

Network Task

Task 1 Description:

1. Get me the IP address of a particular domain (guvi.in). How do I find my CPU/memory usage of my server?. Test the connectivity between 2 nodes?

Task 1 is divided into 2 subdivided tasks:

1.1 Getting the IP address of guvi.in

```
host guvi.in
dig guvi.in
nslookup guvi.in
```

1.2 Finding the CPU/Memory usage of the server

```
top
htop
free -h
mpstat 1 5
```

1.3 Testing connectivity between 2 nodes

```
ping guvi.in      # sends ICMP Echo request until manually stopped
ping -c 5 guvi.in # sends exactly 5 ICMP Echo request
```

Task 2 Description:

2. I have deployed an application in guvi.com:9000, and logs show my app is running, but I'm unable to view the page. Check whether my port is open or not ?

Testing whether the port 9000 is open for guvi.com

```
telnet guvi.com 9000
nc -zv guvi.com 9000
curl -v http://guvi.com:9000
```

Screenshots :

Task 1 :

- 1 Get me the IP address of a particular domain (guvi.in). How do I find my CPU/memory usage of my server?. Test the connectivity between 2 nodes?

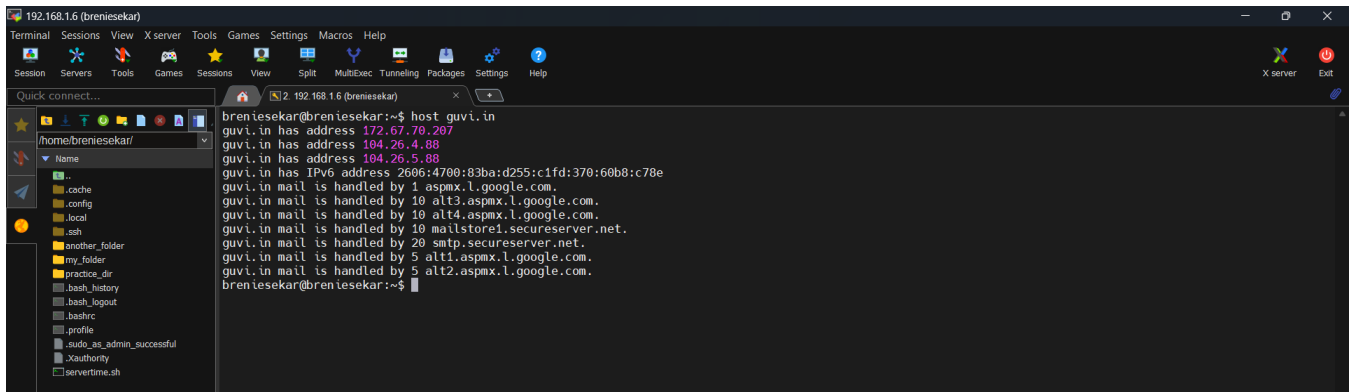
1.1 Getting the IP address of guvi.in

Command	Explanation	Output
host guvi.in	The host command is a simple DNS lookup utility that gives DNS records for a domain name.	guvi.in has address 104.26.5.88 guvi.in has address 172.67.70.207 guvi.in has address 104.26.4.88
dig guvi.in	Domain Information Groper It's a command-line tool used to query DNS servers to get information about domain names.	guvi.in. 30 IN A 104.26.5.88 guvi.in. 30 IN A 172.67.70.207 guvi.in. 30 IN A 104.26.4.88
nslookup guvi.in	Name Server Lookup. It's a command-line tool used to query DNS servers to find information about domain names — very similar to dig.	Server: 127.0.0.53 Address: 127.0.0.53#53 Non-authoritative answer: Name: guvi.in Address: 104.26.5.88 Name: guvi.in Address: 104.26.4.88 Name: guvi.in Address: 172.67.70.207 Name: guvi.in Address: 2606:4700:839a:d255:c13b:892:60b8:c78e

i) Command used : host guvi.in

Explanation :

The host command is a simple DNS lookup utility that gives DNS records for a domain name.



```
192.168.1.6 (breniesekar)
Terminal Sessions View X server Tools Games Settings Macros Help
Session Servers Tools Games Sessions View Split Multitex Tunneling Packages Settings Help
Quick connect...
/home/breniesekar/
Name
..
.cache
.config
.local
.ssh
.another_folder
.my_folder
.practice_dir
.bash_history
.bash_logout
.bashrc
.profile
.sudo_as_admin_successful
.xauthority
.servetime.sh
breniesekar@breniesekar:~$ host guvi.in
guvi.in has address 172.67.70.207
guvi.in has address 104.26.4.88
guvi.in has address 104.26.5.88
guvi.in has IPv6 address 2606:4700:83ba:d255:c1fd:370:60b8:c78e
guvi.in mail is handled by 1 aspmx.l.google.com.
guvi.in mail is handled by 10 alt3.aspmx.l.google.com.
guvi.in mail is handled by 10 alt4.aspmx.l.google.com.
guvi.in mail is handled by 10 mailstore1.secureserver.net.
guvi.in mail is handled by 20 smtp.secureserver.net.
guvi.in mail is handled by 5 alt1.aspmx.l.google.com.
guvi.in mail is handled by 5 alt2.aspmx.l.google.com.
breniesekar@breniesekar:~$
```

Output :

guvi.in has address 104.26.5.88
guvi.in has address 172.67.70.207
guvi.in has address 104.26.4.88

Inference :

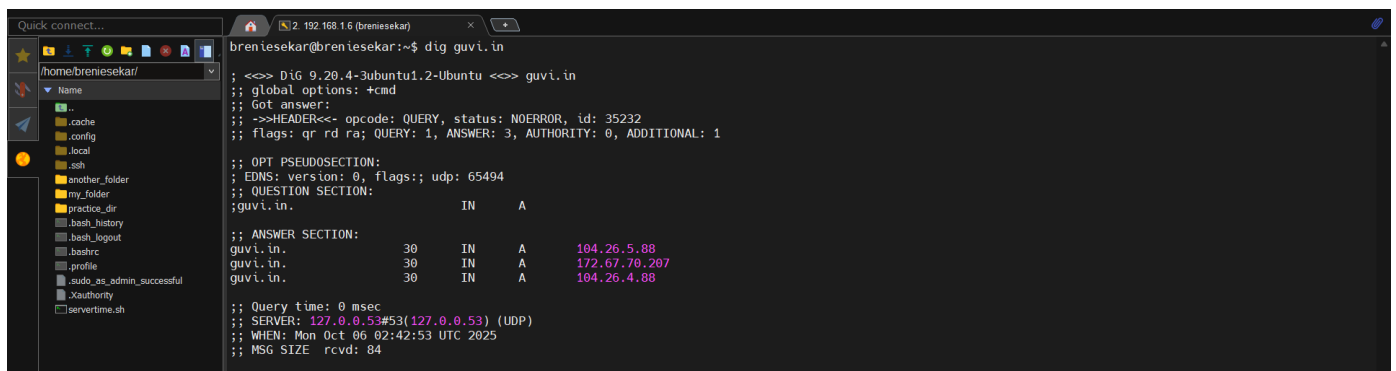
- These are the IPv4 addresses for guvi.in.
- Multiple addresses → used for load balancing and CDN distribution

