How to Limit Network Bandwidth in Ubuntu

Most of the time while downloading large files from the internet, you don't want to disturb the rest of the network from congestion as most of the network bandwidth will be consumed by the one process.

In this article, we will see how to limit network bandwidth in Ubuntu 18.04 LTS using Wondershaper. Wondershaper is a command line utility that helps to limit the bandwidth usage by saving unnecessary bandwidth consumption. Using Wondershaper, you can set the maximum upload and download rate on a specific network interface.

Limit Bandwidth Using Wondershaper

In this section, we will see how to install Wondershaper using Ubuntu Terminal

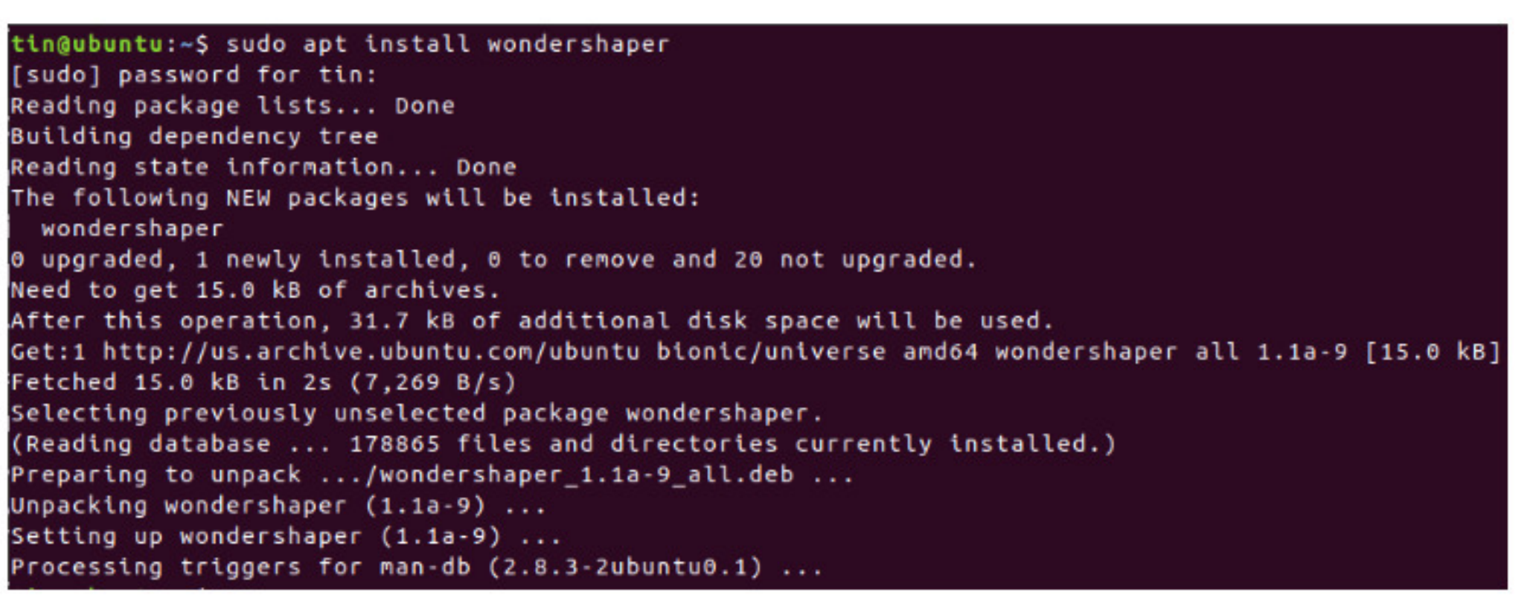
Step 1: Open the Terminal

In order to install the Wondershaper utility, we will use the Ubuntu Terminal. You can open the Terminal using the search bar in Application Launcher. Alternatively, you can use the shortcut by pressing Ctrl+Alt+T key combinations to launch the Terminal.

