

# **CSE421 Project**

## **Project Name: BRACU Network**

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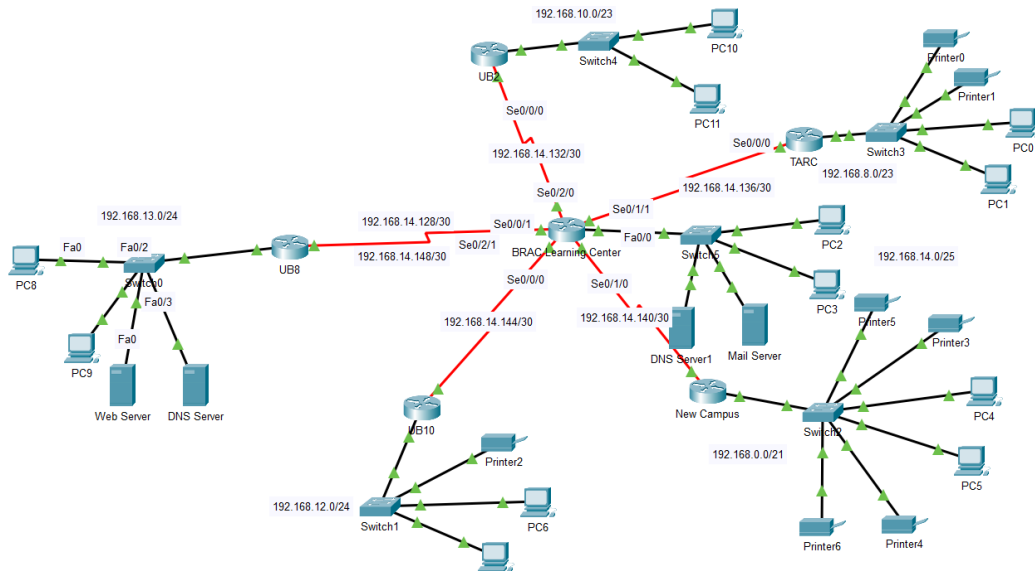
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## IP assigning :

