
20 #Display top 5 directories and their size.
21 echo 'Your top 5 directories are:'
22 du -ah /home | sort -n -r | head -n 5
23 echo ''
```

Result: Each time the user runs the script, the user will be presented with the information of the top 5 directories.

```
Your top 5 directories are:
800K /home/kali/.mozilla/firefox/wrt02rye.default-esr/storage/permanent/chrome/idb/3870112724rsegmnoittet-es.files
800K /home/kali/.cache/mozilla/firefox/wrt02rye.default-esr/cache2/entries/D2EB0C7D6998870A1BA3405A1E44E91E81BBB4D9
792K /home/kali/.mozilla/firefox/wrt02rye.default-esr/storage/permanent/chrome/idb/3870112724rsegmnoittet-es.files/1
788K /home/kali/.local/share/Trash/files
564K /home/kali/.cache/mozilla/firefox/wrt02rye.default-esr/safebrowsing/google4/goog-badbinurl-proto.vlpset
```

To display the CPU usage and get it to refresh every 10 seconds.

We use `top -d 10`.

The `top` utility is a commonly used tool for displaying system-performance information and `-d` to change the duration it refreshes. Typically it refreshes every 3 seconds but by doing `-d 10` it refreshes every 10 seconds.

```
24 #Display total CPU usage.
25 echo 'Total CPU usage:'
26 top -d 10
27
```

Result: Each time the user runs the script, the user will be presented with the CPU usage information and also the information will be refreshed every 10 seconds.

```
Total CPU usage:
top - 00:56:00 up 3:06, 1 user, load average: 0.20, 0.20, 0.18
Tasks: 202 total, 1 running, 201 sleeping, 0 stopped, 0 zombie
%Cpu(s): 0.3 us, 1.3 sy, 0.0 ni, 98.2 id, 0.0 wa, 0.0 hi, 0.2 si, 0.0 st
MiB Mem : 1965.9 total, 597.6 free, 988.3 used, 558.0 buff/cache
MiB Swap: 975.0 total, 975.0 free, 0.0 used. 977.6 avail Mem
```

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
838	root	20	0	509868	187540	81012	S	3.1	9.3	2:23.45	Xorg
84862	kali	20	0	573660	69856	45532	S	1.4	3.5	0:05.16	geany
1148	kali	20	0	1236524	110820	77392	S	0.6	5.5	0:54.77	xfwm4
56342	root	20	0	0	0	0	I	0.3	0.0	0:07.20	kworker/3:0-pm
497	root	20	0	167384	12560	7124	S	0.2	0.6	0:17.79	vmtoolsd
1206	kali	20	0	358560	42796	22332	S	0.2	2.1	0:28.86	panel-13-cpugra
1208	kali	20	0	358420	30636	20720	S	0.2	1.5	0:23.58	panel-15-genmon
15	root	20	0	0	0	0	I	0.1	0.0	0:08.35	rcu_preempt
1039	kali	20	0	267480	27032	17128	S	0.1	1.3	0:00.49	xfce4-session
1136	kali	20	0	164364	10080	7212	S	0.1	0.5	0:00.85	at-spi2-registr
1209	kali	20	0	658432	43988	34704	S	0.1	2.2	0:09.05	panel-16-pulsea
1211	kali	20	0	308852	14512	22204	S	0.1	2.2	0:02.00	1-10