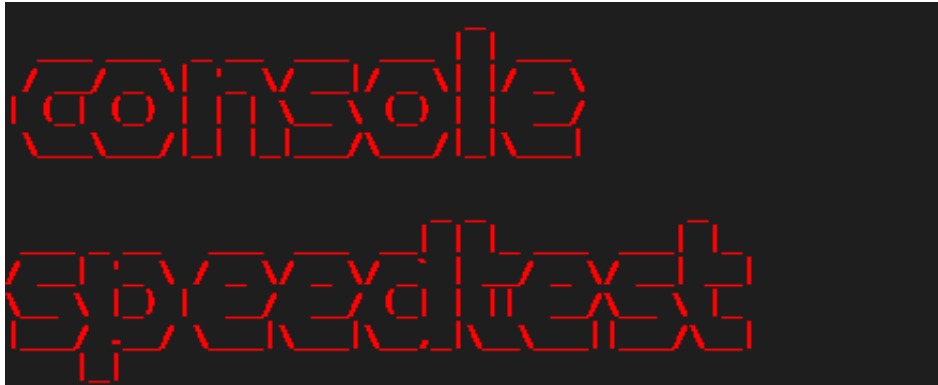


Check server Internet connectivity Speedtest from Linux terminal CLI

Author : admin



If you are a system administrator of a dedicated server and you have no access to Xserver Graphical GNOME / KDE etc. environment and you wonder how you can track the bandwidth connectivity speed of remote system to the internet and you happen to have a modern Linux distribution, here is few ways to do a **speedtest**.

1. Use speedtest-cli command line tool to test connectivity

speedtest-cli is a tiny tool written in python, to use it hence you need to have python installed on the server.

It is available both for Redhat Linux distros and Debians / Ubuntu etc. in the list of standard installable packages.

a) Install speedtest-cli on Fedora / CentOS / RHEL

On CentOS / RHEL / Scientific Linux lower than ver 8:

\$ sudo yum install python

On **CentOS 8 / RHEL 8** user type the following command to install *Python 3 or 2*:

\$ sudo yum install python3
\$ sudo yum install python2

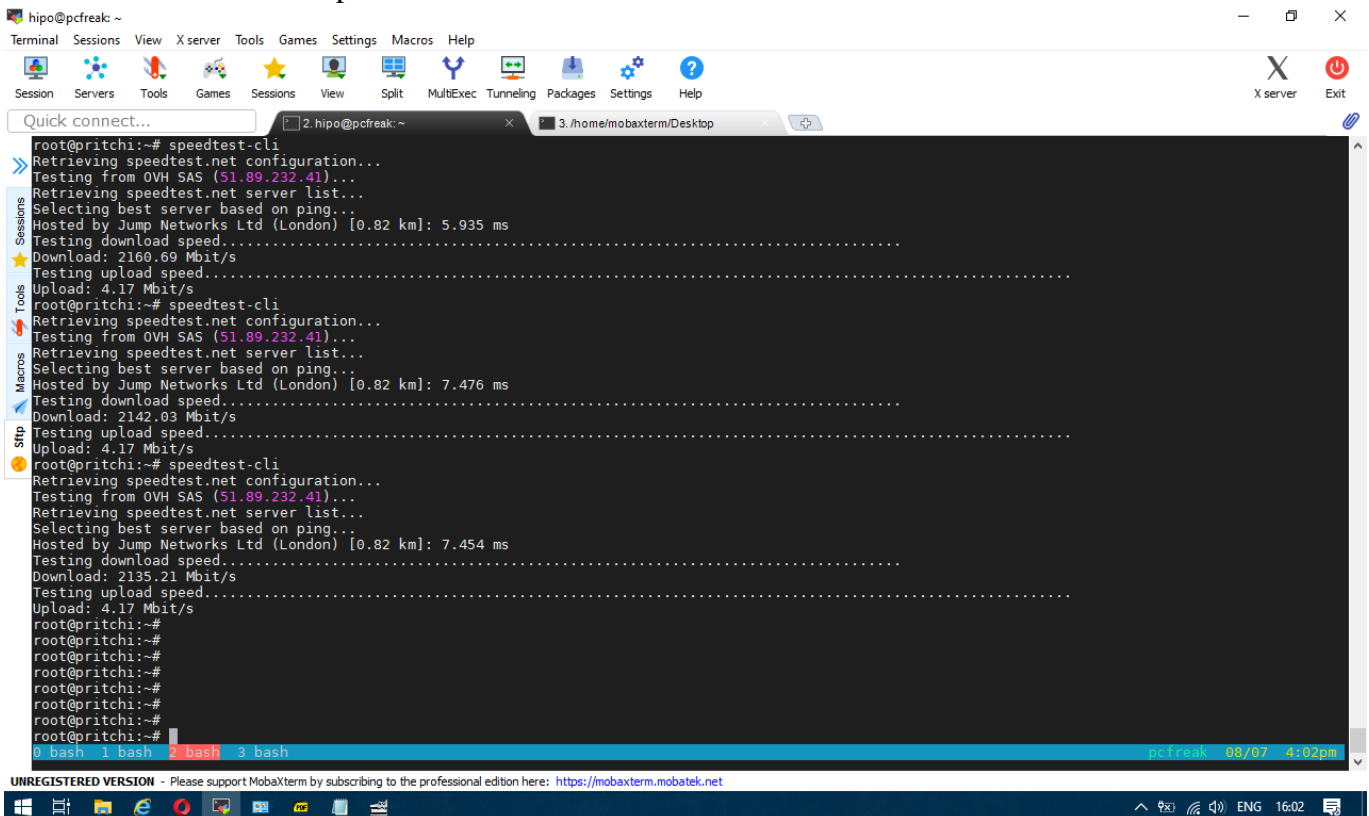
On Fedora Linux version 22+

\$ sudo dnf install python
\$ sudo dnf install pytho3

Once python is at place [download speedtest.py](#) or in case if [link is not reachable download mirrored version of speedtest.py on pc-freak.net here](#)

```
$ wget -O speedtest-cli https://raw.githubusercontent.com/sivel/speedtest-  
cli/master/speedtest.py  
$ chmod +x speedtest-cli
```

Then it is time to run script



```
root@pritchi:~# speedtest-cli  
Retrieving speedtest.net configuration...  
Testing from OVH SAS (51.89.232.41)...  
Retrieving speedtest.net server list...  
Selecting best server based on ping...  
Hosted by Jump Networks Ltd (London) [0.82 km]: 5.935 ms  
Testing download speed.....  
Download: 2160.69 Mbit/s  
Testing upload speed.....  
Upload: 4.17 Mbit/s  
root@pritchi:~# speedtest-cli  
Retrieving speedtest.net configuration...  
Testing from OVH SAS (51.89.232.41)...  
Retrieving speedtest.net server list...  
Selecting best server based on ping...  
Hosted by Jump Networks Ltd (London) [0.82 km]: 7.476 ms  
Testing download speed.....  
Download: 2142.03 Mbit/s  
Testing upload speed.....  
Upload: 4.17 Mbit/s  
root@pritchi:~# speedtest-cli  
Retrieving speedtest.net configuration...  
Testing from OVH SAS (51.89.232.41)...  
Retrieving speedtest.net server list...  
Selecting best server based on ping...  
Hosted by Jump Networks Ltd (London) [0.82 km]: 7.454 ms  
Testing download speed.....  
Download: 2135.21 Mbit/s  
Testing upload speed.....  
Upload: 4.17 Mbit/s  
root@pritchi:~#  
root@pritchi:~#  
root@pritchi:~#  
root@pritchi:~#  
root@pritchi:~#  
root@pritchi:~#  
root@pritchi:~#  
root@pritchi:~#  
0 bash 1 bash 2 bash 3 bash
```