ii) Command used : dig guvi.in

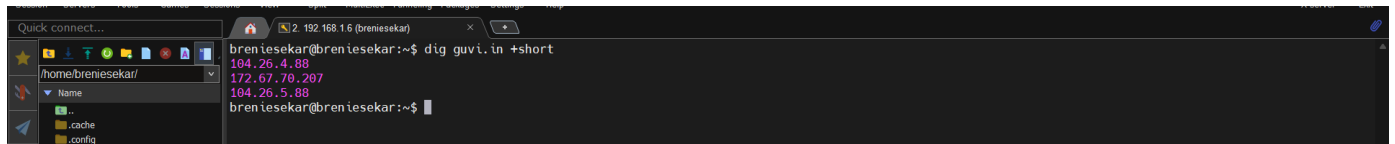
Explanation :

“dig” refers to Domain Information Groper

It’s a command-line tool used to query DNS servers to get information about domain names.



```
Quick connect...
/home/breniesekar/
Name
..
.cache
.config
.local
.ssh
.another_folder
.my_folder
.practice_dir
.bash_history
.bash_logout
.bashrc
.profile
.sudo_as_admin_successful
.xauthority
.servetime.sh
breniesekar@breniesekar:~$ dig guvi.in
;<>> Dig 0.20.4-3ubuntu1.2-Ubuntu <>> guvi.in
;; global options: +cmd
;; Got answer:
;; ->HEADER<- opcode: QUERY, status: NOERROR, id: 35232
;; flags: qr rd ra; QUERY: 1, ANSWER: 3, AUTHORITY: 0, ADDITIONAL: 1
;; OPT PSEUDOSECTION:
;; EDNS: version: 0, flags:; udp: 65494
;; QUESTION SECTION:
;guvi.in.                IN      A
;; ANSWER SECTION:
guvi.in.                 30      IN      A      104.26.5.88
guvi.in.                 30      IN      A      172.67.70.207
guvi.in.                 30      IN      A      104.26.4.88
;; Query time: 0 msec
;; SERVER: 127.0.0.53#53(127.0.0.53) (UDP)
;; WHEN: Mon Oct 06 02:42:53 UTC 2025
;; MSG SIZE rcvd: 84
breniesekar@breniesekar:~$
```



```
breniesekar@breniesekar:~$ dig guvi.in +short
104.26.4.88
172.67.70.207
104.26.5.88
breniesekar@breniesekar:~$
```

Output :

guvi.in.	30	IN	A	104.26.5.88
guvi.in.	30	IN	A	172.67.70.207
guvi.in.	30	IN	A	104.26.4.88

Inference :

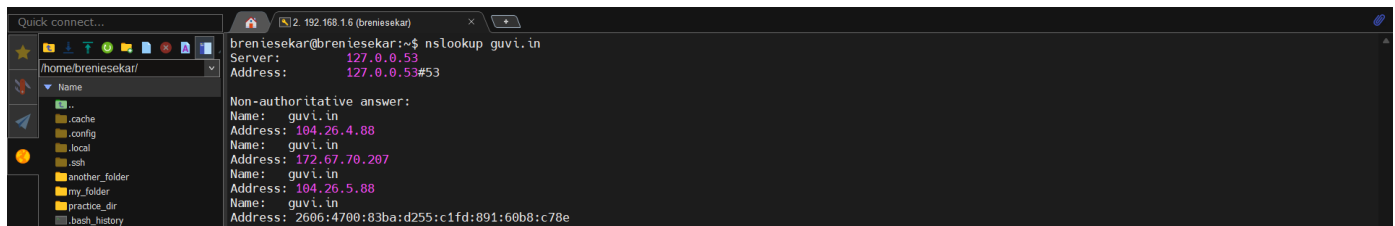
- 104.26.5.88, 172.67.70.207, 104.26.4.88 are the three IPv4 addresses for guvi.in.
- 30 is the TTL (Time To Live) in seconds. DNS results should be cached for only 30 seconds before re-querying.

iii) Command used : nslookup guvi.in

Explanation :

“nslookup” refers to Name Server Lookup.

It’s a command-line tool used to query DNS servers to find information about domain names very similar to dig.



```
breniesekar@breniesekar:~$ nslookup guvi.in
Server:      127.0.0.53
Address:     127.0.0.53#53

Non-authoritative answer:
Name:   guvi.in
Address: 104.26.4.88
Name:   guvi.in
Address: 172.67.70.207
Name:   guvi.in
Address: 104.26.5.88
Name:   guvi.in
Address: 2606:4700:83ba:d25:c1fd:891:60b8:c78e
```

Output :

Server: 127.0.0.53
Address: 127.0.0.53#53

Non-authoritative answer:

