

IP Interfaces

You applied to arin.net (**American Registry for Internet Numbers**) for a block of IP addresses and they very kindly assign you a super-C address block of 10.10.1-.0/23 to use to design your network. For the first lab you will select IP addresses from 10.10.10.0/24 to configure R1, R2 and Kali in Area 1 as shown in the network diagram.

1: Configure the interfaces on R1 and R2

Open a terminal window (Mate Terminal) and issue the following commands on each router:

```
sudo su
vtysh
configure terminal
interface eth1
ip address 10.10.10.1/29
end
write
exit
```

Similarly configure eth0 of R2 with another address from the 10.10.10.0/29 subnet.

Bring up the network using the ifconfig command (see man ifconfig)

Configure the interfaces of the R1 and R2 routers using the IP addresses from the IP table below. Use **vtysh** to do the configuration. (See Interface Commands under Zebra in the frouting manual.) Don't forget to **write** to memory or your changes will be lost.

VM Subnet	IP Subnet	Network	Range	Broadcast
R1(eth1), R2(eth0)	10.10.10.0/29	10.10.10.0	10.10.10.1 -6	10.10.10.7

2: Kali

Kali (and later Linux) will be configured using Linux commands.

Again on Kali

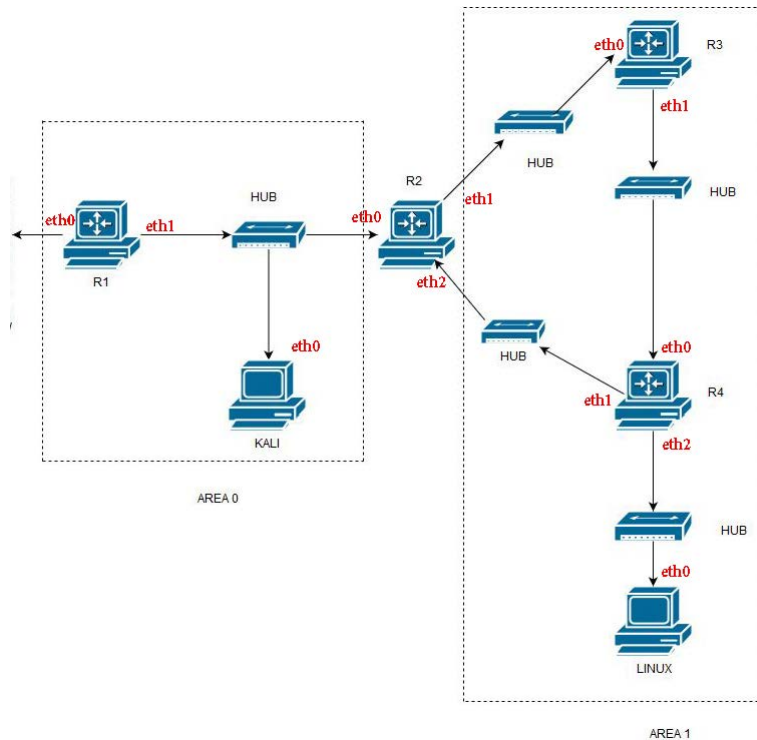
```
sudo su
nano /etc/network/interfaces ; nano/vi/vim
```

Your file should have the following entries.

```
auto eth0
iface eth0 inet static
    address 10.10.10.3
    netmask 255.255.255.248
    network 10.10.10.0
    broadcast 10.10.10.7
```

3: Verify IP addressing and interfaces

Use the show IP **show** command of **vtysh** and the **ifconfig** command of Linux to verify that the IP addressing is correct and that the interfaces are active. At this point R1 and R2 and Kali show be able to communicate with each other.



4: What to submit:

- [30 pts] Copies of the conf files under /etc/frr/frr.conf for each of R1 and R2.
- [10 pts] The Ethernet addresses of R1, R2 and Kali
- [20 pts] A copy of the /etc/network/interfaces file for Kali.
- [20 pts] Show that pinging works between R1, R2 and Kali. From Kali ping R1 and R2
- [20 pts] Copies of the arp tables on R1, R2 and Kail.

Note: The frr directory is in home/student/frr. This directory is the source for frr and is not used in the course.