To test enabled Bandwidth on the server

```
$ python speedtest-cli
```

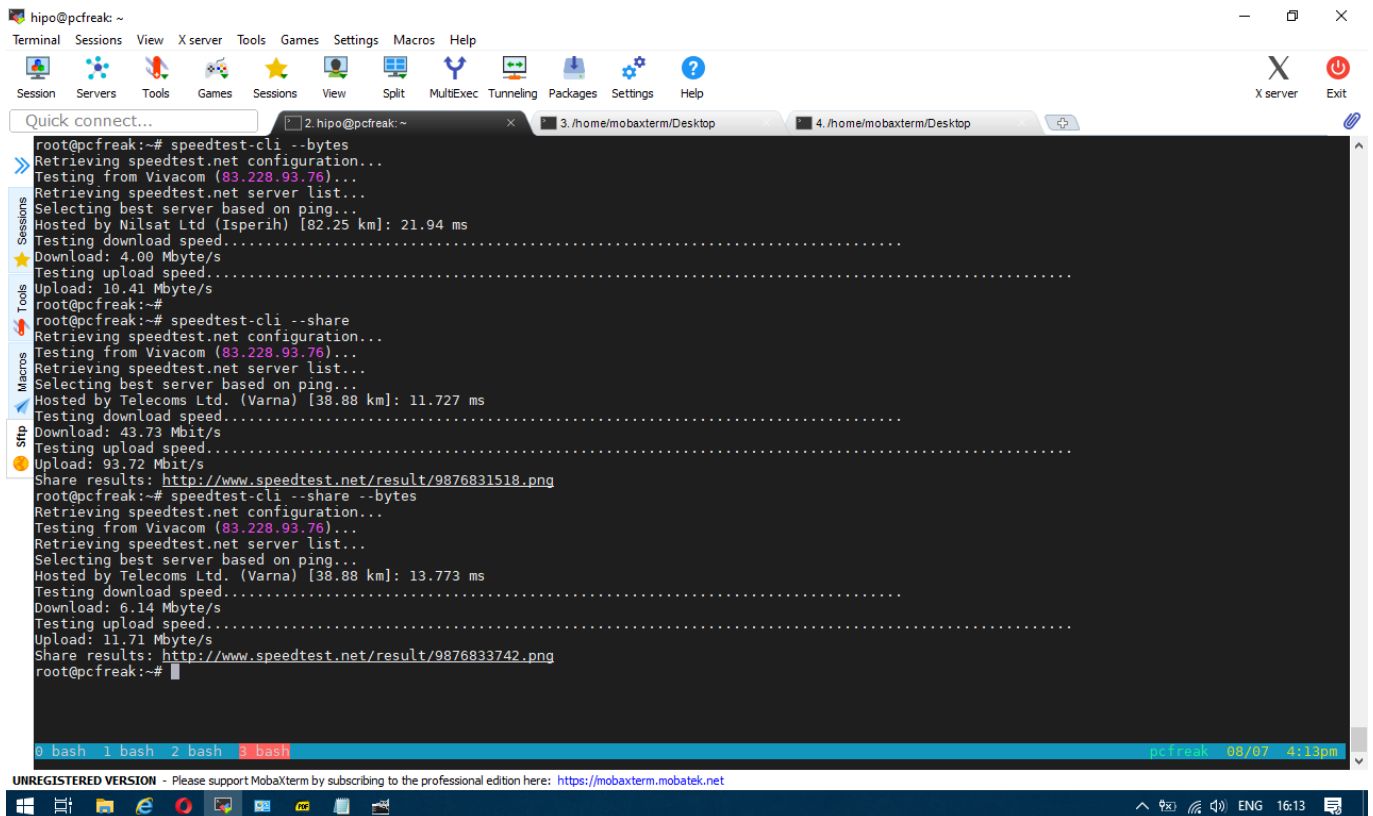
b) Install speedtest-cli on Debian

On Latest Debian 10 Buster speedtest is available out of the box in regular .deb repositories, so fetch it with **apt**

```
# apt install --yes speedtest-cli
```

```
...
```

You can give now speedtest-cli a try with **--bytes** arguments to get speed values in bytes instead of bits or if you want to generate an image with test results in picture just like it will appear if you use speedtest.net inside a gui browser, use the **--share** option



```
root@pcfreak:~# speedtest-cli --bytes
Retrieving speedtest.net configuration...
Testing from Vivacom (83.228.93.76)...
Retrieving speedtest.net server list...
Selecting best server based on ping...
Hosted by Nilsat Ltd (Ispirih) [82.25 km]: 21.94 ms
Testing download speed.....
Download: 4.00 Mbyte/s
Testing upload speed.....
Upload: 10.41 Mbyte/s
root@pcfreak:~# speedtest-cli --share
Retrieving speedtest.net configuration...
Testing from Vivacom (83.228.93.76)...
Retrieving speedtest.net server list...
Selecting best server based on ping...
Hosted by Telecoms Ltd. (Varna) [38.88 km]: 11.727 ms
Testing download speed.....
Download: 43.73 Mbit/s
Testing upload speed.....
Upload: 93.72 Mbit/s
Share results: http://www.speedtest.net/result/9876831518.png
root@pcfreak:~# speedtest-cli --share --bytes
Retrieving speedtest.net configuration...
Testing from Vivacom (83.228.93.76)...
Retrieving speedtest.net server list...
Selecting best server based on ping...
Hosted by Telecoms Ltd. (Varna) [38.88 km]: 13.773 ms
Testing download speed.....
Download: 6.14 Mbyte/s
Testing upload speed.....
Upload: 11.71 Mbyte/s
Share results: http://www.speedtest.net/result/9876833742.png
root@pcfreak:~#
```

