**Campus University Network Design and Implementation**

**Problem:**

Albion University is a large university which has two campuses situated 20 miles apart. The university’s students and staff are distributed in 4 faculties, these include the faculties of Health and Sciences, Business, Engineering/Computing and Art/Design. Each member of staff has a PC and students have access to PCs in the labs. Create a network topology with the main components to support the following:

Main Campus:

1. Building A: Administrative staff in the departments of management, HR and finance. The admin staff PCs are distributed in the building offices and it is expected that they will share some networking equipment (Hint: use of VLANs is expected here). The Faculty of Business is also situated in this building

2. Building B: Faculty of Engineering and Computing and Faculty of Art and Design.

3. Building C: Students’ labs and IT department. The IT department hosts the University Web server and other servers - There is also an email server hosted externally on the cloud.

Smaller/Branch campus:

Faculty of Health and Sciences (staff and students’ labs are situated on separate floors)

Each department/faculty is expected to be on its own separate IP network.

1. The switches should be configured with appropriate VLANs and security settings.

2. RIPv2 will be used to provide routing for the routers in the internal network and static routing for the external server.

3. The devices in building A will be expected to acquire dynamic IP addresses from a router-based DHCP server.

4. Configure in Packet Tracer the network with appropriate settings to achieve the connectivity and functionalities specified in the requirements.