Step2: Installing Wondershaper

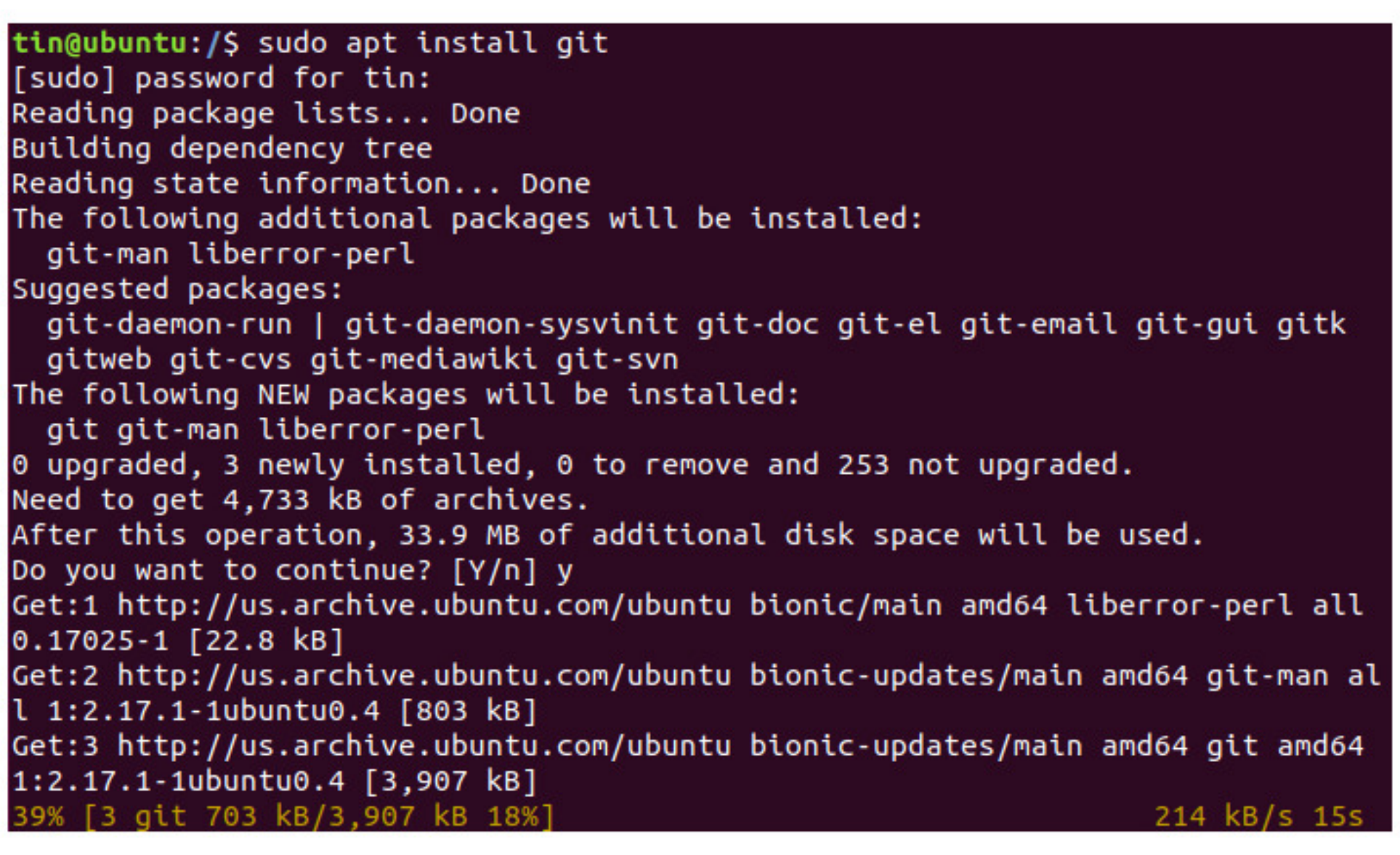
Wondershaper is available in the official Ubuntu repositories. In the Terminal, run the below command as sudo to install Wondershaper

```
$ sudo apt-get install wondershaper
```



```
tin@ubuntu:~$ sudo apt install wondershaper
[sudo] password for tin:
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  wondershaper
0 upgraded, 1 newly installed, 0 to remove and 20 not upgraded.
Need to get 15.0 kB of archives.
After this operation, 31.7 kB of additional disk space will be used.
Get:1 http://us.archive.ubuntu.com/ubuntu bionic/universe amd64 wondershaper all 1.1a-9 [15.0 kB]
Fetched 15.0 kB in 2s (7,269 B/s)
Selecting previously unselected package wondershaper.
(Reading database ... 178865 files and directories currently installed.)
Preparing to unpack .../wondershaper_1.1a-9_all.deb ...
Unpacking wondershaper (1.1a-9) ...
Setting up wondershaper (1.1a-9) ...
Processing triggers for man-db (2.8.3-2ubuntu0.1) ...
```