2. Getting connectivity results of all defined speedtest test City Locations

Speedtest has a list of servers through which a Upload and Download speed is tested, **to run speedtest-cli to test with each and every server and get a better picture on what kind of connectivity to expect from your server towards the closest region capital cities, fetch speedtest-servers.php list and use a small shell loop below is how:**

```
root@pcfreak:~# wget http://www.speedtest.net/speedtest-servers.php
--2020-08-07 16:31:34-- http://www.speedtest.net/speedtest-servers.php
????????????? www.speedtest.net (www.speedtest.net)... 151.101.2.219, 151.101.66.219,
151.101.130.219, ...
Connecting to www.speedtest.net (www.speedtest.net)|151.101.2.219|:80... ???????
??????????.
HTTP ?????????? ??????, ????? ?????????... 301 Moved Permanently
?????: https://www.speedtest.net/speedtest-servers.php [?????]
--2020-08-07 16:31:34-- https://www.speedtest.net/speedtest-servers.php
Connecting to www.speedtest.net (www.speedtest.net)|151.101.2.219|:443... ???????
??????????.
HTTP ?????????? ??????, ????? ?????????... 307 Temporary Redirect
?????: https://c.speedtest.net/speedtest-servers-static.php [?????]
--2020-08-07 16:31:35-- https://c.speedtest.net/speedtest-servers-static.php
????????????? c.speedtest.net (c.speedtest.net)... 151.101.242.219
Connecting to c.speedtest.net (c.speedtest.net)|151.101.242.219|:443... ??????? ??????????.
HTTP ?????????? ??????, ????? ?????????... 200 OK
?????????: 211695 (207K) [text/xml]
Saving to: 'speedtest-servers.php' speedtest-servers.php          100%[=====
=====>] 206,73K
--.-KB/s  in 0,1s
2020-08-07 16:31:35 (1,75 MB/s) - 'speedtest-servers.php' saved [211695/211695]
```

Once file is there with below loop we extract all file defined servers `id=""` 's

```
root@pcfreak:~# for i in $(cat speedtest-servers.php | egrep -Eo 'id="[0-9]{4}' | sed -e
's#id="##' -e 's#"###g'); do speedtest-cli --server $i; done
Retrieving speedtest.net configuration...
Testing from Vivacom (83.228.93.76)...
Retrieving speedtest.net server list...
Retrieving information for the selected server...
Hosted by Telecoms Ltd. (Varna) [38.88 km]: 25.947 ms
Testing download speed.....
Download: 57.71 Mbit/s
```

