IP Interfaces: Part 2

You applied to arin.net **(American Registry for Internet Numbers)** for a block of IP addresses and they very kindly assigned you a super-C address block of 10.10.10.0/23 to use to design your network. For the second lab you will select IP addresses from 10.10.11.0/24 to configure R2, R3, R4 in Area 1 as shown in the network diagram. Since R2, R3, R4 are connected by different hubs they are not in the same broadcast and collision domain and do not have direct access to each other via Ethernet. Create a table of IP subnets that are necessary to configure these three subnets but no larger than necessary. Include a fourth subnet on R4 (eth2) to be used for a subsequent DHCP assignment. Make sure your subnets do not overlap! Do not configure Linux at this time. See table below:

VM Subnet	IP Subnet	Network	Range	Broadcast
R2(eth1), R3(eth0)				
R2(eth2), R4(eth1)				
R3(eth1), R4(eth0)				
R4(eth2)				

1: Configure the interfaces on R2, R3 and R4

Open a terminal window (Applications > System Tools > MATE Terminal) and issue the following commands on each router:

> *sudo su*
>
> *vtysh*
>
> *configure terminal*
>
> *interface ethZZZ*
>
> *ip address X.Y.Z.W/<netmask>*
>
> *end*
>
> *write*
>
> *exit*

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

Configure the interfaces of the R2, R3 and R4 routers using the IP addresses from your IP table below. Use **vtysh** to do the configuration. (See Interface Commands under Zebra in the frrouting manual.) Don't forget to **write** to memory or your changes will be lost.

3: Verify IP addressing and interfaces

Use the show IP **show ip route** command of **vtysh** to verify that IP addressing is correct and that the interfaces are active. At this point R2, R3 and R4 should be able to communicate with each other.
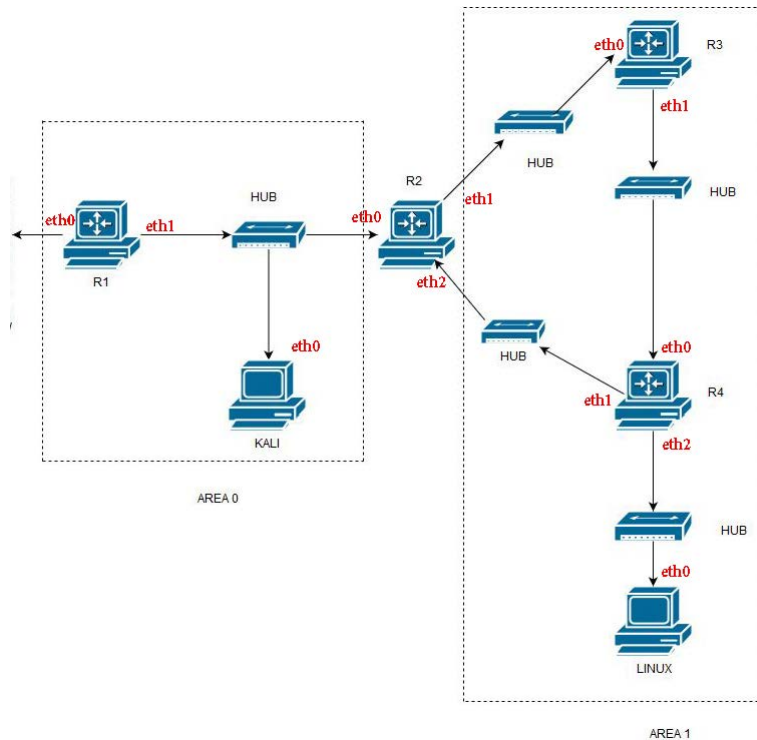
4: What to submit:

[20 pts] Your IP subnet tables

[30 pts] Copies of the conf files under /etc/frr/frr.conf for each of R2, R3 and R4

[10 pts] The Ethernet addresses of R2, R3 and R4

[20 pts] Show that pinging works between R2, R3 and R4

[20 pts] Copies of the arp tables on R2m R3 and R4