Name: guvi.in
Address: 104.26.5.88

Name: guvi.in
Address: 104.26.4.88

Name: guvi.in
Address: 172.67.70.207

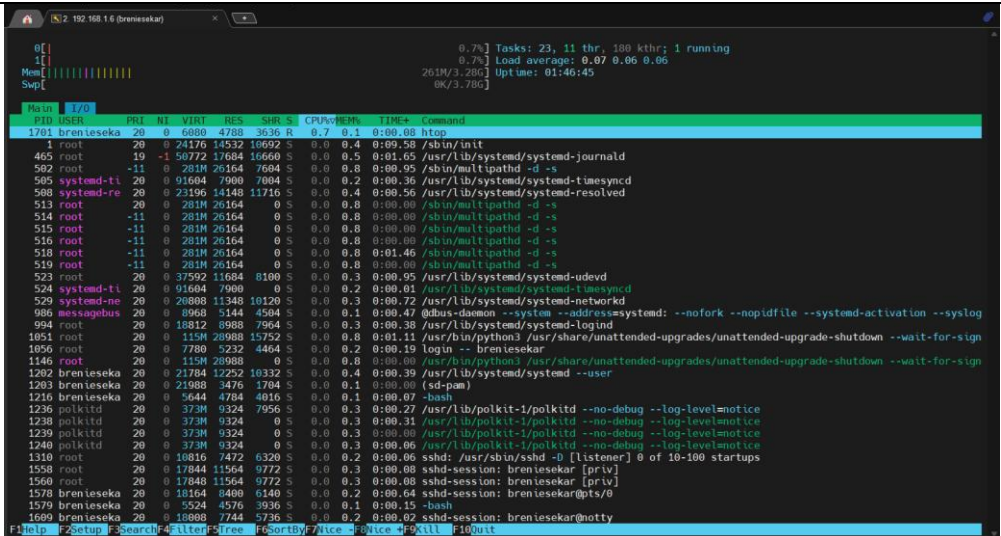
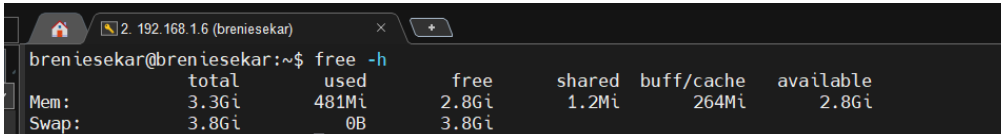
Name: guvi.in

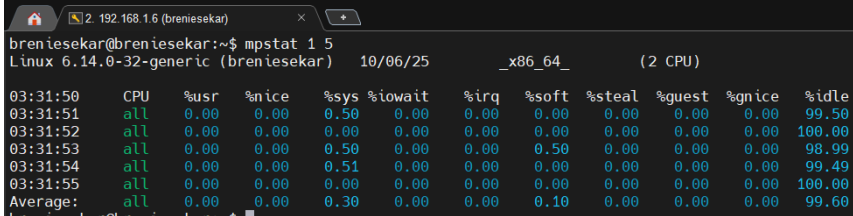
Address: 2606:4700:839a:d255:c13b:892:60b8:c78e

Inference :

- Server : DNS server answering your query.
- Address : IP address of that DNS server.
- Non-authoritative answer : Result from a DNS cache, not directly from the domain's authoritative DNS server.
- Then the list of IP addresses for the domain.

1.2 Finding the CPU/Memory usage of the server

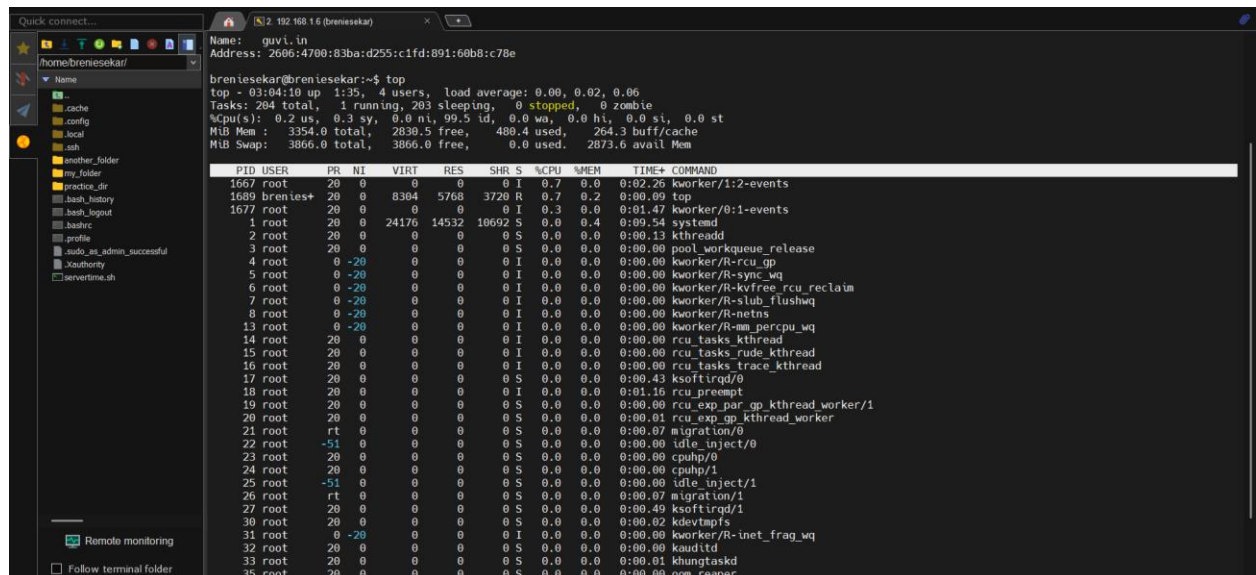
Command	Explanation	Output
top	top command is a real-time system monitoring tool that displays CPU usage, Memory usage and Running processes.	<pre>top - 03:04:10 up 1:35, 4 users, load average: 0.00, 0.02, 0.06 Tasks: 204 total, 1 running, 203 sleeping, 0 stopped, 0 zombie %Cpu(s): 0.2 us, 0.3 sy, 0.0 ni, 99.5 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st MiB Mem : 3354.0 total, 2830.5 free, 480.4 used, 264.3 buff/cache MiB Swap: 3866.0 total, 3866.0 free, 0.0 used. 2873.6 avail Mem PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND 1667 root 20 0 0 0 0 I 0.7 0.0 0:02.26 kworker/1:2-events 1689 brenieska 20 0 8304 5768 3720 R 0.7 0.2 0:00.09 top 1677 root 20 0 0 0 0 I 0.3 0.0 0:01.47 kworker/0:1-events 1 root 20 0 24176 14532 10692 S 0.0 0.4 0:09.54 systemd 2 root 20 0 0 0 0 S 0.0 0.0 0:00.13 kthreadd 3 root 20 0 0 0 0 S 0.0 0.0 0:00.00 pool_workqueue_release 4 root 0 -20 0 0 0 I 0.0 0.0 0:00.00 kworker/R-rcu_gp</pre>
htop	htop command is similar to top command but more user-friendly and visually appealing.	
free -h	The free command displays memory usage statistics. The -h option	

	makes the output human-readable.	
mpstat 1 5	mpstat reports CPU statistics of all processors for every 1 second, for 5 intervals.	 <pre> breniesekar@breniesekar:~\$ mpstat 1 5 Linux 6.14.0-32-generic (breniesekar) 10/06/25 _x86_64_ (2 CPU) 03:31:50 CPU %usr %nice %sys %iowait %irq %soft %steal %guest %gnice %idle 03:31:51 all 0.00 0.00 0.50 0.00 0.00 0.00 0.00 0.00 0.00 99.50 03:31:52 all 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 100.00 03:31:53 all 0.00 0.00 0.50 0.00 0.00 0.50 0.00 0.00 0.00 98.99 03:31:54 all 0.00 0.00 0.51 0.00 0.00 0.00 0.00 0.00 0.00 99.49 03:31:55 all 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 100.00 Average: all 0.00 0.00 0.30 0.00 0.00 0.10 0.00 0.00 0.00 99.60 </pre>