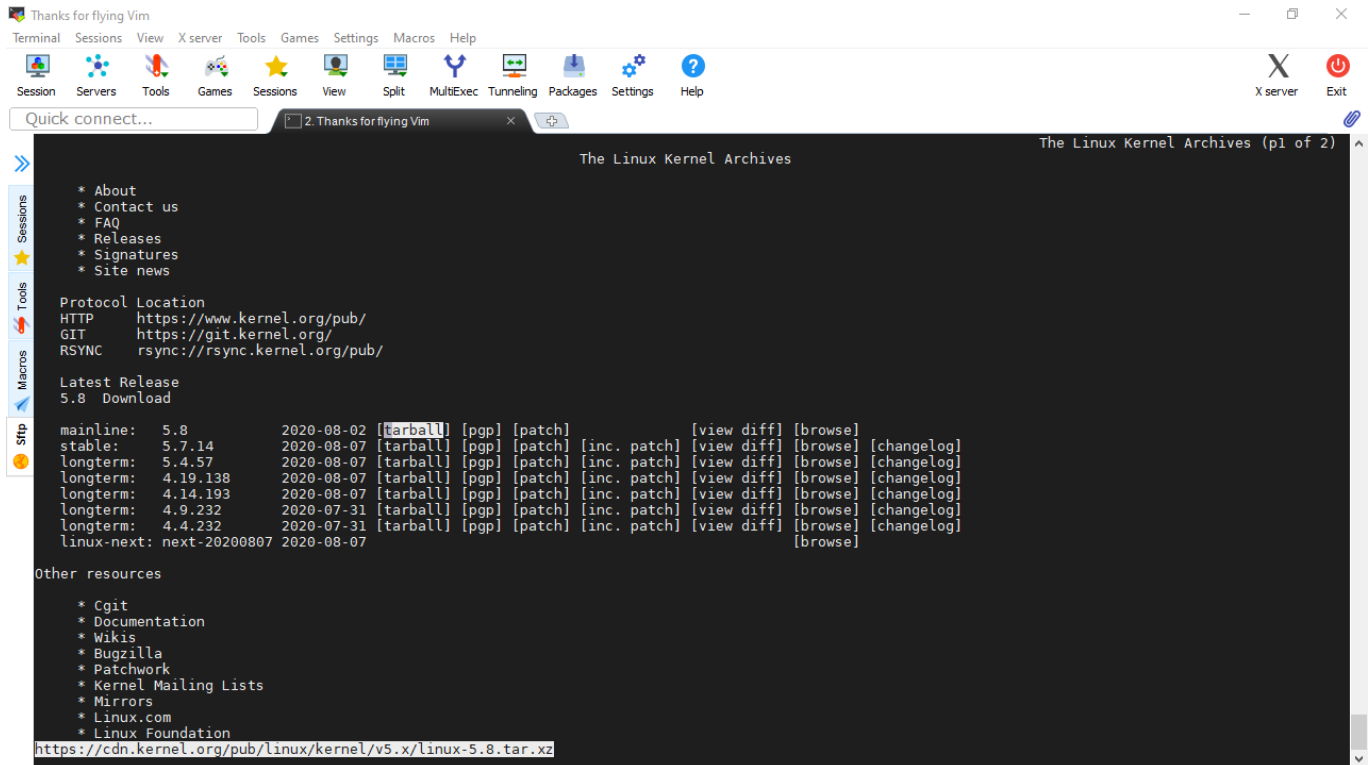
```
Testing upload speed.....  
Upload: 93.85 Mbit/s  
Retrieving speedtest.net configuration...  
Testing from Vivacom (83.228.93.76)...  
Retrieving speedtest.net server list...  
Retrieving information for the selected server...  
Hosted by GMB Computers (Constanta) [94.03 km]: 80.247 ms  
Testing download speed.....  
Download: 35.86 Mbit/s  
Testing upload speed.....  
Upload: 80.15 Mbit/s  
Retrieving speedtest.net configuration...  
Testing from Vivacom (83.228.93.76)...  
....  
...
```

etc.

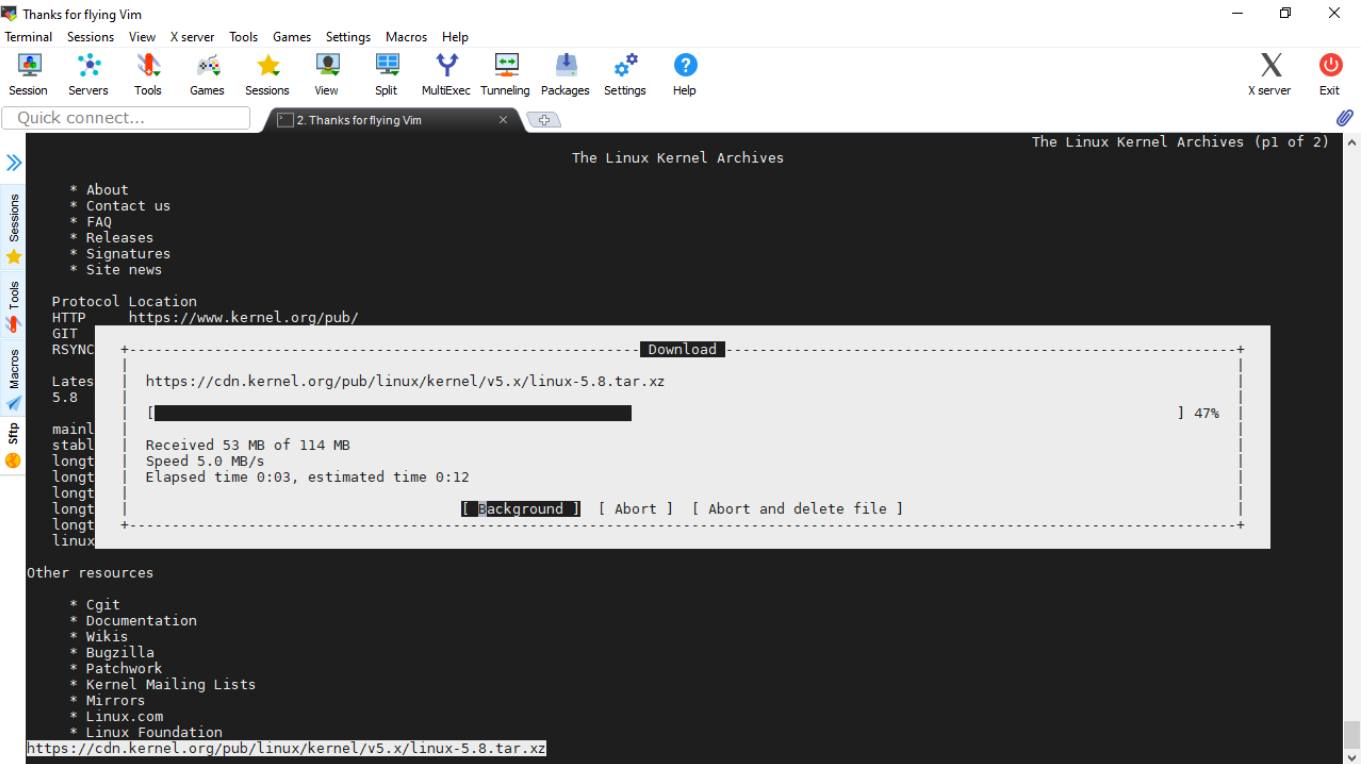
For better readability you might want to add the output to a file or even put it to run periodically on a cron if you have some suspicion that your server Internet dedicated lines dies out to some general locations sometimes.

