

Guide to network operation for Linux users: 11 commands to know

Linux supports commands to download files, diagnose network problems, manage network interfaces or view network statistics on the terminal. Here are some common Linux commands to work with, please consult.

TipsMake.com - Terminal on Linux is the same as cmd on Windows, it is a command line environment that allows users to interact with the system through commands. But the command on the terminal is more and it is not the same as the command on Windows cmd. So, if you just start using this operating system, you will have to learn terminal commands on Linux. [New Linux should use which distro?]

Linux supports commands for users to download files, diagnose network problems, manage network interfaces or view network statistics on the command line interface (command line). Here are some common Linux commands to work with, please consult.

```

howtogeek@ubuntu: ~
My traceroute [v0.80]
ubuntu (0.0.0.0) Tue Mar 13 22:22:11 2012
Keys: Help Display mode Restart statistics Order of fields
quit
Host Loss% Snt Last Avg Best Wrst StDev
1. 192.168.207.2 0.0% 7 3.4 0.9 0.2 3.4 1.2
2. 192.168.1.254 0.0% 7 2.1 11.4 1.4 66.1 24.2
3. 10.246.112.1 0.0% 7 12.2 17.9 12.1 38.4 9.8
4. 96.1.253.134 0.0% 7 14.8 14.5 12.9 16.4 1.3
5. 173.182.214.134 0.0% 7 17.2 15.9 12.7 26.4 4.8
6. 154.11.22.116 28.6% 7 14.4 24.5 12.6 67.0 23.8
    
```

curl and wget

Use the *curl* or *wget* command to download a file from the internet without a terminal. With the *curl* command, type *curl-O* the path to the file. Users can use the *wget* command without any additional options. The file will appear at the link.

Curl-O website.com/file
Wget website.com/file

```
howtogeek@ubuntu: ~  
howtogeek@ubuntu:~$ curl -O google.com/logos/2012/yoshizawa12-hp.jp  
g  
 % Total    % Received % Xferd  Average Speed   Time    Time     T  
ime Current          Dload  Upload  Total  Spent  L  
eft Speed  
  0     0     0     0     0     0     0     0  --:--:--  --:--:--  --:  
100  248  100  248     0     0  1785     0  --:--:--  --:--:--  --:  
--:--  7515  
howtogeek@ubuntu:~$
```

ping

The `ping` command sends *ECHO_REQUEST* packets to the specified address. The command is to check if the computer can connect to the Internet or a specific IP address. However, there are many systems that are configured to not respond to *ping* commands.

Unlike the *ping* command on Windows, the *ping* command on Linux will maintain sending packets until you finish it. It is possible to specify the maximum number of packets sent by typing the `-c` option.

`ping -c 4 google.com`

```
howtogeek@ubuntu: ~  
howtogeek@ubuntu:~$ ping -c 4 google.com  
PING google.com (173.194.33.39) 56(84) bytes of data.  
64 bytes from sea09s02-in-f7.1e100.net (173.194.33.39): icmp_req=1  
ttl=128 time=16.0 ms  
64 bytes from sea09s02-in-f7.1e100.net (173.194.33.39): icmp_req=2  
ttl=128 time=18.3 ms  
64 bytes from sea09s02-in-f7.1e100.net (173.194.33.39): icmp_req=3  
ttl=128 time=24.3 ms  
64 bytes from sea09s02-in-f7.1e100.net (173.194.33.39): icmp_req=4  
ttl=128 time=16.0 ms  
  
--- google.com ping statistics ---  
4 packets transmitted, 4 received, 0% packet loss, time 3008ms  
rtt min/avg/max/mdev = 16.045/18.709/24.315/3.375 ms  
howtogeek@ubuntu:~$
```

Tracepath and traceroute

The *tracepath* command is similar to *traceroute*, but it does not require administrative rights. It is also installed by default on *Ubuntu* and *traceroute* is not. The *tracepath* command traces the route on the network to a specified destination and reports each vertical node (*hop*) along the way. If network problems occur, the *tracepath* command can indicate the location of the network error.

