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# Setting Up An IPv6 Tunnel

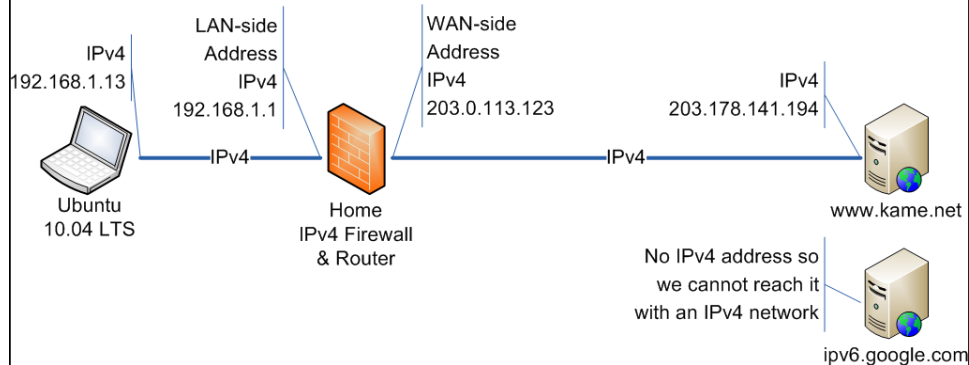
Using Hurricane Electric's tunnel broker service  
on a single Ubuntu computer

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for the  
Columbia Area Linux User Group  
June 8, 2011 meeting

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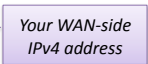
## Why Use A Tunnel?

- To reach IPv6 hosts on the other side of an ISP's IPv4 network



## Step 1: Hurricane Electric Tunnel Broker Account

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- Sign up with Hurricane Electric, [tunnelbroker.net](http://tunnelbroker.net), to get an IPv6 tunnel using their tunnel broker service
- This will give you:
  - Server IPv4 address – 216.66.22.2
  - Server IPv6 address – 2001:db8:7:aa7::1
  - *Client IPv4 address* – 203.0.113.123 
  - Client IPv6 address – 2001:db8:7:aa7::2
  - Routed IPv6 prefixes – 2001:db8:8:aa7::/64

## Step 2: edit /etc/network/interfaces

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*Edit interfaces. At the command line:*

**\$ sudo nano /etc/network/interfaces**

*And add...*

```
auto he-ipv6iface he-ipv6 inet6 v4tunnel
  endpoint 216.66.22.2
  address 2001:db8:7:aa7::2
  netmask 64
  up ip -6 route add default dev he-ipv6
  down ip -6 route del default dev he-ipv6
```




## Step 3: edit Network Manager settings

The screenshot shows the Network Manager interface with three windows open. The 'Editing Auto eth1' window has 'Method' set to 'Manual'. The 'Addresses' table contains one entry: 2001:db8:8:aa7::1 with a prefix of 64. The 'Routes...' button is highlighted. The 'Editing IPv6 routes for Auto eth1' window shows a table with one entry: 2001:db8:7:aa7::1 with a prefix of 64 and a gateway of 2001:db8:7:aa7::2 with a metric of 128. The 'Add' button is highlighted. The 'Network Connections' window shows 'Auto eth1' selected, with 'Edit...' and 'Delete...' buttons visible. Blue callouts indicate the following steps: 1: right click & edit connections (pointing to the 'Auto eth1' entry in the Network Connections window), 2: edit (pointing to the 'Edit...' button), 3: manual (pointing to the 'Method' dropdown in the 'Editing Auto eth1' window), 4: add (pointing to the 'Add' button in the 'Addresses' table), 5: routes (pointing to the 'Routes...' button), and 6: add (pointing to the 'Add' button in the 'Editing IPv6 routes' window). A purple box labeled 'Routable address' points to the 'Address' field in the 'Addresses' table. Another purple box labeled 'Server IPv6 address' points to the 'Address' field in the 'Editing IPv6 routes' window. A third purple box labeled 'Client IPv6 address' points to the 'Gateway' field in the 'Editing IPv6 routes' window.

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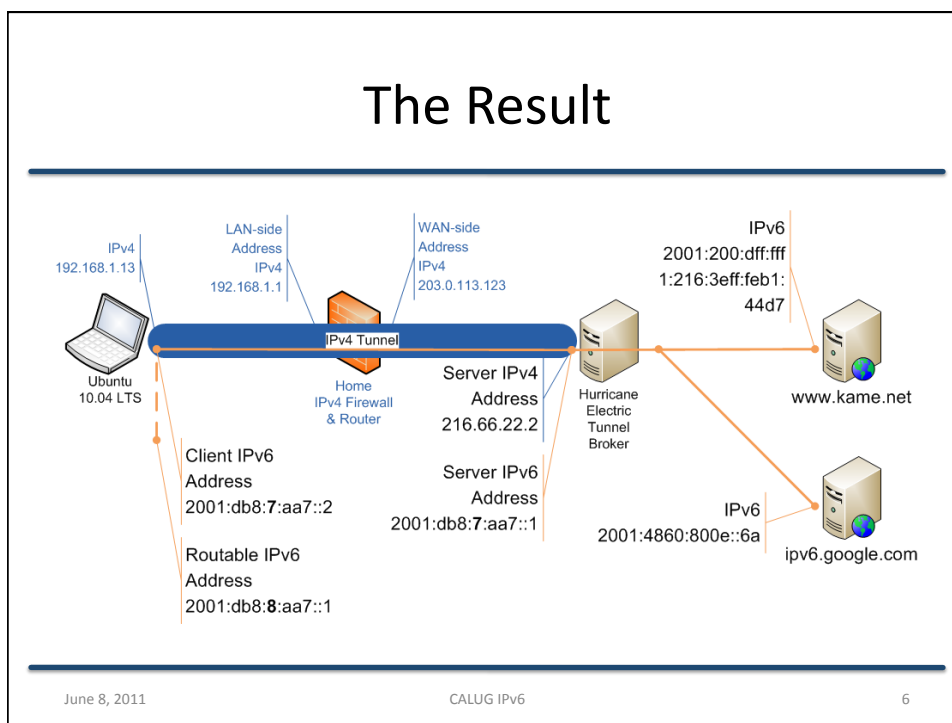
## Step 4: Bring Up The Interface

*At the command line:*

```
$ sudo ifup he-ipv6
```

- **But caution – you now need to set up an IPv6 firewall on your computer**
  - *ufw* can be used
- But we'll leave that as an exercise for the reader!

## The Result



## References

- Ubuntu wiki on IPv6
  - <https://wiki.ubuntu.com/IPv6>
- Setting up a IPv6 Gateway on Hurricane Electric using Ubuntu 10.04.2
  - <http://www.dickson.me.uk/2011/03/08/setting-up-a-ipv6-gateway-on-hurricane-electric-using-ubuntu-lucid-lynx-10-04-2/>
- Hurricane Electric
  - <http://he.net>