3. Testing Uplink speed with Download some big file from source location

In the past a classical way to test the bandwidth connectivity of your Internet Service Provider was to fetch some big file, Linux guys should remember it was almost a **standard to roll a download of Linux kernel source .tar file** with some test browser as **elinks / lynx / w3c**.



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or if those are not at hand test connectivity on **remote free shell servers** whatever file downloader as **wget** or **curl** was used.

Analogical method is still possible, for example to use wget to get an idea about bandwidth connectivity, let it roll below 500 mb from speedtest.wdc01.softlayer.com to /dev/null few times:

```
$ wget --output-document=/dev/null  
http://speedtest.wdc01.softlayer.com/downloads/test500.zip
```

```
$ wget --output-document=/dev/null  
http://speedtest.wdc01.softlayer.com/downloads/test500.zip
```

```
$ wget --output-document=/dev/null  
http://speedtest.wdc01.softlayer.com/downloads/test500.zip
```

```
# wget -O /dev/null --progress=dot:mega http://cachefly.cachefly.net/10mb.test ; date  
--2020-08-07 13:56:49-- http://cachefly.cachefly.net/10mb.test  
Resolving cachefly.cachefly.net (cachefly.cachefly.net)... 205.234.175.175  
Connecting to cachefly.cachefly.net (cachefly.cachefly.net)|205.234.175.175|:80... connected.  
HTTP request sent, awaiting response... 200 OK  
Length: 10485760 (10M) [application/octet-stream]  
Saving to: '/dev/null'  
OK ..... 30% 142M 0s  
3072K ..... 60% 179M 0s  
6144K ..... 90% 204M 0s  
9216K ..... 100% 197M=0.06s  
2020-08-07 13:56:50 (173 MB/s) - '/dev/null' saved [10485760/10485760]
```

Fri 07 Aug 2020 01:56:50 PM UTC

To be sure you have a real picture on remote machine Internet speed it is always a good idea to run download of random big files on a certain locations that are well known to have a very stable Internet bandwidth to the Internet backbone routers.

4. Using Simple shell script to test Internet speed

Fetch and use speedtest.sh

```
wget https://raw.githubusercontent.com/blackdotsh/curl-speedtest/master/speedtest.sh && chmod u+x  
speedtest.sh && bash speedtest.sh
```

5. Using iperf to test connectivity between two servers

iperf is another *good tool worthy to mention that can be used to test the speed between client and server.*

To use iperf install it with apt and do on the server machine to which bandwidth will be tested:

```
# iperf -s
```

On the client machine do:

```
# iperf -c 192.168.1.1
```

where 192.168.1.1 is the IP of the server where iperf was spawned to listen.

6. Using Netflix fast to determine Internet connection speed on host

Fast

fast is a service provided by Netflix. Its web interface is located at Fast.com and it has a command-line interface available through npm (npm is a package manager for nodejs) so if you don't have it you will have to install it first with:

```
# apt install --yes npm
```

Note that if you run on Debian this will install you some 249 new nodejs packages which you might not want to have on the system, so this is useful only for machines that has already use of nodejs.

```
$ fast
```

```
82 Mbps ?
```

The command returns your Internet download speed. To get your upload speed, use the -u flag:

```
$ fast -u
```

```
? 80 Mbps ? / 8.2 Mbps ?
```

