Project: BRACU Network
Group 16

Commands:

ub2

```
en
erase startup-configure
reload
hostname UB2
exit
show ip interface brief

conf t

int f0/0
ip address 192.168.10.1 255.255.254.0
no shut
exit

int s0/0/0
ip address 192.168.14.129 255.255.255.252
clock rate 64000
no shut
exit

UB2>en
UB2#conf t
Enter configuration commands, one per line. End with CNTL/Z.
UB2(config)#ip route 192.168.13.0 255.255.255.0 s0/0/0
UB2(config)#ip route 192.168.12.0 255.255.255.0 s0/0/0
UB2(config)#ip route 192.168.0.0 255.255.248.0 s0/0/0
UB2(config)#ip route 192.168.8.0 255.255.254.0 s0/0/0
UB2(config)#ip route 192.168.14.0 255.255.255.128 s0/0/0
UB2(config)#ip route 192.168.14.132 255.255.255.252 s0/0/0
UB2(config)#ip route 192.168.14.136 255.255.255.252 s0/0/0
UB2(config)#ip route 192.168.14.140 255.255.255.252 s0/0/0
UB2(config)#ip route 192.168.14.144 255.255.255.252 s0/0/0
ip route 192.168.14.148 255.255.255.252 s0/0/0
UB2(config)#exit
```

UB2(config)#ip route 192.168.14.0 255.255.255.128 s0/0/1 5
UB2(config)#exit
UB2#

copy run start

ub8

en
erase startup-configure
reload
hostname UB8
exit
show ip interface brief

conf t
int f0/0
ip address 192.168.13.1 255.255.255.0
no shut
exit

int s0/0/0
ip address 192.168.14.130 255.255.255.252
no shut
exit

int s0/0/1
ip address 192.168.14.133 255.255.255.252
clock rate 64000
no shut
exit

UB8(config)#int s0/1/0
UB8(config-if)#ip address 192.168.14.149 255.255.255.252
UB8(config-if)#clock rate 64000
UB8(config-if)#no shut
UB8(config-if)#exit
UB8(config)#exit

en
conf t
ip route 192.168.10.0 255.255.254.0 s0/0/0
UB8(config)#ip route 192.168.12.0 255.255.255.0 s0/0/1

```
UB8(config)#ip route 192.168.0.0 255.255.248.0 s0/0/1
UB8(config)#ip route 192.168.14.136 255.255.255.252 s0/0/1
UB8(config)#ip route 192.168.14.140 255.255.255.252 s0/0/1
UB8(config)#ip route 192.168.14.144 255.255.255.252 s0/0/1
UB8(config)#ip route 192.168.8.0 255.255.254.0 s0/0/1
UB8(config)#ip route 192.168.14.0 255.255.255.128 s0/0/1

copy run start

UB8>en
UB8#conf t
Enter configuration commands, one per line. End with CNTL/Z.
UB8(config)#router rip
UB8(config-router)#version 2
UB8(config-router)#no aut
UB8(config-router)#no auto-summary
UB8(config-router)#network 192.168.13.0
UB8(config-router)#network 192.168.14.132
UB8(config-router)#redistr
UB8(config-router)#redistribute static
UB8(config-router)#exit
UB8(config)#exit

copy run start
```

ub10

```
en
erase startup-configure
reload
hostname UB10
exit
show ip interface brief

conf t
int f0/0
ip address 192.168.12.1 255.255.255.0
no shut
exit

int s0/0/1
ip address 192.168.14.134 255.255.255.252
no shut
exit
```

int s0/0/0
ip address 192.168.14.137 255.255.255.252
clock rate 64000
no shut

UB10>en
UB10#conf t
Enter configuration commands, one per line. End with CNTL/Z.
UB10(config)#ip route 0.0.0.0 0.0.0.0 s0/0/1
UB10(config)#router rip
UB10(config-router)#version 2
UB10(config-router)#no auto
UB10(config-router)#no au
UB10(config-router)#no auto-summary
UB10(config-router)#network 192.168.14.132
UB10(config-router)#network 192.168.12.0
UB10(config-router)#network 192.168.14.136
UB10(config-router)#passive-interface f0/0
UB10(config-router)#exit
UB10(config)#exit

copy run start

NC

en
erase startup-configure
reload
hostname NC
exit
show ip interface brief

en
conf t
int f0/0
ip address 192.168.0.1 255.255.248.0
no shut

exit
int s0/0/0
ip address 192.168.14.138 255.255.255.252
no shut

exit
int s0/0/1
ip address 192.168.14.141 255.255.255.252
clock rate 64000
no shut

