Setting up Multiple Local Networks on a Host with a Usb Network Dongle

Initial set-up process

Make sure the following are in place before continuing.

1. The AP/Router is completely set up for the host to obtain a local network.
2. The Ethernet USB Dongle is connected to the AP/Router and plugged into the Host.
3. Proceed to SSH into the host with root access

Grabbing info

Once your in the host as yourself type in:

```
ifconfig
```

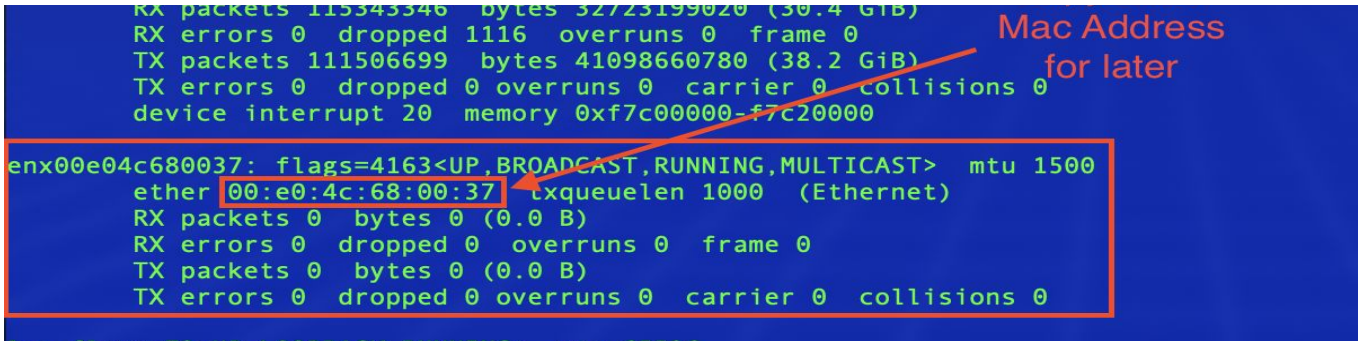
You should get something that looks like this:

```
Bill@HOSTNAME:~$ ifconfig
eno1: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet xxx.xxx.xxx.xxx  netmask xxx.xxx.xxx.xxx  broadcast xxx.xxx.xxx.xxx
        ether xx:xx:xx:xx:xx:xx  txqueuelen 1000  (Ethernet)
        RX packets 115343346  bytes 32723199020 (30.4 GiB)
        RX errors 0  dropped 1116  overruns 0  frame 0
        TX packets 111506699  bytes 41098660780 (38.2 GiB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
        device interrupt 20  memory 0xf7c00000-f7c20000

enx00e04c680037: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        ether 00:e0:4c:68:00:37  txqueuelen 1000  (Ethernet)
        RX packets 0  bytes 0 (0.0 B)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 0  bytes 0 (0.0 B)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING>  mtu 65536
        inet 127.0.0.1  netmask 255.0.0.0
        loop  txqueuelen 1000  (Local Loopback)
        RX packets 228195054  bytes 61193236088 (56.9 GiB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 228195054  bytes 61193236088 (56.9 GiB)
```

The USB Dongle will initially have nothing displaying as the (Ethernet) IP and will have an Interface Name that looks almost like this:

```
enx00e04c680037
```

Find it and grab the Mac Address for later on when creating the UDEV Rules:



Setting up UDEV Rules

Step 1:

Let's create a new rule under the name 75-persistent-net.rules

```
sudo nano /etc/udev/rules.d/75-persistent-net.rules
```

Step 2:

In the file create the new rule to look something like this:

```
"This file was automatically generated by the /lib/udev/write_net_rules
program, run by the persistent-net-generator.rules rules file.

You can modify it, as long as you keep each rule on a single
line, and change only the value of the NAME= key.


USB device 0x:0x (r815x)
SUBSYSTEM=="net", ACTION=="add", DRIVERS=="?*", ATTR{address}=="00:00:00:00:00:00",
ATTR{dev_id}=="0x0", ATTR{type}=="1", KERNEL=="eth*", NAME="eth0""
```

Step 3:

Change the Mac Address and the Network Interface Name in the file

- “eth0” should be changed to “eth1”
- Mac Address should be the same address from the USB Dongle copied from earlier

- Write out and save the rules

Step 4:

Reload UDEV Rules

```
sudo udevadm control --reload-rules
```

Step 5:

To make sure that every time we reboot the host it will prioritize the main local network and not “eth1” local network we need to add to the rc.local file:

```
sudo nano /etc/rc.local
```

Add:

```
sudo ifconfig eth1 down
sudo ifconfig eth1 up
```

To make it look like this:

```
#!/bin/sh -e
#
# rc.local
#
# This script is executed at the end of each multiuser runlevel.
# Make sure that the script will "exit 0" on success or any other
# value on error.
#
# In order to enable or disable this script just change the execution
# bits.

if test -d /etc/boot.d ; then
        run-parts /etc/boot.d
fi

# Turn off local network until host is fully booted with Corp network

# Switch off secondary local network until full system boot
sudo ifconfig eth1 down
sudo ifconfig eth1 up
```

- Write out and save

Step 6:

Reboot host to make the UDEV rules changes push through

```
sudo reboot
```

Add Interface Details

Add the new eth1 interface details in /etc/network/interfaces:

```
sudo nano /etc/network/interfaces
```

The file should initially look like:

```
# Configuration of the loopback (lo) network interface.
# ifupdown's postinst maintainer script ensures that these lines are present.
auto lo
iface lo inet loopback

# Source in all the configuration files under /etc/network/interfaces.d/
source /etc/network/interfaces.d/*.conf
```

Edit the file to now look like:

```
# Configuration of the loopback (lo) network interface.
# ifupdown's postinst maintainer script ensures that these lines are present.

# The loopback network interface
auto lo
iface lo inet loopback

# The primary network interface
auto em1
iface em1 inet dhcp

# This is an autoconfigured IPv6 interface
iface em1 inet6 auto

# Create static inet IP and netmask for "eth1"
auto eth1
iface eth1 inet static
address 192.168.1.2
netmask 255.255.255.0

# Source in all the configuration files under /etc/network/interfaces.d/
source /etc/network/interfaces.d/*.conf
```

- Now write out and save

Let's bring up "eth1"

```
sudo ifup eth1
```

!!! If you get this…!!!

```
Cannot find device "eth1"
Failed to bring up eth1
```

… try unplugging and then re-plugging back in the usb dongle. If the issue persists double check "ifconfig" and see if you can find the interface name "eth1". If it still shows the long interface name you might have done something wrong and have to repeat setting up the UDEV rules steps.

Confirm that everything works!

Check to see if now you see the ip and submask is showing:

```
ifconfig eth1
```

Now it should display something like this:

```
eth1: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 192.168.1.2  netmask 255.255.255.0  broadcast 192.168.1.255
        ether 00:e0:4c:68:00:37  txqueuelen 1000  (Ethernet)
        RX packets 0  bytes 0 (0.0 B)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 0  bytes 0 (0.0 B)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
```