i) Command used : top

Explanation :

top command is a real-time system monitoring tool that displays CPU usage, Memory usage and Running processes.



```

breniesekar@breniesekar:~$ top
top - 03:04:10 up 1:35, 4 users, load average: 0.00, 0.02, 0.06
Tasks: 284 total, 1 running, 283 sleeping, 0 stopped, 0 zombie
%Cpu(s): 0.2 us, 0.3 sy, 0.0 ni, 99.5 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st
Mem Mem : 3354.0 total, 2830.5 free, 488.4 used, 264.3 buff/cache
Mem Swap: 3866.0 total, 3866.0 free, 0.0 used, 2873.6 avail Mem

  PID USER      PR  NI  VIRT  RES  SHR S  %CPU  %MEM    TIME+  COMMAND
1667 root        20   0    0    0    0 I   0.7   0.0   0:02.26 kworker/1:2-events
1689 brenies+  20   0   8304  5768  3720 R   0.7   0.2   0:00.09 top
1677 root        20   0    0    0    0 I   0.3   0.0   0:01.47 kworker/0:1-events
   1 root        20   0 24176 14532 10692 S   0.0   0.4   0:09.54 systemd
   2 root        20   0    0    0    0 S   0.0   0.0   0:00.13 kthreadd
   3 root        20   0    0    0    0 S   0.0   0.0   0:00.00 pool_workqueue_release
   4 root        0 -20    0    0    0 I   0.0   0.0   0:00.00 kworker/R-rcu_gp
   5 root        0 -20    0    0    0 I   0.0   0.0   0:00.00 kworker/R-sync_wq
   6 root        0 -20    0    0    0 I   0.0   0.0   0:00.00 kworker/R-kvfree_rcu_reclaim
   7 root        0 -20    0    0    0 I   0.0   0.0   0:00.00 kworker/R-slub_flushwq
   8 root        0 -20    0    0    0 I   0.0   0.0   0:00.00 kworker/R-netns
  13 root        0 -20    0    0    0 I   0.0   0.0   0:00.00 kworker/R-mm_percpu_wq
  14 root        0 -20    0    0    0 I   0.0   0.0   0:00.00 rcu_tasks_kthread
  15 root        0 -20    0    0    0 I   0.0   0.0   0:00.00 rcu_tasks_rude_kthread
  16 root        0 -20    0    0    0 I   0.0   0.0   0:00.00 rcu_tasks_trace_kthread
  17 root        0 -20    0    0    0 S   0.0   0.0   0:00.43 ksoftirqd/0
  18 root        0 -20    0    0    0 I   0.0   0.0   0:01.16 rcu_preempt
  19 root        0 -20    0    0    0 S   0.0   0.0   0:00.00 rcu_exp_par_gp kthread worker/1
  20 root        0 -20    0    0    0 S   0.0   0.0   0:00.01 rcu_exp_gp kthread worker
  21 root        rt   0    0    0    0 S   0.0   0.0   0:00.07 migration/0
  22 root       -51   0    0    0    0 S   0.0   0.0   0:00.00 idle_inject/0
  23 root        20   0    0    0    0 S   0.0   0.0   0:00.00 cpuhp/0
  24 root        20   0    0    0    0 S   0.0   0.0   0:00.00 cpuhp/1
  25 root       -51   0    0    0    0 S   0.0   0.0   0:00.00 idle_inject/1
  26 root        rt   0    0    0    0 S   0.0   0.0   0:00.07 migration/1
  27 root        20   0    0    0    0 S   0.0   0.0   0:00.49 ksoftirqd/1
  30 root        20   0    0    0    0 S   0.0   0.0   0:00.02 kdevtmpfs
  31 root        0 -20    0    0    0 I   0.0   0.0   0:00.00 kworker/R-inet_frag_wq
  32 root        20   0    0    0    0 S   0.0   0.0   0:00.00 kauditd
  33 root        20   0    0    0    0 S   0.0   0.0   0:00.01 khungtaskd
  35 root        20   0    0    0    0 S   0.0   0.0   0:00.00 oom_reaper

```

Output :

```

PID USER      PR  NI  VIRT  RES  SHR S  %CPU  %MEM    TIME+  COMMAND
1667 root        20   0    0    0    0 I   0.7   0.0   0:02.26 kworker/1:2-events
1689 brenies+  20   0   8304  5768  3720 R   0.7   0.2   0:00.09 top
1677 root        20   0    0    0    0 I   0.3   0.0   0:01.47 kworker/0:1-events
   1 root        20   0 24176 14532 10692 S   0.0   0.4   0:09.54 systemd
   2 root        20   0    0    0    0 S   0.0   0.0   0:00.13 kthreadd
   3 root        20   0    0    0    0 S   0.0   0.0   0:00.00 pool_workqueue_release
   4 root        0 -20    0    0    0 I   0.0   0.0   0:00.00 kworker/R-rcu_gp
   5 root        0 -20    0    0    0 I   0.0   0.0   0:00.00 kworker/R-sync_wq
   6 root        0 -20    0    0    0 I   0.0   0.0   0:00.00 kworker/R-kvfree_rcu_reclaim
   7 root        0 -20    0    0    0 I   0.0   0.0   0:00.00 kworker/R-slub_flushwq
   8 root        0 -20    0    0    0 I   0.0   0.0   0:00.00 kworker/R-netns

```

```

13 root    0 -20    0   0   0 I  0.0  0.0  0:00.00 kworker/R-mm_percpu_wq
14 root    20  0    0   0   0 I  0.0  0.0  0:00.00 rcu_tasks_kthread
15 root    20  0    0   0   0 I  0.0  0.0  0:00.00 rcu_tasks_rude_kthread
16 root    20  0    0   0   0 I  0.0  0.0  0:00.00 rcu_tasks_trace_kthread
17 root    20  0    0   0   0 S  0.0  0.0  0:00.43 ksoftirqd/0
18 root    20  0    0   0   0 I  0.0  0.0  0:01.16 rcu_preempt

```

Inference :

- The top command displays a real-time view of system processes, CPU usage, memory usage, and system load.
- Each row in the process table represents a process or kernel thread, showing details like PID, user, priority, memory, CPU usage, and state.
- Common process states include R (running), S (sleeping), and I (idle), with kernel threads often having 0 memory usage.
- %CPU shows the CPU usage percentage, %MEM shows memory usage percentage, and TIME+ shows total CPU time consumed by a process.
- This output helps monitor system performance and identify resource-intensive processes for optimization or troubleshooting.