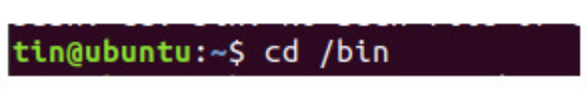
There is an alternative method to install Wondershaper in case if you want to have Wondershaper with the latest updates. I am using this method for describing the procedure.



```
tin@ubuntu:/$ sudo apt install git
[sudo] password for tin:
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  git-man liberror-perl
Suggested packages:
  git-daemon-run | git-daemon-sysvinit git-doc git-el git-email git-gui gitk
  gitweb git-cvs git-mediawiki git-svn
The following NEW packages will be installed:
  git git-man liberror-perl
0 upgraded, 3 newly installed, 0 to remove and 253 not upgraded.
Need to get 4,733 kB of archives.
After this operation, 33.9 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://us.archive.ubuntu.com/ubuntu bionic/main amd64 liberror-perl all
0.17025-1 [22.8 kB]
Get:2 http://us.archive.ubuntu.com/ubuntu bionic-updates/main amd64 git-man al
l 1:2.17.1-1ubuntu0.4 [803 kB]
Get:3 http://us.archive.ubuntu.com/ubuntu bionic-updates/main amd64 git amd64
1:2.17.1-1ubuntu0.4 [3,907 kB]
39% [3 git 703 kB/3,907 kB 18%]                               214 kB/s 15s
```

Navigate to the directory using **cd** command in Terminal.

```
$ cd /bin
```



```
tin@ubuntu:~$ cd /bin
```

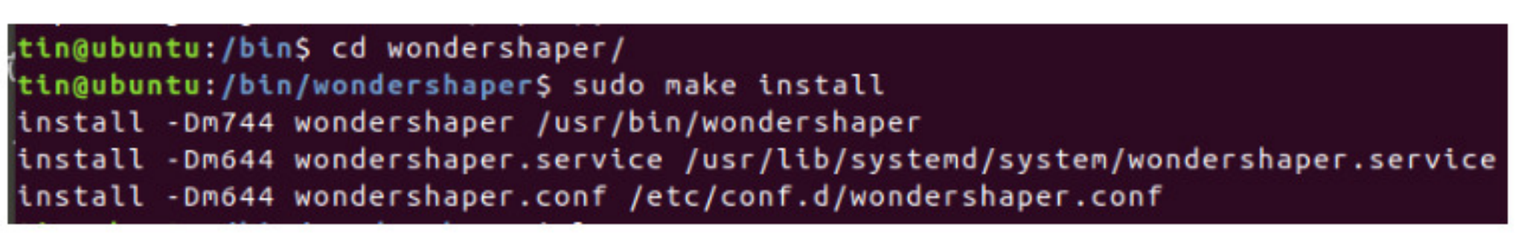
Then add the below command:

```
$ git clone https://github.com/magnific0/wondershaper.git
```

```
tin@ubuntu:/bin$ sudo git clone https://github.com/magnific0/wondershaper.git
Cloning into 'wondershaper'...
remote: Enumerating objects: 7, done.
remote: Counting objects: 100% (7/7), done.
remote: Compressing objects: 100% (6/6), done.
remote: Total 82 (delta 1), reused 7 (delta 1), pack-reused 75
Unpacking objects: 100% (82/82), done.
```

Navigate to Wondershaper directory and install it using the below command as sudo:

```
$ cd wondershaper
sudo make install
```



```
tin@ubuntu:/bin$ cd wondershaper/
tin@ubuntu:/bin/wondershaper$ sudo make install
install -Dm744 wondershaper /usr/bin/wondershaper
install -Dm644 wondershaper.service /usr/lib/systemd/system/wondershaper.service
install -Dm644 wondershaper.conf /etc/conf.d/wondershaper.conf
```

Step 3: Enable and start the service

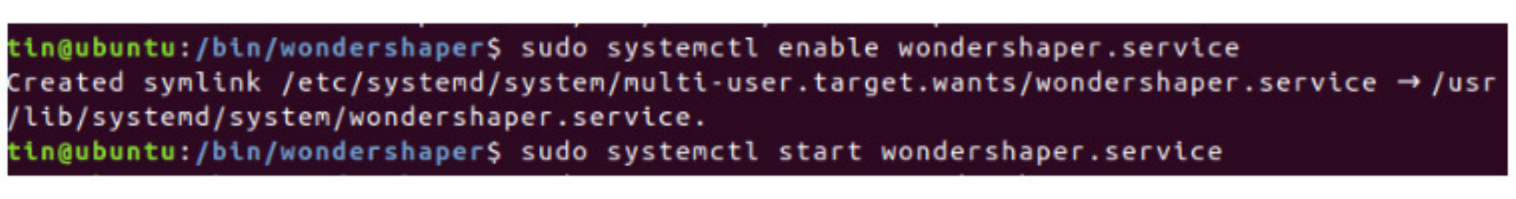
Once you have done with the installation, enable the service to allow it to start every time automatically when the system boots. Note that Wondershaper can be run as service similar to other services in Ubuntu.

