LAB :: IPv6 on Linux

- In this LAB we will see some basic Linux commands related to ipv6.
- OS Ubuntu 14.04

Login to your server

- Windows: use puTTY
- Mac and Linux: use your terminal
- Username `apnic` and password `training`
- Login to your server using the above username and password.

Ipv6 support

First, you have to check whether your server is ipv6 supported or not. To check it, type the following command. **(The ipv6 address may differ from your address. Use your address instead of the below one.)**

```
cat /proc/net/if_inet6

00000000000000000000000000000001 01 80 10 80        lo

fe800000000000000a0027fffeec4f60 02 40 20 80        eth0
```

If you see the output like this, then your server support ipv6. By default ipv6 is enabled in today's most of the devices.

Check ipv6 address

By default, ipv6 address is assigned to your server interface which is a Link local address. Type the below command to check it. **(The ipv6 address may differ from your address. Use your address instead of the below one.)**

```
ifconfig eth0 | grep "inet6"

          inet6 addr: fe80::a00:27ff:feec:4f60/64 Scope:Link
```

ping ipv6 address

To ping an ipv6 address, type the below command. **(The ipv6 address may differ from your address. Use your address instead of the below one.)**

```
ping6 -c4 fe80::a00:27ff:feec:4f60%eth0
```

`-c4` parameter is optional you can escape it. In that case you have to press `ctrl+c` to stop the ping reply.

Assign ipv6 address

Type the below command to assign the ipv6 address in your interface eth0 temporary. Note the **X** inside the address. Replace this address with your group number. If you are in group one place 1, if you are in group 2 place 2 here.

```
sudo ifconfig eth0 inet6 add 2001:db8:1001::X/64
```

[replace X with your group no]

Test your work with the help of the `ping6` command shown above.

To remove the address, type the following command:

```
sudo ifconfig eth0 inet6 del 2001:db8:1001::X/64
```

For permanent assignment follow the below procedure:

```
sudo vim /etc/network/interfaces
```

Open the file with `vim` editor and append the following lines. Replace the **X** with your group number.

```
iface eth0 inet6 static

        address 2001:db8:1001::X

        netmask 64
```

```
        gateway 2001:db8:1001::254
```

Restart the network service using the following command or reboot the server.

```
sudo ip link set eth0 down && sudo ip link set eth0 up
```

Test your work with the help of the `ping6` command shown above.

Enable forwarding

Forwarding can also be enabled in ipv6 like ipv4. The file is same `sysctl.conf` but the line is different. Open the `sysctl.conf` file and search for the line `net.ipv6.conf.all.forwarding=1`

Uncomment the line by deleting the # sign in front of the line.

Save and exit from `sysctl.conf` file.

Type `sudo sysctl -p`

The output should be `net.ipv6.conf.all.forwarding=1.` Which means forwarding is enabled.

To disable the forwarding just comment out the `net.ipv6.conf.all.forwarding=1` line in `sysctl.conf` file.

Show ipv6 routing table

Like ipv4 there is also a local routing table exist for ipv6 in your server. Type the following command to show the local ipv6 routing table.

```
route -A inet6
```

```
******END of LAB******
```