NC#conf t
Enter configuration commands, one per line. End with CNTL/Z.
NC(config)#no ip route 0.0.0.0 0.0.0.0 s0/0/1
NC(config)#router rip
NC(config-router)#version 2
NC(config-router)#no aut
NC(config-router)#no auto-summary
NC(config-router)#network 192.168.14.136
NC(config-router)#network 192.168.14.140
NC(config-router)#network 192.168.0.0
NC(config-router)#exit
NC(config)#exit

copy run start

Tarc

en
erase startup-configure
reload
hostname Tarc
exit
show ip interface brief

en
conf t
int f0/0
ip address 192.168.8.1 255.255.254.0
no shut

exit
int s0/0/1
ip address 192.168.14.142 255.255.255.252

no shut

exit
int s0/0/0
exit
exit
int s0/0/0
ip address 192.168.14.145 255.255.255.252
clock rate 64000
no shut

Tarc>en
Tarc#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Tarc(config)#ip route 0.0.0.0 0.0.0.0 s0/0/0
Tarc(config)#router rip
Tarc(config-router)#version 2
Tarc(config-router)#no auto
Tarc(config-router)#no auto-summary
Tarc(config-router)#network 192.168.14.140
Tarc(config-router)#network 192.168.8.0
Tarc(config-router)#network 192.168.14.144
Tarc(config-router)#passi
Tarc(config-router)#passive-interface 192.168.8.0
^
% Invalid input detected at '^' marker.

Tarc(config-router)#passi
Tarc(config-router)#passive-interface f0/0
Tarc(config-router)#exit
Tarc(config)#exit

copy run start

BLC

en
erase startup-configure
reload
hostname BLC
exit
show ip interface brief

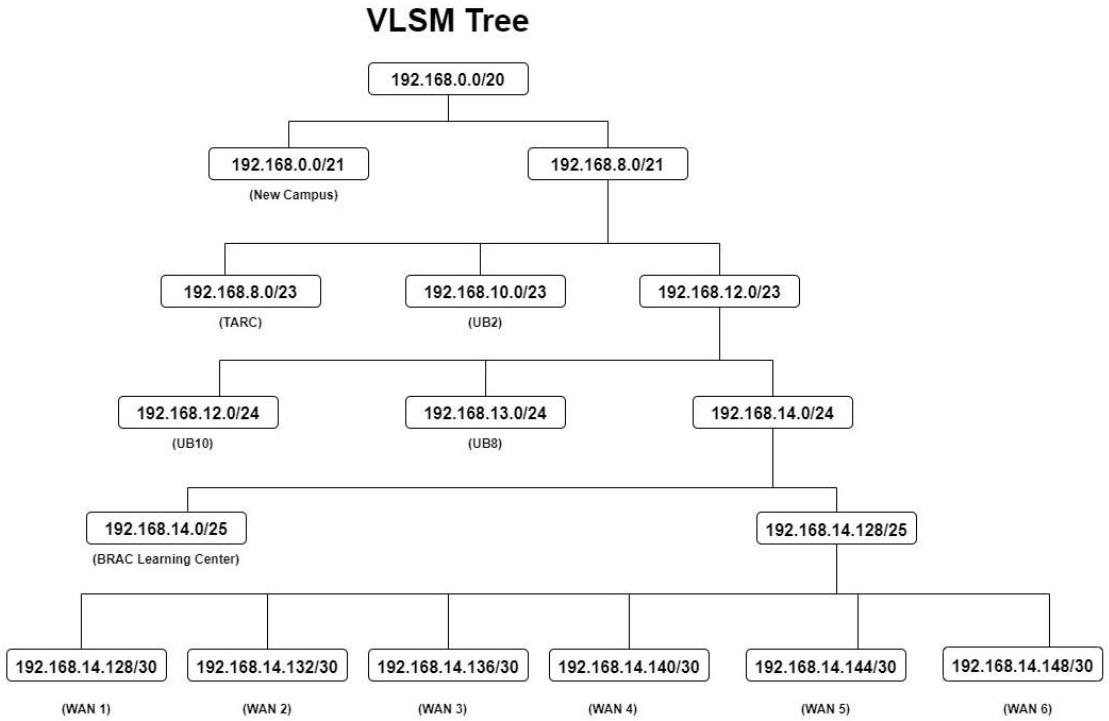
```
conf t
int f0/0
ip address 192.168.14.1 255.255.255.128
no shut

int s0/0/0
ip address 192.168.14.146 255.255.255.252
no shut

BLC#conf t
Enter configuration commands, one per line. End with CNTL/Z.
BLC(config)#ip route 0.0.0.0 0.0.0.0 s0/0/0
BLC(config)#router ri[p
^
% Invalid input detected at '^' marker.

BLC(config)#router rip
BLC(config-router)#version 2
BLC(config-router)#no au
BLC(config-router)#no auto-summary
BLC(config-router)#network 192.168.14.144
BLC(config-router)#network 192.168.14.0
BLC(config-router)#passi
BLC(config-router)#passive-interface 192.168.14.0
^
% Invalid input detected at '^' marker.

BLC(config-router)#passive-interface f0/0
BLC(config-router)#exit
BLC(config)#exit

BLC#conf t
Enter configuration commands, one per line. End with CNTL/Z.
BLC(config)#ip route 192.168.10.0 255.255.254.0 s0/0/1 5
BLC(config)#exit

copy run start
```