7. Use speedometer / iftop to measure incoming and outgoing traffic on interface

If you're measuring connectivity on a live production server system, then you might consider that the

measurement output might not be exactly correct especially if you're measuring the Uplink / Downlink on a **Heavy loaded webserver / Mail Server / Samba or DNS server.**

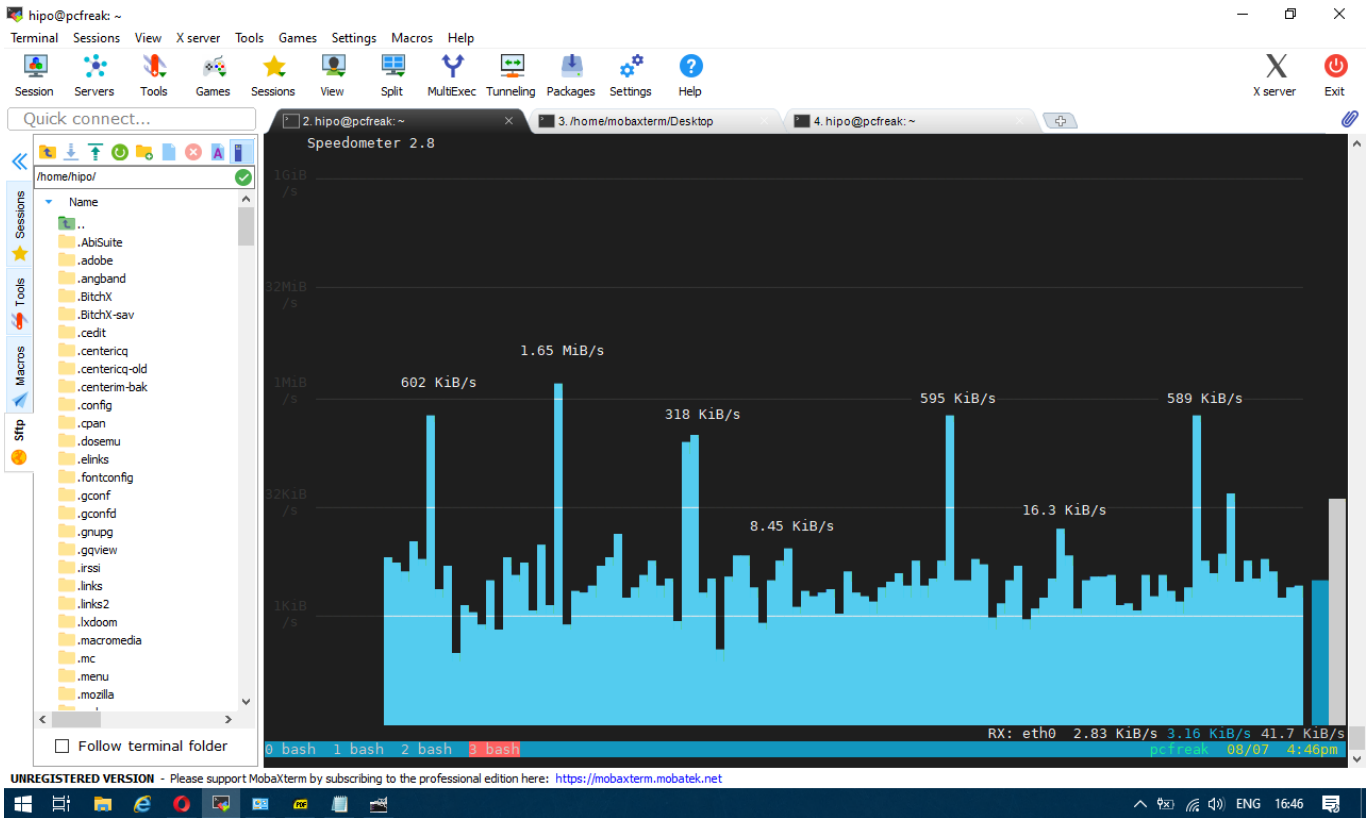
If this is the case a very useful tools to consider to extract the already taken traffic used on your Incoming and Outgoing (TX / RX) Network interfaces are speedometer and iftop, they're present and installable depending on the OS via yum / apt or the respective package manager.