ii) Command used : htop

Explanation :

htop command is similar to top command but more user-friendly and visually appealing.

```

0.7% Tasks: 23, 11 thr, 180 kthr; 1 running
0.7% Load average: 0.07 0.06 0.06
261M/3.28G Mem
0K/3.70G Swp
Uptime: 01:46:45

Main PID USER PRI NI VIRT RES SHR S CPU% MEM% TIME+ Command
1701 brenieseka 20 0 6080 4788 3636 R 0.7 0.1 0:00.08 htop
1 root 20 0 24176 14532 10692 S 0.0 0.4 0:09.58 /sbin/init
465 root 19 -1 50772 17684 16660 S 0.0 0.5 0:01.65 /usr/lib/systemd/systemd-journald
502 root -11 0 281M 26164 7004 S 0.0 0.8 0:00.95 /sbin/multipathd -d -s
505 systemd-ti 20 0 91604 7900 7004 S 0.0 0.2 0:00.36 /usr/lib/systemd/systemd-timesyncd
508 systemd-re 20 0 23196 14148 11716 S 0.0 0.4 0:00.56 /usr/lib/systemd/systemd-resolved
513 root 20 0 281M 26164 0 S 0.0 0.8 0:00.00 /sbin/multipathd -d -s
514 root -11 0 281M 26164 0 S 0.0 0.8 0:00.00 /sbin/multipathd -d -s
515 root -11 0 281M 26164 0 S 0.0 0.8 0:00.00 /sbin/multipathd -d -s
516 root -11 0 281M 26164 0 S 0.0 0.8 0:00.00 /sbin/multipathd -d -s
518 root -11 0 281M 26164 0 S 0.0 0.8 0:01.46 /sbin/multipathd -d -s
519 root -11 0 281M 26164 0 S 0.0 0.8 0:00.00 /sbin/multipathd -d -s
523 root 20 0 37592 11684 8100 S 0.0 0.3 0:00.95 /usr/lib/systemd/systemd-udevd
524 systemd-ti 20 0 91604 7900 0 S 0.0 0.2 0:00.01 /usr/lib/systemd/systemd-timesyncd
529 systemd-ne 20 0 20808 11348 10120 S 0.0 0.3 0:00.72 /usr/lib/systemd/systemd-networkd
986 messagebus 20 0 8968 5144 4504 S 0.0 0.1 0:00.47 @dbus-daemon --system --address=systemd: --nofork --nopidfile --systemd-activation --syslog
994 root 20 0 18812 8988 7964 S 0.0 0.3 0:00.38 /usr/lib/systemd/systemd-logind
1051 root 20 0 115M 28988 15752 S 0.0 0.8 0:01.11 /usr/bin/python3 /usr/share/unattended-upgrades/unattended-upgrade-shutdown --wait-for-sign
1056 root 20 0 7780 5232 4464 S 0.0 0.2 0:00.19 login -- breniesekar
1146 root 20 0 115M 28988 0 S 0.0 0.8 0:00.00 /usr/bin/python3 /usr/share/unattended-upgrades/unattended-upgrade-shutdown --wait-for-sign
1202 brenieseka 20 0 21784 12252 10332 S 0.0 0.4 0:00.39 /usr/lib/systemd/systemd --user
1203 brenieseka 20 0 21988 3476 1784 S 0.0 0.1 0:00.00 -bash
1216 brenieseka 20 0 5644 4784 4016 S 0.0 0.1 0:00.07 -bash
1236 polkitd 20 0 373M 9324 7956 S 0.0 0.3 0:00.27 /usr/lib/polkit-1/polkitd --no-debug --log-level=notice
1238 polkitd 20 0 373M 9324 0 S 0.0 0.3 0:00.31 /usr/lib/polkit-1/polkitd --no-debug --log-level=notice
1239 polkitd 20 0 373M 9324 0 S 0.0 0.3 0:00.00 /usr/lib/polkit-1/polkitd --no-debug --log-level=notice
1240 polkitd 20 0 373M 9324 0 S 0.0 0.3 0:00.06 /usr/lib/polkit-1/polkitd --no-debug --log-level=notice
1310 root 20 0 10816 7472 6320 S 0.0 0.2 0:00.06 sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups
1558 root 20 0 17844 11564 9772 S 0.0 0.3 0:00.08 sshd-session: breniesekar [priv]
1560 root 20 0 17848 11564 9772 S 0.0 0.3 0:00.08 sshd-session: breniesekar [priv]
1578 brenieseka 20 0 18164 8400 6140 S 0.0 0.2 0:00.64 sshd-session: breniesekar@pts/0
1579 brenieseka 20 0 5524 4576 3936 S 0.0 0.1 0:00.15 -bash
1609 brenieseka 20 0 18008 7744 5736 S 0.0 0.2 0:00.02 sshd-session: breniesekar@tty

F1 Help F2 Setup F3 Search F4 Filter F5 Tree F6 SortBy F7 Nice F8 Kill F9 Kill F10 Quit

```

Inference :

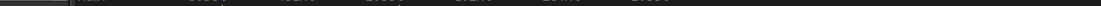
- htop is a more visual and interactive system monitoring tool than top, making it easier to track performance and manage processes.

iii) Command used : free -h

Explanation :

The `free` command displays memory usage statistics.

The -h option makes the output human-readable.



```
breniesekar@breniesekar:~$ free -h
```

	total	used	free	shared	buff/cache	available
Mem:	3.3Gi	481Mi	2.8Gi	1.2Mi	264Mi	2.8Gi
Swap:	3.8Gi	0B	3.8Gi			

Output :

	total	used	free	shared	buff/cache	available
Mem:	3.3Gi	481Mi	2.8Gi	1.2Mi	264Mi	2.8Gi
Swap:	3.8Gi	0B	3.8Gi			

Inference :

- 481 Mi (0.48 GB) / 3.3GB of RAM is currently in use.
- Around 2.8 GB is completely unused.
- Most of your RAM is free — the system is under very light memory load, with plenty of available memory.