### PC ip assigning:

**PC0-> Desktop -> ip configuration**

Ipv4 Address- 192.168.8.5

Subnet mask-255.255.254.0

Default gateway-192.168.8.1

**PC1-> Desktop -> ip configuration**

Ipv4 Address- 192.168.8.3

Subnet mask-255.255.254.0

Default gateway-192.168.8.1

**PC2-> Desktop -> ip configuration**

Ipv4 Address- 192.168.14.2

Subnet mask-255.255.255.128

Default gateway-192.168.14.1

**PC3-> Desktop -> ip configuration**

Ipv4 Address- 192.168.14.4

Subnet mask-255.255.255.128

Default gateway-192.168.14.1

**PC4-> Desktop -> ip configuration**

Ipv4 Address- 192.168.0.4

Subnet mask-255.255.248.0

Default gateway-192.168.0.1

**PC5-> Desktop -> ip configuration**

Ipv4 Address- 192.168.0.5

Subnet mask-255.255.248.0

Default gateway-192.168.0.1

**PC6-> Desktop -> ip configuration**

Ipv4 Address- 192.168.12.20

Subnet mask-255.255.255.0

Default gateway-192.168.12.1

**PC7-> Desktop -> ip configuration**

Ipv4 Address- 192.168.12.21

Subnet mask-255.255.255.0

Default gateway-192.168.12.1

**PC8-> Desktop -> ip configuration**

Ipv4 Address- 192.168.13.4

Subnet mask-255.255.255.0

Default gateway-192.168.13.1

**PC9-> Desktop -> ip configuration**

Ipv4 Address- 192.168.13.3

Subnet mask-255.255.255.0

Default gateway-192.168.13.1

**PC10-> Desktop -> ip configuration**

Ipv4 Address- 192.168.10.5

Subnet mask-255.255.254.0

Default gateway-192.168.10.1

**PC11-> Desktop -> ip configuration**

Ipv4 Address- 192.168.10.7

Subnet mask-255.255.254.0

Default gateway-192.168.10.1

## **Router IP assigning:**

**Router : UB8-> CLI**

En

Conf t

Interface g0/0

Ip address 192.168.13.1 255.255.255.0

No shutdown

Exit

Interface s 0/0/0

Ip address 192.168.14.130 255.255.255.252

No shutdown

Exit

Interface s 0/0/1

Ip address 192.168.14.150 255.255.255.252

No shutdown

Exit

### **Router : UB10-> CLI**

En

Conf t

#### **Interface g0/0**

Ip address 192.168.12.1 255.255.255.0

No shutdown

Exit

#### **Interface s 0/0/0**

Ip address 192.168.14.146 255.255.255.252

No shutdown

Exit

#### **Interface s 0/0/1**

Ip address 192.168.14.149 255.255.255.252

No shutdown

Exit

### **Router : New Campus-> CLI**

En

Conf t

#### **Interface g0/0**

Ip address 192.168.0.1 255.255.248.0

No shutdown

Exit

#### **Interface s 0/0/0**

Ip address 192.168.14.142 255.255.255.252

No shutdown

Exit

### **Router : TARC-> CLI**

En

Conf t

#### **Interface g0/0**

Ip address 192.168.8.1 255.255.254.0

No shutdown

Exit

Interface s 0/0/0

Ip address 192.168.14.138 255.255.255.252

No shutdown

Exit

**Router : TARC-> CLI**

En

Conf t

Interface g0/0

Ip address 192.168.10.1 255.255.254.0

No shutdown

Exit

Interface s 0/0/0

Ip address 192.168.14.134 255.255.255.252

No shutdown

Exit

## **Static Configuration:**

**Router UB8 -> CLI**

en

conf t

Ip route 192.168.10.0 255.255.255.0 192.168.14.129

Ip route 192.168.14.0 255.255.255.128 192.168.14.129

Ip route 192.168.0.0 255.255.248.0 192.168.14.129

Ip route 192.168.12.0 255.255.255.0 192.168.14.129

```
Ip route 192.168.8.0 255.255.254.0 192.168.14.129
```

```
Exit
```

### **Router UB2 -> CLI**

```
en
```

```
conf t
```

```
Ip route 192.168.13.0 255.255.255.0 192.168.14.133
```

```
Ip route 192.168.14.0 255.255.255.128 192.168.14.133
```

```
Ip route 192.168.0.0 255.255.248.0 192.168.14.133
```

```
Ip route 192.168.12.0 255.255.255.0 192.168.14.133
```

```
Ip route 192.168.8.0 255.255.254.0 192.168.14.133
```

```
Exit
```

### **Router BRAC Learning Center -> CLI**

```
en
```

```
conf t
```

```
Ip route 192.168.13.0 255.255.255.0 192.168.14.130
```

```
Ip route 192.168.10.0 255.255.255.0 192.168.14.133
```

```
Ip route 192.168.0.0 255.255.248.0 192.168.14.133
```

```
Ip route 192.168.12.0 255.255.255.0 192.168.14.133
```

```
Ip route 192.168.8.0 255.255.248.0 192.168.14.133
```

```
Exit
```

### **Backup Configuration:**

### **Router UB2 -> CLI**

En

conf t

Router(config)#ip route 0.0.0.0 0.0.0.0 s0/0/0

Router(config)#exit

### **Router UB8 -> CLI**

Router>en

Router#conf t

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#ip route 0.0.0.0 0.0.0.0 s0/0/0

Router(config)#exit

### **Router New Campus -> CLI**

Router>en

Router#conf t

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#ip route 0.0.0.0 0.0.0.0 s0/0/0

Exit

### **Router TARC -> CLI**

Router>en

Router#conf t

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#ip route 0.0.0.0 0.0.0.0 s0/0/0

Exit

### **Router UB10-> CLI**

Router>en

Router#conf t

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#ip route 0.0.0.0 0.0.0.0 192.168.14.150

Exit

### **Router BRAC Learning Center -> CLI**

```
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#ip route 0.0.0.0 0.0.0.0 192.168.14.130

Exit
```