After enabling the service, also start the service to use it at the current time.

Run the below commands as sudo in the Terminal to enable and start the Wondershaper service:

```
$ sudo systemctl enable wondershaper.service
```

```
$ sudo systemctl start wondershaper.service
```

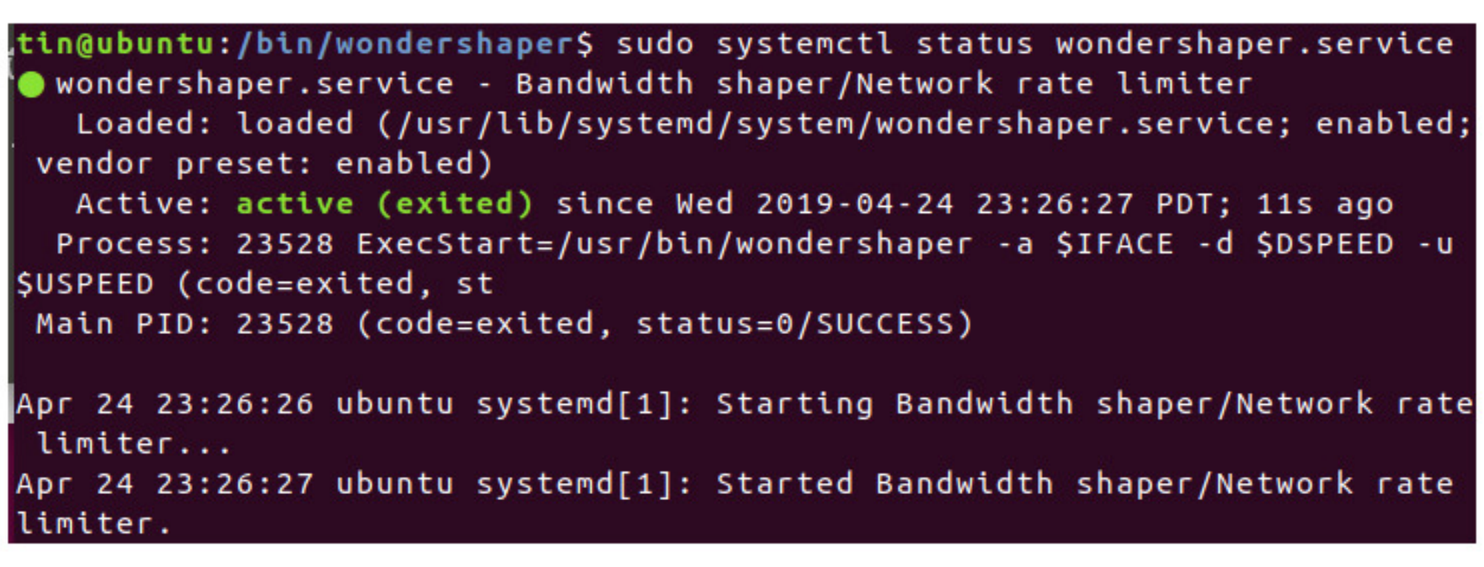


```
tin@ubuntu:/bin/wondershaper$ sudo systemctl enable wondershaper.service
Created symlink /etc/systemd/system/multi-user.target.wants/wondershaper.service → /usr
/lib/systemd/system/wondershaper.service.
tin@ubuntu:/bin/wondershaper$ sudo systemctl start wondershaper.service
```

Step 4: Verify service

You can verify if the Wondershaper service is active by running the below command as sudo:

```
$ sudo systemctl status wondershaper.service
```