iv) Command used : mpstat 1 5

Explanation :

mpstat reports CPU statistics of all processors for every 1 second, for 5 intervals.

```

Quick connect...
broniasekar@broniasekar:~$ mpstat 1 5
Linux 6.14.0-32-generic (broniasekar) 10/06/25 _x86_64_ (2 CPU)

03:31:50  CPU      rusr      rnice      %sys      %iowait      %irq      %soft      %steal      %guest      %gnice      %idle
03:31:51  all         0.00         0.00         0.50         0.00         0.00         0.00         0.00         0.00         0.00         99.50
03:31:52  all         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         100.00
03:31:53  all         0.00         0.00         0.50         0.00         0.00         0.50         0.00         0.00         0.00         98.99
03:31:54  all         0.00         0.00         0.51         0.00         0.00         0.00         0.00         0.00         0.00         99.49
03:31:55  all         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         100.00
Average:  all         0.00         0.00         0.30         0.00         0.00         0.10         0.00         0.00         0.00         99.60

```

Output :

```
Linux 6.14.0-32-generic (breniesekar) 10/06/25    _x86_64_    (2 CPU)
03:31:50 CPU %usr %nice %sys %iowait %irq %soft %steal %guest %gnice %idle
03:31:51 all 0.00 0.00 0.50 0.00 0.00 0.00 0.00 0.00 0.00 99.50
03:31:52 all 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 100.00
```


03:31:53	all	0.00	0.00	0.50	0.00	0.00	0.50	0.00	0.00	0.00	98.99
03:31:54	all	0.00	0.00	0.51	0.00	0.00	0.00	0.00	0.00	0.00	99.49
03:31:55	all	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00
Average:	all	0.00	0.00	0.30	0.00	0.00	0.10	0.00	0.00	0.00	99.60

Inference :

- The mpstat 1 5 command records CPU usage statistics every 1 second for 5 intervals.
- The output shows CPU usage broken down into user (%usr), system (%sys), idle (%idle), and other categories like iowait, irq, and soft.
- In this case, %usr is 0.00 and %sys is around 0.30 on average, indicating very low CPU activity.
- %idle is consistently high at 99.60%, meaning the CPU is idle most of the time with minimal workload.

1.3 Testing connectivity between 2 nodes

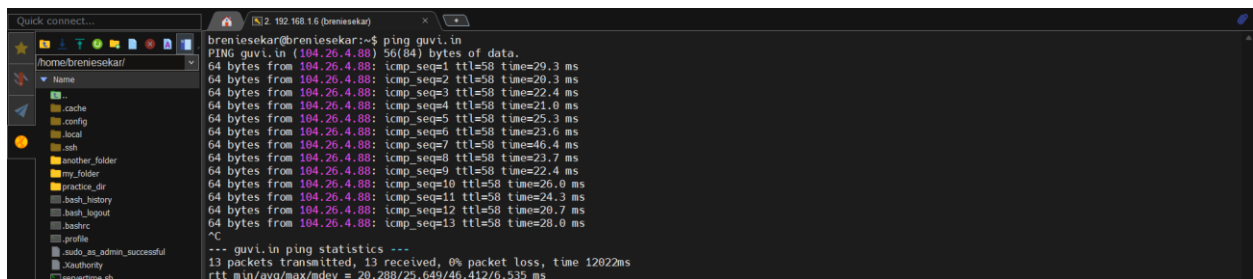
Command	Explanation	Output
ping guvi.in	ping is a network utility that tests connectivity between the computer and another host (website or IP). # sends ICMP Echo request until manually stopped	PING guvi.in (104.26.4.88) 56(84) bytes of data. 64 bytes from 104.26.4.88: icmp_seq=1 ttl=58 time=31.8 ms 64 bytes from 104.26.4.88: icmp_seq=2 ttl=58 time=27.8 ms 64 bytes from 104.26.4.88: icmp_seq=3 ttl=58 time=24.5 ms 64 bytes from 104.26.4.88: icmp_seq=4 ttl=58 time=18.5 ms 64 bytes from 104.26.4.88: icmp_seq=5 ttl=58 time=24.2 ms 64 bytes from 104.26.4.88: icmp_seq=1 ttl=58 time=31.8 ms 64 bytes from 104.26.4.88: icmp_seq=2 ttl=58 time=27.8 ms
ping -c 5 guvi.in	# sends exactly 5 ICMP Echo request	PING guvi.in (104.26.4.88) 56(84) bytes of data. 64 bytes from 104.26.4.88: icmp_seq=1 ttl=58 time=31.8 ms 64 bytes from 104.26.4.88: icmp_seq=2 ttl=58 time=27.8 ms 64 bytes from 104.26.4.88: icmp_seq=3 ttl=58 time=24.5 ms 64 bytes from 104.26.4.88: icmp_seq=4 ttl=58 time=18.5 ms 64 bytes from 104.26.4.88: icmp_seq=5 ttl=58 time=24.2 ms --- guvi.in ping statistics --- 5 packets transmitted, 5 received, 0% packet loss, time 4007ms rtt min/avg/max/mdev = 18.471/25.357/31.777/4.400 ms

i) Command used : ping guvi.in

Explanation :

ping is a network utility that tests connectivity between the computer and another host (website or IP).

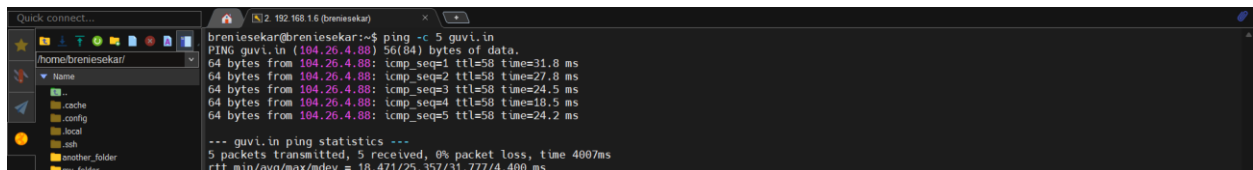
sends ICMP Echo request until manually stopped



```
breniesekar@breniesekar:~$ ping guvi.in
PING guvi.in (104.26.4.88) 56(84) bytes of data:
64 bytes from 104.26.4.88: icmp_seq=1 ttl=58 time=29.3 ms
64 bytes from 104.26.4.88: icmp_seq=2 ttl=58 time=20.3 ms
64 bytes from 104.26.4.88: icmp_seq=3 ttl=58 time=22.4 ms
64 bytes from 104.26.4.88: icmp_seq=4 ttl=58 time=21.0 ms
64 bytes from 104.26.4.88: icmp_seq=5 ttl=58 time=25.3 ms
64 bytes from 104.26.4.88: icmp_seq=6 ttl=58 time=23.6 ms
64 bytes from 104.26.4.88: icmp_seq=7 ttl=58 time=46.4 ms
64 bytes from 104.26.4.88: icmp_seq=8 ttl=58 time=23.7 ms
64 bytes from 104.26.4.88: icmp_seq=9 ttl=58 time=22.4 ms
64 bytes from 104.26.4.88: icmp_seq=10 ttl=58 time=26.0 ms
64 bytes from 104.26.4.88: icmp_seq=11 ttl=58 time=24.3 ms
64 bytes from 104.26.4.88: icmp_seq=12 ttl=58 time=20.7 ms
64 bytes from 104.26.4.88: icmp_seq=13 ttl=58 time=20.0 ms
^C
--- guvi.in ping statistics ---
13 packets transmitted, 13 received, 0% packet loss, time 12022ms
rtt min/avg/max/mdev = 20.288/25.649/46.412/6.535 ms
```