`Tracepath example.com`

```
howtogeek@ubuntu: ~
howtogeek@ubuntu:~$ tracepath howtogeek.com
 1:  ubuntu.local                                0.161ms
pmtu 1500
 1:  192.168.207.2                               0.187ms
 1:  █
```

mtr

The *mtr* command is a combination of *ping* and *tracepath* in a single statement. *mtr* will send packets continuously and display ping times for each network node. The command also helps detect some network problems. In this case, it can be seen that the 6th button lost more than 20% of the total number of packages.

mtr howtogeek.com

```
howtogeek@ubuntu: ~
My traceroute [v0.80]
ubuntu (0.0.0.0) Tue Mar 13 21:49:07 2012
Keys: Help Display mode Restart statistics Order of fields
quit
Packets Pings
Host Loss% Snt Last Avg Best Wrst StDev
1. 192.168.207.2 0.0% 23 0.5 0.6 0.1 2.0 0.7
2. 192.168.1.254 0.0% 23 1.4 3.1 1.4 7.8 1.9
3. 10.246.112.1 0.0% 23 23.5 14.4 11.7 23.5 3.7
4. 96.1.253.134 0.0% 23 15.0 14.7 11.9 30.3 4.1
5. 173.182.214.134 0.0% 22 15.8 16.6 12.4 34.3 5.0
6. 154.11.22.116 22.7% 22 17.7 18.9 12.9 42.8 7.9
7. 204.225.243.18 0.0% 22 15.5 19.3 15.4 56.2 8.4
8. sea-brdr-02.inet.qw 0.0% 22 16.3 28.6 15.6 132.6 26.8
9. sea-edge-12.inet.qw 0.0% 22 17.5 22.2 16.0 97.2 17.1
10. ae11.bbr02.wb01.sea 0.0% 22 16.4 24.9 16.2 65.1 14.0
11. ae7.bbr01.wb01.sea0 0.0% 22 91.5 87.8 85.7 92.8 2.3
```

Press *q* or *Ctrl-C* to exit when you're done.

host

The *host* command will perform a DNS search. Enter the domain name when you want to see the attached *IP address* and vice versa, enter the IP address when you want to see the associated domain name.

Host howtogeek.com

Host 208.43.115.82

```
howtogeek@ubuntu: ~  
howtogeek@ubuntu:~$ host howtogeek.com  
howtogeek.com has address 208.43.115.82  
howtogeek.com mail is handled by 30 ASPMX2.GOOGLEMAIL.com.  
howtogeek.com mail is handled by 30 ASPMX3.GOOGLEMAIL.com.  
howtogeek.com mail is handled by 30 ASPMX4.GOOGLEMAIL.com.  
howtogeek.com mail is handled by 30 ASPMX5.GOOGLEMAIL.com.  
howtogeek.com mail is handled by 10 ASPMX.L.GOOGLE.com.  
howtogeek.com mail is handled by 20 ALT1.ASPMX.L.GOOGLE.com.  
howtogeek.com mail is handled by 20 ALT2.ASPMX.L.GOOGLE.com.  
howtogeek@ubuntu:~$ host 208.43.115.82  
82.115.43.208.in-addr.arpa domain name pointer howtogeek.com.  
howtogeek@ubuntu:~$
```

whois

The *whois* command will issue records on the whois server (*whois record*) of the website, so you can view information about the person or organization registered and own that website.

whois example.com

```
howtogeek@ubuntu: ~  
Domain names in the .com and .net domains can now be registered  
with many different competing registrars. Go to http://www.internic.net  
for detailed information.  
  
Domain Name: HOWTOGEEK.COM  
Registrar: NEW DREAM NETWORK, LLC  
Whois Server: whois.dreamhost.com  
Referral URL: http://www.dreamhost.com  
Name Server: NS1.SOFTLAYER.COM  
Name Server: NS2.SOFTLAYER.COM  
Status: clientTransferProhibited  
Updated Date: 24-oct-2010  
Creation Date: 11-sep-2006  
Expiration Date: 11-sep-2016
```

ifplugstatus

The *ifplugstatus* command helps check if the cable is plugged into the network interface. This command is not installed by default on *Ubuntu*. Use the following command to install it

sudo apt-get install ifplugd

Run the following commands to see the status of all interfaces or just view the status of a specific interface.

ifplugstatus

eth0 ifplugstatus

```
howtogeek@ubuntu: ~  
howtogeek@ubuntu:~$ ifplugstatus  
lo: link beat detected  
eth0: unplugged  
howtogeek@ubuntu:~$
```

' *detected* ' link link means the cable has been plugged in and ' *unplugged* ' means the cable is not plugged in.

ifconfig

The *ifconfig* statement has many options for configuring, adjusting and detecting errors on system network interfaces. This is also a way to quickly see *IP addresses* and other network interface information. Type *ifconfig* to see the status of the currently active network interfaces including their names. You can also specify an interface name to view information on that interface only.