## **Mail Configuration:**

## **Web server configuration:**

## **DNS Server Configuration:**

## **Floating Route in UB8:**

```
En
Conf t
Ip route 192.168.12.0 255.255.255.0 192.168.14.149 5

Exit
```

## **Dynamic configuration:**

```
New Campus
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#ip route 0.0.0.0 0.0.0.0 s0/0/0
Router(config)#router rip
Router(config-router)#version 2
```



```
Router(config-router)#no auto-summary
Router(config-router)#network 192.168.0.0
Router(config-router)#network 192.168.14.140
Router(config-router)#default-information originate
Router(config-router)#End
Router#copy run start
Enter
UB10
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#ip route 0.0.0.0 0.0.0.0 s0/0/0
Router(config)#router rip
Router(config-router)#version 2
Router(config-router)#no auto-summary
Router(config-router)#network 192.168.0.0
Router(config-router)#network 192.168.8.0
Router(config-router)#network 192.168.14.0
Router(config-router)#network 192.168.12.0
Router(config-router)#network 192.168.10.0
Router(config-router)#network 192.168.13.0
Router(config-router)#no auto-summary
Router(config-router)#default-information originate
Router(config-router)#End
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#copy run start
Enter
```

```
TARC
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#ip route 0.0.0.0 0.0.0.0 s0/0/0
Router(config)#router rip
```

```
Router(config-router)#version 2
Router(config-router)#no auto-summary
Router(config-router)#network 192.168.0.0
Router(config-router)#network 192.168.8.0
Router(config-router)#network 192.168.14.0
Router(config-router)#network 192.168.12.0
Router(config-router)#network 192.168.10.0
Router(config-router)#network 192.168.13.0
Router(config-router)#no auto-summary
Router(config-router)#default-information originate
Router(config-router)#End
Router#
%SYS-5-CONFIG_I: Configured from console by console
```

```
Router#copy run start
Enter
```

```
BRAC Learning Center
To UB10
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#ip route 0.0.0.0 0.0.0.0 s0/0/0
Router(config)#router rip
Router(config-router)#version 2
Router(config-router)#no auto-summary
Router(config-router)#network 192.168.0.0
Router(config-router)#network 192.168.8.0
Router(config-router)#network 192.168.14.0
Router(config-router)#network 192.168.12.0
Router(config-router)#network 192.168.10.0
Router(config-router)#network 192.168.13.0
Router(config-router)#no auto-summary
Router(config-router)#default-information originate
Router(config-router)#End
Router#
%SYS-5-CONFIG_I: Configured from console by console
```

```
Router#copy run start
Enter
To New Campus
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#ip route 0.0.0.0 0.0.0.0 s0/1/0
Router(config)#router rip
Router(config-router)#version 2
Router(config-router)#no auto-summary
Router(config-router)#network 192.168.0.0
Router(config-router)#network 192.168.8.0
Router(config-router)#network 192.168.14.0
Router(config-router)#network 192.168.12.0
Router(config-router)#network 192.168.10.0
Router(config-router)#network 192.168.13.0
Router(config-router)#no auto-summary
Router(config-router)#default-information originate
Router(config-router)#End
Router#
%SYS-5-CONFIG_I: Configured from console by console
```

```
Router#copy run start
Enter
To TARC
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#ip route 0.0.0.0 0.0.0.0 s0/1/1
Router(config)#router rip
Router(config-router)#no auto-summary
Router(config-router)#network 192.168.0.0
Router(config-router)#network 192.168.8.0
Router(config-router)#network 192.168.14.0
Router(config-router)#network 192.168.12.0
Router(config-router)#network 192.168.10.0
Router(config-router)#network 192.168.13.0
Router(config-router)#no auto-summary
Router(config-router)#default-information originate
Router(config-router)#End
Router#
%SYS-5-CONFIG_I: Configured from console by console
```

```
Router#copy run start
Enter
```

UB2:

```
Router(config-router)#no auto-summary
Router(config-router)#network 192.168.0.0
Router(config-router)#network 192.168.8.0
Router(config-router)#network 192.168.14.0
Router(config-router)#network 192.168.12.0
Router(config-router)#network 192.168.10.0
Router(config-router)#network 192.168.13.0
Router(config-router)#no auto-summary
Router(config-router)#default-information originate
Router(config-router)#End
Router#
%SYS-5-CONFIG_I: Configured from console by console
```

```
Router#copy run start
Destination filename [startup-config]?
Building configuration...
[OK]
Router#
```

UB8:

```
Router(config)#router rip
Router(config-router)#version 2
Router(config-router)#no auto-summary
Router(config-router)#network 192.168.0.0
Router(config-router)#network 192.168.8.0
Router(config-router)#network 192.168.14.0
Router(config-router)#network 192.168.12.0
Router(config-router)#network 192.168.10.0
Router(config-router)#network 192.168.13.0
Router(config-router)#no auto-summary
Router(config-router)#default-information originate
Router(config-router)#End
Router#
```

%SYS-5-CONFIG\_I: Configured from console by console

Router#copy run start

Destination filename [startup-config]?

Building configuration...

