

Table Of Contents

Table Of Contents 1

Adding IPv6 To Ubuntu Systems 2

Test IPv6 Configuration 2

 Further Readings: 3

[Home](#) > [Faq](#) > [Iptables](#)

Ubuntu Linux Add Static IPv6 Address Network Configuration

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How do I configure static IPv6 networking under Ubuntu Linux server operating systems?

You need to simply edit /etc/network/interfaces file and add the IPv6 networking configuration. Here is our sample setup:

- Ipv6 Address IP: 2607:f0d0:2001:000a:0000:0000:0000:0010/64
- Ipv6 Gateway IP: 2607:f0d0:2001:000a:0000:0000:0000:0001
- Interface name: eth0
- IPv6 Type: Static



[1]



WARNING! These examples are not about an IPv6 tunnel broker. This faq requires static IPv6 address

which can be obtained from your network admin or ISP. For desktop usage and testing purpose see how to [setup a tunnel broker](#) ^[2] (a network tunnel over IPv4) which can encapsulated connectivity over existing IPv4 infrastructure.

Adding IPv6 To Ubuntu Systems

Open /etc/network/interfaces file, enter (first login as root):



[3]

```
$ sudo -s
```

Make a backup and edit the file:

```
# cp /etc/network/interfaces /etc/network/interfaces.backup  
# vi /etc/network/interfaces
```

Append configuration as follows:

```
### Start IPV6 static configuration  
iface eth0 inet6 static  
pre-up modprobe ipv6  
address 2607:f0d0:2001:000a:0000:0000:0000:0010  
netmask 64  
gateway 2607:f0d0:2001:000a:0000:0000:0000:0001  
### END IPV6 configuration
```

Save and close the file. Restart networking:

```
# /etc/init.d/networking restart
```

Test IPv6 Configuration

See your IPv6 address, enter:

```
# ifconfig eth0
```

```
# ip -6 address show eth0
```

Display kernel IPv6 routing table:

```
# netstat -nr -6
```

[Ping to ipv6](#) ^[4] enabled site such as cyberciti.biz (or ipv6.google.com):

```
# ping6 cyberciti.biz
```

Sample Output

```
PING cyberciti.biz (www.cyperciti.biz) 56 data bytes
64 bytes from www.cyperciti.biz: icmp_seq=1 ttl=60 time=65.3 ms
64 bytes from www.cyperciti.biz: icmp_seq=2 ttl=60 time=64.2 ms
64 bytes from www.cyperciti.biz: icmp_seq=3 ttl=60 time=63.9 ms
64 bytes from www.cyperciti.biz: icmp_seq=4 ttl=60 time=63.9 ms
64 bytes from www.cyperciti.biz: icmp_seq=5 ttl=60 time=64.1 ms
64 bytes from www.cyperciti.biz: icmp_seq=6 ttl=60 time=64.0 ms
64 bytes from www.cyperciti.biz: icmp_seq=7 ttl=60 time=64.0 ms
```

You can also run a traceroute:

```
# traceroute6 cyberciti.biz
```

Sample Output:

```
traceroute to cyberciti.biz (2607:f0d0:1002:11::4), 30 hops max, 40 byte packets
 1  ipv6gw.rose.simplyguide.org (2607:f0d0:2001:a::1)  0.739 ms  0.847 ms  0.962 ms
 2  2607:f0d0:2000:0001:0000:0000:0000:0005-static.v6reverse.softlayer.com (2607:f0d0:2000:
 3  2607:f0d0:1000:0001:0000:0000:0000:0105-static.v6reverse.softlayer.com (2607:f0d0:1000:
 4  2607:f0d0:1000:0001:0000:0000:0000:0056-static.v6reverse.softlayer.com (2607:f0d0:1000:
 5  www.cyperciti.biz (2607:f0d0:1002:11::4)  67.486 ms  67.604 ms  67.719 ms
```

Further Readings:

1. See sample [IPv6 Firewall Script](#) ^[5] for Linux iptables.

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URLs in this post:

[1] Image: <http://www.cyperciti.biz/faq/category/ubuntu-linux/>

[2] setup a tunnel broker: <http://www.cyperciti.biz/faq/tspc-debian-ubuntu-linux-configure-ipv6-tunnel/>

[3] Image: <http://www.cyperciti.biz/faq/category/networking/>

[4] Ping to ipv6: <http://www.cyperciti.biz/faq/howto-test-ipv6-network-with-ping6-command/>

[5] IPv6 Firewall Script: <http://www.cyperciti.biz/faq/ip6tables-ipv6-firewall-for-linux/>