VLSM Details:

for new campus 1024 hosts
so $log_2(1024 + 2) = 11$
So subnet mask should be in between 20 and 21

192.168.0.0/20

Host Name	Host Requirement	+2	IP Block Size	Hosts bit required	Network bits required
New Campus	1024	1026	2048	11	21
TARC	508	510	512	9	23
UB2	312	314	512	9	23
UB 10	234	236	256	8	24
UB 8	128	130	256	8	24
BRAC Learning Center	110	112	128	7	25
WAN 1	2	4	4	2	30
WAN 2	2	4	4	2	30
WAN 3	2	4	4	2	30
WAN 4	2	4	4	2	30
WAN 5	2	4	4	2	30
WAN 6	2	4	4	2	30



IP Address Table:

Device	Interface	IP Address	Subnet Mask	Default Gateway
UB2	f0/0	192.168.10.1	255.255.254.0	N/A
	s0/0/0	192.168.14.129	255.255.255.252	N/A
	s0/0/1	192.168.14.149	255.255.255.252	N/A
UB8	f0/0	192.168.13.1	255.255.255.0	N/A
	s0/0/0	192.168.14.130	255.255.255.252	N/A
	s0/0/1	192.168.14.133	255.255.255.252	N/A

UB10	f0/0	192.168.12.1	255.255.255.0	N/A
	s0/0/0	192.168.14.137	255.255.255.252	N/A
	s0/0/1	192.168.14.134	255.255.255.252	N/A
New Campus	f0/0	192.168.0.1	255.255.255.248	N/A
	s0/0/0	192.168.14.138	255.255.255.252	N/A
	s0/0/1	192.168.14.141	255.255.255.252	N/A
TARC	f0/0	192.168.8.1	255.255.254.0	N/A
	s0/0/0	192.168.14.145	255.255.255.252	N/A
	s0/0/1	192.168.14.142	255.255.255.252	N/A
BRAC Learning Center	f0/0	192.168.14.1	255.255.255.128	N/A
	s0/0/0	192.168.14.146	255.255.255.252	N/A
	s0/0/1	192.168.14.150	255.255.255.252	N/A
PC1	fa0	192.168.10.3	255.255.254.0	192.168.10.1
PC2	fa0	192.168.10.2	255.255.254.0	192.168.10.1
PC3	fa0	192.168.13.2	255.255.255.0	192.168.13.1
PC4	fa0	192.168.12.2	255.255.255.0	192.168.12.1
PC5	fa0	192.168.0.2	255.255.255.248	192.168.0.1
PC6	fa0	192.168.8.2	255.255.254.0	192.168.8.1
PC7	fa0	192.168.14.2	255.255.255.128	192.168.14.1
Printer1	fa0	192.168.12.3	255.255.255.0	192.168.12.1
Printer2	fa0	192.168.0.3	255.255.248.0	192.168.0.1
Printer3	fa0	192.168.0.6	255.255.248.0	192.168.0.1
Printer4	fa0	192.168.0.4	255.255.248.0	192.168.0.1
Printer5	fa0	192.168.0.5	255.255.248.0	192.168.0.1
Printer6	fa0	192.168.8.3	255.255.254.0	192.168.8.1
Printer7	fa0	192.168.8.4	255.255.254.0	192.168.8.1

BracU Web Server	fa0	192.168.13.3	255.255.255.0	192.168.13.1
Local DNS Server	fa0	192.168.13.4	255.255.255.0	192.168.13.1
Email Server	fa0	192.168.14.3	255.255.255.128	192.168.14.1

Assumptions:

- We considered UB2 as the root and then calculated the shortest route.
- There was no DHCP server.
- The DNS server was in UB8 location along with the web server.