[OK]

VLSM Table:

Name	Hosts Needed	Hosts Available	Unused Hosts	Network Address	Slash	Mask	Usable Range	Broadcast
New Campus	1024+2	2048	1022	192.168.0.0	/21	255.255.248.0	192.168.0.1 - 192.168.7.254	192.168.7.255
TARC	508+2	512	2	192.168.8.0	/23	255.255.254.0	192.168.8.1 - 192.168.9.254	192.168.9.255
UB2	312+2	512	198	192.168.10.0	/23	255.255.254.0	192.168.10.1 - 192.168.11.254	192.168.11.255
UB10	234+2	256	20	192.168.12.0	/24	255.255.255.0	192.168.12.1 - 192.168.12.254	192.168.12.255
UB8	128+2	256	126	192.168.13.0	/24	255.255.255.0	192.168.13.1 - 192.168.13.254	192.168.13.255
BLC	110	126	16	192.168.14.0	/25	255.255.255.128	192.168.14.1 - 192.168.14.126	192.168.14.127
W1	2+2	4	0	192.168.14.128	/30	255.255.255.252	192.168.14.129 - 192.168.14.130	192.168.14.131
W2	2+2	4	0	192.168.14.132	/30	255.255.255.252	192.168.14.133 - 192.168.14.134	192.168.14.135
W3	2+2	4	0	192.168.14.136	/30	255.255.255.252	192.168.14.137 - 192.168.14.138	192.168.14.139
W4	2+2	4	0	192.168.14.140	/30	255.255.255.252	192.168.14.141 - 192.168.14.142	192.168.14.143
W5	2+2	4	0	192.168.14.144	/30	255.255.255.252	192.168.14.145 - 192.168.14.146	192.168.14.147

W6	2+2	4	0	192.168.14.148	/30	255.255.255.252	192.168.14.149 - 192.168.14.150	192.168.14.151
			1384					

Device IP Table:

Device Name	IP address	Subnet mask	Default gateway
PC0	192.168.8.5	255.255.254.0	192.168.8.1
PC1	192.168.8.3	255.255.254.0	192.168.8.1
PC2	192.168.14.2	255.255.255.128	192.168.14.1
PC3	192.168.14.4	255.255.255.128	192.168.14.1
PC4	192.168.0.4	255.255.248.0	192.168.0.1
PC5	192.168.0.5	255.255.248.0	192.168.0.1
PC6	192.168.12.20	255.255.255.0	192.168.12.1
PC7	192.168.12.21	255.255.255.0	192.168.12.1
PC8	192.168.13.4	255.255.255.0	192.168.13.1
PC9	192.168.13.3	255.255.255.0	192.168.13.1
PC10	192.168.10.5	255.255.254.0	192.168.10.1
PC11	192.168.10.7	255.255.254.0	192.168.10.1
Printer0	192.168.8.12	255.255.254.0	192.168.8.1
Printer1	192.168.8.10	255.255.254.0	192.168.8.1
Printer2	192.168.12.11	255.255.255.0	192.168.12.1
Printer3	192.168.0.13	255.255.248.0	192.168.0.1
Printer4	192.168.0.12	255.255.248.0	192.168.0.1

Printer5	192.168.0.11	255.255.248.0	192.168.0.1
Printer6	192.168.0.14	255.255.248.0	192.168.0.1
Web Server	192.168.13.11	255.255.255.0	192.168.13.1
Mail Server	192.168.14.13	255.255.255.128	192.168.14.1
DNS Server1	192.168.14.18	255.255.255.128	192.168.14.1

Routing Table Information:

### **Routing Information table:**

Device	Interface	IP address	Subnet mask
BRAC Learning Center	G0/0	192.168.14.1/24	255.255.255.128
	S0/0/0	192.168.14.145/30	255.255.255.252
	S0/0/1	192.168.14.129/30	255.255.255.252
	S0/1/0	192.168.14.141/30	255.255.255.252
	S0/1/1	192.168.14.137/30	255.255.255.252
	S0/2/0	192.168.14.133/30	255.255.255.252
New Campus	G0/0	192.168.0.1/21	255.255.248.0
	S0/0/0	192.168.14.142/30	255.255.255.252
UB2	G0/0	192.168.10.1/23	255.255.254.0
	S0/0/0	192.168.14.134/30	255.255.255.252
TARC	G0/0	192.168.8.1/23	255.255.254.0
	S0/0/0	192.168.14.138/30	255.255.255.252
UB10	G0/0	192.168.12.1/24	255.255.255.0

	S0/0/0	192.168.14.146/30	255.255.255.252
	S0/0/1	192.168.14.149/30	255.255.255.252
<b>UB8</b>	G0/0	192.168.13.1/24	255.255.224.0
	S0/0/0	192.168.14.130/30	255.255.255.252
	S0/0/1	192.168.14.150/30	255.255.255.252

Assumption:

I have assumed the primary route as UB8-> BRAC Learning Center-> UB10. And to create floating route for this path from UB8 to UB10 backup route will be from UB8 s0/0/1 to UB10 s0/0/0 through network 192.168.14.148/30.