i) Command used : ping -c 5 guvi.in

sends exactly 5 ICMP Echo request



```
breniesekar@breniesekar:~$ ping -c 5 guvi.in
PING guvi.in (104.26.4.88) 56(84) bytes of data:
64 bytes from 104.26.4.88: icmp_seq=1 ttl=58 time=31.8 ms
64 bytes from 104.26.4.88: icmp_seq=2 ttl=58 time=27.8 ms
64 bytes from 104.26.4.88: icmp_seq=3 ttl=58 time=24.5 ms
64 bytes from 104.26.4.88: icmp_seq=4 ttl=58 time=18.5 ms
64 bytes from 104.26.4.88: icmp_seq=5 ttl=58 time=24.2 ms
--- guvi.in ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4007ms
rtt min/avg/max/mdev = 18.471/25.357/31.777/4.400 ms
```

Output :

```
PING guvi.in (104.26.4.88) 56(84) bytes of data.
64 bytes from 104.26.4.88: icmp_seq=1 ttl=58 time=31.8 ms
64 bytes from 104.26.4.88: icmp_seq=2 ttl=58 time=27.8 ms
64 bytes from 104.26.4.88: icmp_seq=3 ttl=58 time=24.5 ms
64 bytes from 104.26.4.88: icmp_seq=4 ttl=58 time=18.5 ms
64 bytes from 104.26.4.88: icmp_seq=5 ttl=58 time=24.2 ms
```

```
--- guvi.in ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4007ms
rtt min/avg/max/mdev = 18.471/25.357/31.777/4.400 ms
```

Inference :

- ping is a network utility that tests connectivity between the computer and another host (website or IP).
- It sends ICMP Echo Request packets to the target and waits for ICMP Echo Reply packets.
- Measures latency (response time) and packet loss.

- The average latency to guvi.in is approximately 25.36 ms.
- 0% packet loss confirms reliable network connectivity.

Task 2 :

2. I have deployed an application in guvi.com:9000, and logs show my app is running, but I'm unable to view the page. Check whether my port is open or not ?

Testing whether the port 9000 is open for guvi.com

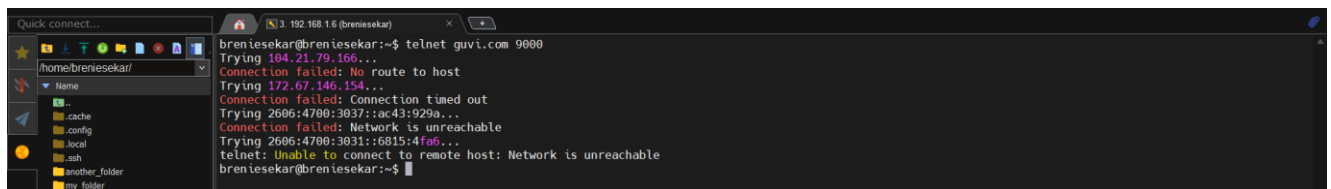
Command	Explanation	Output
telnet guvi.com 9000	Tests if a TCP connection can be made to guvi.com on port 9000.	Trying 104.21.79.166... Connection failed: No route to host Trying 172.67.146.154... Connection failed: Connection timed out Trying 2606:4700:3037::ac43:929a... Connection failed: Network is unreachable Trying 2606:4700:3031::6815:4fa6... telnet: Unable to connect to remote host: Network is unreachable
nc -zv guvi.com 9000	Checks if the port is open on the host without sending data. -z : Zero-I/O mode (scans without sending data). -v : Verbose mode (shows detailed connection results).	nc: connect to guvi.com (104.21.79.166) port 9000 (tcp) failed: Connection timed out nc: connect to guvi.com (172.67.146.154) port 9000 (tcp) failed: Connection timed out nc: connect to guvi.com (2606:4700:3037::ac43:929a) port 9000 (tcp) failed: Network is unreachable nc: connect to guvi.com (2606:4700:3031::6815:4fa6) port 9000 (tcp) failed: Network is unreachable
curl -v http://guvi.com:9000	Sends an HTTP request to guvi.com on port 9000 and shows detailed request/response info. -v : Verbose mode (shows headers, request details, and connection status).	* Host guvi.com:9000 was resolved. * IPv6: 2606:4700:3031::6815:4fa6, 2606:4700:3037::ac43:929a * IPv4: 172.67.146.154, 104.21.79.166 * Trying [2606:4700:3031::6815:4fa6]:9000... * Immediate connect fail for 2606:4700:3031::6815:4fa6: Network is unreachable * Trying [2606:4700:3037::ac43:929a]:9000...

		<p>* Immediate connect fail for 2606:4700:3037::ac43:929a: Network is unreachable</p> <p>* Trying 172.67.146.154:9000...</p> <p>* connect to 172.67.146.154 port 9000 from 192.168.1.6 port 41786 failed: Connection timed out</p> <p>* Trying 104.21.79.166:9000...</p> <p>* connect to 104.21.79.166 port 9000 from 192.168.1.6 port 48466 failed: Connection timed out</p> <p>* Failed to connect to guvi.com port 9000 after 268434 ms: Could not connect to server</p> <p>* closing connection #0</p> <p>curl: (28) Failed to connect to guvi.com port 9000 after 268434 ms: Could not connect to server</p>
--	--	---

i) Command used : telnet guvi.com 9000

Explanation :

Tests if a TCP connection can be made to guvi.com on port 9000.



```

breniesekar@breniesekar:~$ telnet guvi.com 9000
Trying 104.21.79.166...
Connection failed: No route to host
Trying 172.67.146.154...
Connection failed: Connection timed out
Trying 2606:4700:3037::ac43:929a...
Connection failed: Network is unreachable
Trying 2606:4700:3031::6815:4fa6...
telnet: Unable to connect to remote host: Network is unreachable
breniesekar@breniesekar:~$

```

Output :

```

Trying 104.21.79.166...
Connection failed: No route to host
Trying 172.67.146.154...
Connection failed: Connection timed out
Trying 2606:4700:3037::ac43:929a...
Connection failed: Network is unreachable
Trying 2606:4700:3031::6815:4fa6...
telnet: Unable to connect to remote host: Network is unreachable

```

Inference :

- The telnet guvi.com 9000 command failed because the port is not reachable.