To install on Debian server:

```
# apt install --yes iftop speedometer
```

The most basic use to check the live received traffic in a nice Ncurses like text graphic is with:

```
# speedometer -r
```



To generate real time ASCII art graph on RX / TX traffic do:

```
# speedometer -r eth0 -t eth0
```

Terminal window showing Speedometer 2.8 output:

```
root@pcfreak:/home/hipo# speedometer -r eth0 -t eth0
0 bash 1 bash 2 bash 3 bash 4 bash
RX: eth0 13.0 KiB/s 27.0 KiB/s 45.0 KiB/s
TX: eth0 214 KiB/s 196 KiB/s 190 KiB/s
```

Speedometer 2.8 results (RX: eth0):

Speed (KiB/s)
13.0
27.0
45.0

Speedometer 2.8 results (TX: eth0):

Speed (KiB/s)
214
196
190

iftop -P -i eth0

	19,1Mb	38,1Mb	57,2Mb	76,3Mb	95,4Mb
pc-freak.net		=>	cpc77299-basf12-2-0-cust268.12-3.cable.virginm.net	15,4Mb	4,34Mb 1,09Mb
pc-freak.net		=<		159Kb	100Kb 25,0Kb
pc-freak.net		=>	199.16.157.182	0b	173Kb 43,3Kb
pc-freak.net		=<		0b	4,40Kb 1,10Kb
pc-freak.net		=>	178.132.81.79	0b	2,29Kb 2,78Kb
pc-freak.net		=<		0b	125Kb 268Kb
pc-freak.net		=>	46.229.168.144	89,1Kb	24,9Kb 6,23Kb
pc-freak.net		=<		3,61Kb	2,84Kb 727b
pc-freak.net		=>	199.16.157.181	109Kb	24,5Kb 6,11Kb
pc-freak.net		=<		1,83Kb	1,29Kb 330b
pc-freak.net		=>	192.41.162.30	2,75Kb	1,19Kb 884b
pc-freak.net		=<		21,5Kb	9,76Kb 7,27Kb
pc-freak.net		=>	ns1.bergon.net	4,76Kb	2,19Kb 1,91Kb
pc-freak.net		=<		17,2Kb	8,60Kb 6,22Kb
pc-freak.net		=>	5-255-253-127.spider.yandex.com	720b	6,28Kb 1,57Kb
pc-freak.net		=<		416b	1,36Kb 347b
pc-freak.net		=>	ns4.apnic.net	4,33Kb	1,65Kb 1,21Kb
pc-freak.net		=<		14,4Kb	5,89Kb 4,55Kb
pc-freak.net		=>	a2.info.afiliias-nst.info	0b	2,24Kb 574b
pc-freak.net		=<		0b	5,17Kb 1,29Kb
pc-freak.net		=>	81.91.164.5	1,94Kb	795b 300b
pc-freak.net		=<		15,7Kb	6,23Kb 2,35Kb
pc-freak.net		=>	dns.google	4,84Kb	2,25Kb 1,88Kb
pc-freak.net		=<		8,93Kb	3,76Kb 2,87Kb
pc-freak.net		=>	193.0.9.1	1,84Kb	986b 588b
pc-freak.net		=<		8,33Kb	4,38Kb 2,61Kb
pc-freak.net		=>	d.dns.jp	0b	1,00Kb 257b
pc-freak.net		=<		0b	3,19Kb 816b
pc-freak.net		=>	b.root-servers.net	0b	765b 191b
pc-freak.net		=<		0b	2,38Kb 608b
pc-freak.net		=>	A0.INFO.AFILIAS-NST.INFO	0b	765b 191b
pc-freak.net		=<		0b	2,19Kb 560b
pc-freak.net		=>	104.28.2.145	3,26Kb	1,22Kb 312b
pc-freak.net		=<		3,21Kb	1,29Kb 329b
pc-freak.net		=>	193.0.9.10	376b	376b 190b
pc-freak.net		=<		1,68Kb	1,89Kb 864b
pc-freak.net		=>	a0.dig.afiliias-nst.info	0b	516b 129b
pc-freak.net		=<		0b	1,60Kb 430b
pc-freak.net		=>	h.dns.jp	0b	739b 185b
pc-freak.net		=<		0b	1,45Kb 370b
pc-freak.net		=>	a.arpa.dns.br	1,89Kb	387b 97b
pc-freak.net		=<		6,94Kb	1,39Kb 355b
pc-freak.net		=>	83.228.93.65	1,31Kb	874b 773b
pc-freak.net		=<		1,31Kb	874b 773b
TX:	cum: 10,4MB	peak: 15,7Mb		rates: 15,7Mb	4,61Mb 1,21Mb
RX:	2,33MB	2,80Mb		289Kb	320Kb 390Kb
TOTAL:	12,8MB	16,0Mb		16,0Mb	4,92Mb 1,59Mb