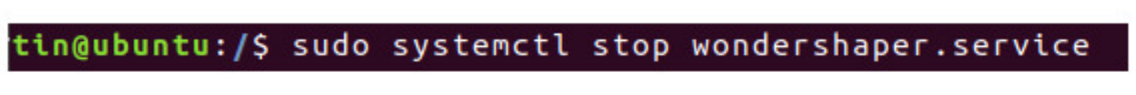


```
tin@ubuntu:/bin/wondershaper$ sudo systemctl status wondershaper.service
● wondershaper.service - Bandwidth shaper/Network rate limiter
   Loaded: loaded (/usr/lib/systemd/system/wondershaper.service; enabled;
 vendor preset: enabled)
   Active: active (exited) since Wed 2019-04-24 23:26:27 PDT; 11s ago
  Process: 23528 ExecStart=/usr/bin/wondershaper -a $IFACE -d $DSPEED -u
$USPEED (code=exited, st
 Main PID: 23528 (code=exited, status=0/SUCCESS)

Apr 24 23:26:26 ubuntu systemd[1]: Starting Bandwidth shaper/Network rate
 limiter...
Apr 24 23:26:27 ubuntu systemd[1]: Started Bandwidth shaper/Network rate
limiter.
```

In case you want to stop the service, run the below command:

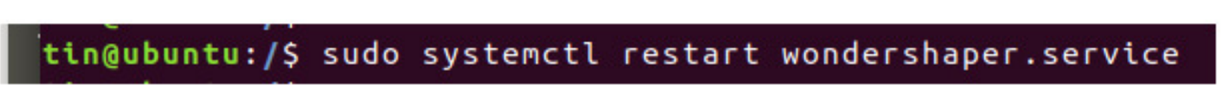
```
$ sudo systemctl stop wondershaper.service
```



```
tin@ubuntu:/$ sudo systemctl stop wondershaper.service
```

In case there is a problem with service and you want to restart it, run the below command:

```
$ sudo systemctl restart wondershaper.service
```



```
tin@ubuntu:/$ sudo systemctl restart wondershaper.service
```

Step 5: Use Wondershaper

Find the name of the interface on which you want to limit the bandwidth.

You can find the interface name using one of the following commands:

```
$ ifconfig

$ ip link show

$ ip addr
```

To limit the bandwidth for a specific interface, run the command in following syntax:

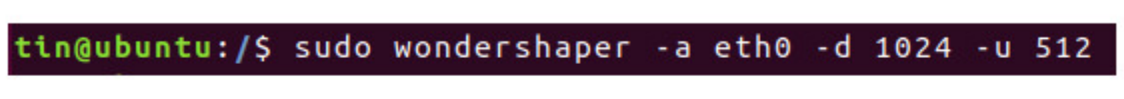
$ sudo wondershaper -a <interface> -d <rate> -u <rate>

-a: defines interface name

-d: defines download rate in kbps

-u: defines upload rate in kbps

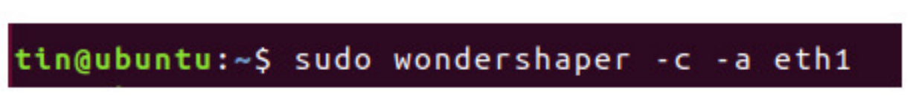
For instance, I want to limit bandwidth for interface eth0 to be 1024kbps for download and 512 kbps for upload, I will run this command:



```
tin@ubuntu:/$ sudo wondershaper -a eth0 -d 1024 -u 512
```

To clear or remove the bandwidth limits from an interface, run the command s sudo in below syntax:

$ sudo wondershaper -c –a <interface>



```
tin@ubuntu:~$ sudo wondershaper -c -a eth1
```

If you have installed Wondershaper using GitHub repository, then there is a configuration file **wonderhsaper.conf** at **/etc/conf.d**. You can edit using any text editor.

I am using Nano editor to edit that configuration file. Run the below command in the Terminal window:

```
$ sudo nano /etc/conf.d/wondershaper.conf
```

```
tin@ubuntu:/$ sudo nano /etc/conf.d/wondershaper.conf
```

Here you can set the interface and define the upload and download bandwidth limit. When done with configurations, save the file and exit.

Make sure to restart the Wondershaper service after making changes in the configuration file.

```
[wondershaper]
# Adapter
#
IFACE="eth0"

# Download rate in Kbps
#
DSPEED="2048"

# Upload rate in Kbps
#
USPEED="512"

^G Get Help ^O Write Out^W Where Is ^K Cut Text ^J Justify
^X Exit     ^R Read File^\ Replace  ^U Uncut Tex^T To Spell
```

So that was the simplest way using which you can limit network bandwidth and ensure congestion free network traffic by preventing one single user to consume all the bandwidth.

Karim Buzdar April 30, 2019 Linux, Shell, Ubuntu

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About the Author: Karim Buzdar holds a degree in telecommunication engineering and holds several sysadmin certifications. As an IT engineer and technical author, he writes for various web sites. He blogs at LinuxWays.

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