ifconfig

ifconfig eth0

```
howtogeek@ubuntu: ~  
howtogeek@ubuntu:~$ ifconfig  
eth0      Link encap:Ethernet  HWaddr 00:0c:29:8d:27:eb  
          inet addr:192.168.207.136  Bcast:192.168.207.255  Mask:255.255.255.0  
          inet6 addr: fe80::20c:29ff:fe8d:27eb/64 Scope:Link  
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1  
          RX packets:422 errors:0 dropped:0 overruns:0 frame:0  
          TX packets:153 errors:0 dropped:0 overruns:0 carrier:0  
          collisions:0 txqueuelen:1000  
          RX bytes:55943 (55.9 KB)  TX bytes:23535 (23.5 KB)  
          Interrupt:19 Base address:0x2024  
  
lo        Link encap:Local Loopback  
          inet addr:127.0.0.1  Mask:255.0.0.0  
          inet6 addr: ::1/128 Scope:Host  
          UP LOOPBACK RUNNING  MTU:16436  Metric:1
```

ifdown and ifup

Ifdown and *ifup* statements are like *ifconfig up* or *ifconfig down* . The two statements execute on or off the specified interface. This requires administrative privileges so you must use the *sudo* keyword on Ubuntu.

sudo ifdown eth0

sudo ifup eth0

```
howtogeek@ubuntu: ~  
howtogeek@ubuntu:~$ sudo ifdown eth0  
[sudo] password for howtogeek:  
ifdown: interface eth0 not configured  
howtogeek@ubuntu:~$ sudo ifup eth0  
Ignoring unknown interface eth0=eth0.  
howtogeek@ubuntu:~$
```

The Linux screen will report an error when these commands are entered. It often uses NetworkManager to manage network interfaces. However, these statements will still work on servers without using NetworkManager.

If you really need to configure NetworkManager from the command line interface, use the *nmcli* command .

dhclient

The *dhclient* command helps refresh the IP address on the machine by freeing the old IP address and receiving a new address from the DHCP server. This job requires administrative rights, so use the *sudo* keyword on Ubuntu. Run *dhclient* to get a new IP address or use the *-r* option to release the current IP address.

sudo dhclient -r

sudo dhclient

```
howtogeek@ubuntu: ~  
howtogeek@ubuntu:~$ sudo dhclient -r  
[sudo] password for howtogeek:  
howtogeek@ubuntu:~$ sudo dhclient  
howtogeek@ubuntu:~$
```

netstat

The *netstat* statement provides different statistics for the interface, including open sockets and routing tables.

```
howtogeek@ubuntu: ~
unix 3 [ ] STREAM CONNECTED 6955
unix 2 [ ] DGRAM 6952
unix 3 [ ] STREAM CONNECTED 6889 /var/run
/dbus/system_bus_socket
unix 3 [ ] STREAM CONNECTED 6888
unix 3 [ ] STREAM CONNECTED 6887
unix 3 [ ] STREAM CONNECTED 6886
unix 3 [ ] DGRAM 6672
unix 3 [ ] DGRAM 6671
unix 3 [ ] STREAM CONNECTED 6598 @/com/ub
untu/upstart
unix 3 [ ] STREAM CONNECTED 6593
unix 3 [ ] STREAM CONNECTED 6538 @/com/ub
untu/upstart
unix 3 [ ] STREAM CONNECTED 6537
howtogeek@ubuntu:~$
```

Use the `netstat -p` statement to see programs that come with open sockets.

```
howtogeek@ubuntu: ~
howtogeek@ubuntu:~$ netstat -p
(Not all processes could be identified, non-owned process info
will not be shown, you would have to be root to see it all.)
Active Internet connections (w/o servers)
Proto Recv-Q Send-Q Local Address Foreign Address
State PID/Program name
tcp 0 0 ubuntu.local:51820 pz-in-f104.1e100.ne:www
ESTABLISHED 3855/firefox
tcp 0 0 ubuntu.local:43581 204.245.34.202:www
ESTABLISHED 3855/firefox

```

See detailed statistics for all ports with the `netstat -s` statement.

```
howtogeek@ubuntu: ~
howtogeek@ubuntu:~$ netstat -s
Ip:
 10602 total packets received
 331 with invalid addresses
 0 forwarded
 0 incoming packets discarded
10247 incoming packets delivered
8969 requests sent out
 4 outgoing packets dropped
 28 dropped because of missing route
 4 fragments failed
Icmp:
 2848 ICMP messages received
 2647 input ICMP message failed.
ICMP input histogram:
 destination unreachable: 6
```

The above are common commands to manipulate the network that Linux supports users. Through these commands, users can easily check for incidents or network-related information.

You can refer to other basic Linux commands here: [Basic Linux commands everyone needs to know](#)

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