- IPv4 attempts either timed out or showed no route to host, and IPv6 attempts failed due to no network route.
- While the domain guvi.com is reachable (DNS resolves correctly), port 9000 is closed or inaccessible.

ii) Command used : `nc -zv guvi.com 9000`

Explanation :

Checks if the port is open on the host without sending data.

-z : Zero-I/O mode (scans without sending data).

-v : Verbose mode (shows detailed connection results).

```

breniesekar@breniesekar:~$ nc -zv guvi.com 9000
nc: connect to guvi.com (172.67.146.154) port 9000 (tcp) failed: Connection timed out
nc: connect to guvi.com (104.21.79.166) port 9000 (tcp) failed: Connection timed out
nc: connect to guvi.com (2606:4700:3031::6815:4fa6) port 9000 (tcp) failed: Network is unreachable
nc: connect to guvi.com (2606:4700:3037::ac43:929a) port 9000 (tcp) failed: Network is unreachable
breniesekar@breniesekar:~$

```

Output :

nc: connect to guvi.com (104.21.79.166) port 9000 (tcp) failed: Connection timed out

nc: connect to guvi.com (172.67.146.154) port 9000 (tcp) failed: Connection timed out

nc: connect to guvi.com (2606:4700:3037::ac43:929a) port 9000 (tcp) failed: Network is unreachable

nc: connect to guvi.com (2606:4700:3031::6815:4fa6) port 9000 (tcp) failed: Network is unreachable

Inference :

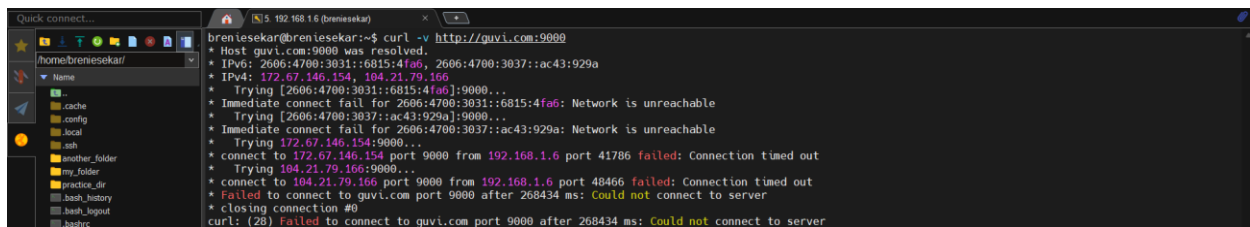
- The connection to guvi.com:9000 failed as the port is not reachable or blocked.
- Both IPv4 and IPv6 attempts timed out or had no network route, indicating the port is closed externally.

iii) Command used : `curl -v http://guvi.com:9000`

Explanation :

Sends an HTTP request to guvi.com on port 9000 and shows detailed request/response info.

-v : Verbose mode (shows headers, request details, and connection status).

A terminal window showing the output of a curl command. The command is 'curl -v http://guvi.com:9000'. The output shows that the host 'guvi.com:9000' was resolved to two IPv6 addresses and two IPv4 addresses. It then attempts to connect to each of these addresses on port 9000. All attempts fail with 'Network is unreachable' for IPv6 and 'Connection timed out' for IPv4. The final message is 'curl: (28) Failed to connect to guvi.com port 9000 after 268434 ms: Could not connect to server'.

```
Quick connect...
breniesekar@breniesekar:~$ curl -v http://guvi.com:9000
* Host guvi.com:9000 was resolved.
* IPv6: 2606:4700:3031::6815:4fa6, 2606:4700:3037::ac43:929a
* IPv4: 172.67.146.154, 104.21.79.166
* Trying [2606:4700:3031::6815:4fa6]:9000...
* Immediate connect fail for 2606:4700:3031::6815:4fa6: Network is unreachable
* Trying [2606:4700:3037::ac43:929a]:9000...
* Immediate connect fail for 2606:4700:3037::ac43:929a: Network is unreachable
* Trying 172.67.146.154:9000...
* connect to 172.67.146.154 port 9000 from 192.168.1.6 port 41786 failed: Connection timed out
* Trying 104.21.79.166:9000...
* connect to 104.21.79.166 port 9000 from 192.168.1.6 port 48466 failed: Connection timed out
* Failed to connect to guvi.com port 9000 after 268434 ms: Could not connect to server
* closing connection #0
curl: (28) Failed to connect to guvi.com port 9000 after 268434 ms: Could not connect to server
```

Output:

```
* Host guvi.com:9000 was resolved.
* IPv6: 2606:4700:3031::6815:4fa6, 2606:4700:3037::ac43:929a
* IPv4: 172.67.146.154, 104.21.79.166
* Trying [2606:4700:3031::6815:4fa6]:9000...
* Immediate connect fail for 2606:4700:3031::6815:4fa6: Network is unreachable
* Trying [2606:4700:3037::ac43:929a]:9000...
* Immediate connect fail for 2606:4700:3037::ac43:929a: Network is unreachable
* Trying 172.67.146.154:9000...
* connect to 172.67.146.154 port 9000 from 192.168.1.6 port 41786 failed: Connection timed out
* Trying 104.21.79.166:9000...
* connect to 104.21.79.166 port 9000 from 192.168.1.6 port 48466 failed: Connection timed out
* Failed to connect to guvi.com port 9000 after 268434 ms: Could not connect to server
* closing connection #0
curl: (28) Failed to connect to guvi.com port 9000 after 268434 ms: Could not connect to server
```

Inference :

- The curl command shows that while guvi.com resolves to valid IP addresses, connection attempts to port 9000 fail.
- IPv6 routes are unavailable, and IPv4 connections time out, indicating that the port is closed or blocked externally.

Task Summary :

➤ **Task 1:** Performed system and network checks:

- **1.1** Resolved the IP address of guvi.in using host, dig, and nslookup.
- **1.2** Checked server CPU and memory usage using top, htop, free -h, and mpstat.
- **1.3** Tested connectivity between nodes using ping with and without count limits.

➤ **Task 2:** Verified accessibility of port 9000 on guvi.com using:

- telnet guvi.com 9000
- nc -zv guvi.com 9000
- curl -v http://guvi.com:9000
- **Observation:** All commands failed, confirming port 9000 is not reachable externally (likely blocked by firewall or Cloudflare port restrictions).