Technologies Implemented

1. Creating a network topology using Cisco Packet Tracer.

2. Hierarchical Network Design.

3. Connecting Networking devices with Correct cabling.

4. Creating VLANs and assigning ports VLAN numbers.

5. Subnetting and IP Addressing.

6. Configuring Inter-VLAN Routing (Router on a stick).

7. Configuring DHCP Server (Router as the DHCP Server).

8. Configuring SSH for secure Remote access.

9. Configuring RIPv2 as the routing protocol.

10. Configuring switchport security or Port-Security on the switches.

11. Host Device Configurations.

12. Test and Verifying Network Communication.

**Solution:**

**Main-Campus-Router:**

Router>en

Router#conf t

Router(config)#hostname Main-Campus-Router

Main-Campus-Router(config)#int se 0/0/0

Main-Campus-Router(config-if)#no shutdown

Main-Campus-Router(config-if)#clock rate 64000

Main-Campus-Router(config-if)#ip address 10.10.10.5 255.255.255.252

Main-Campus-Router(config-if)#exit

Main-Campus-Router(config)#int se 0/0/1

Main-Campus-Router(config-if)#no shutdown

Main-Campus-Router(config-if)#clock rate 64000

Main-Campus-Router(config-if)#ip address 10.10.10.1 255.255.255.252

Main-Campus-Router(config-if)#exit

Main-Campus-Router(config)#int gig 0/0

Main-Campus-Router(config-if)#no shutdown

Main-Campus-Router(config-if)#exit

Main-Campus-Router(config)#do wr

Main-Campus-Router(config)#exit

**#Inter-VLAN Routing**

Main-Campus-Router(config)#int gig0/0.10

Main-Campus-Router(config-subif)#encapsulation dot1Q 10

Main-Campus-Router(config-subif)#ip address 192.168.1.1 255.255.255.0

Main-Campus-Router(config-subif)#exit

Main-Campus-Router(config)#int gig0/0.20

Main-Campus-Router(config-subif)#encapsulation dot1Q 20

Main-Campus-Router(config-subif)#ip address 192.168.2.1 255.255.255.0

Main-Campus-Router(config-subif)#exit

Main-Campus-Router(config)#int gig0/0.30

Main-Campus-Router(config-subif)#encapsulation dot1Q 30

Main-Campus-Router(config-subif)#ip address 192.168.3.1 255.255.255.0

Main-Campus-Router(config-subif)#exit

Main-Campus-Router(config)#int gig0/0.40

Main-Campus-Router(config-subif)#encapsulation dot1Q 40

Main-Campus-Router(config-subif)#ip address 192.168.4.1 255.255.255.0

Main-Campus-Router(config-subif)#exit

Main-Campus-Router(config)#int gig0/0.50

Main-Campus-Router(config-subif)#encapsulation dot1Q 50

Main-Campus-Router(config-subif)#ip address 192.168.5.1 255.255.255.0

Main-Campus-Router(config-subif)#exit

Main-Campus-Router(config)#int gig0/0.60

Main-Campus-Router(config-subif)#encapsulation dot1Q 60

Main-Campus-Router(config-subif)#ip address 192.168.6.1 255.255.255.0

Main-Campus-Router(config-subif)#exit

Main-Campus-Router(config)#int gig0/0.70

Main-Campus-Router(config-subif)#encapsulation dot1Q 70

Main-Campus-Router(config-subif)#ip address 192.168.7.1 255.255.255.0

Main-Campus-Router(config-subif)#exit

Main-Campus-Router(config)#int gig0/0.80

Main-Campus-Router(config-subif)#encapsulation dot1Q 80

Main-Campus-Router(config-subif)#ip address 192.168.8.1 255.255.255.0

Main-Campus-Router(config-subif)#exit

Main-Campus-Router(config)#do wr

**#Configure DHCP Server**

Main-Campus-Router(config)#service dhcp

Main-Campus-Router(config)#ip dhcp pool Admin

Main-Campus-Router(dhcp-config)#network 192.168.1.0 255.255.255.0

Main-Campus-Router(dhcp-config)#default-router 192.168.1.1

Main-Campus-Router(dhcp-config)#dns-server 192.168.1.1

Main-Campus-Router(dhcp-config)#exit

Main-Campus-Router(config)#ip dhcp pool HR

Main-Campus-Router(dhcp-config)#network 192.168.2.0 255.255.255.0

Main-Campus-Router(dhcp-config)#default-router 192.168.2.1

Main-Campus-Router(dhcp-config)#dns-server 192.168.2.1

Main-Campus-Router(dhcp-config)#exit

Main-Campus-Router(config)#ip dhcp pool Finance

Main-Campus-Router(dhcp-config)#network 192.168.3.0 255.255.255.0

Main-Campus-Router(dhcp-config)#default-router 192.168.3.1

Main-Campus-Router(dhcp-config)#dns-server 192.168.3.1

Main-Campus-Router(dhcp-config)#exit

Main-Campus-Router(config)#ip dhcp pool Business

Main-Campus-Router(dhcp-config)#network 192.168.4.0 255.255.255.0

Main-Campus-Router(dhcp-config)#default-router 192.168.4.1

Main-Campus-Router(dhcp-config)#dns-server 192.168.4.1

Main-Campus-Router(dhcp-config)#exit

Main-Campus-Router(config)#ip dhcp pool E&C

Main-Campus-Router(dhcp-config)#network 192.168.5.0 255.255.255.0

Main-Campus-Router(dhcp-config)#default-router 192.168.5.1

Main-Campus-Router(dhcp-config)#dns-server 192.168.5.1

Main-Campus-Router(dhcp-config)#exit

Main-Campus-Router(config)#ip dhcp pool A&D

Main-Campus-Router(dhcp-config)#network 192.168.6.0 255.255.255.0

Main-Campus-Router(dhcp-config)#default-router 192.168.6.1

Main-Campus-Router(dhcp-config)#dns-server 192.168.6.1

Main-Campus-Router(dhcp-config)#exit

Main-Campus-Router(config)#ip dhcp pool STD-LAB-M

Main-Campus-Router(dhcp-config)#network 192.168.7.0 255.255.255.0

Main-Campus-Router(dhcp-config)#default-router 192.168.7.1

Main-Campus-Router(dhcp-config)#dns-server 192.168.7.1

Main-Campus-Router(dhcp-config)#exit

Main-Campus-Router(config)#ip dhcp pool IT

Main-Campus-Router(dhcp-config)#network 192.168.8.0 255.255.255.0

Main-Campus-Router(dhcp-config)#default-router 192.168.8.1

Main-Campus-Router(dhcp-config)#dns-server 192.168.8.1

Main-Campus-Router(dhcp-config)#exit

Main-Campus-Router(config)#do wr

Main-Campus-Router(config)#exit

**##Exclude IP addresses for static devices**

Main-Campus-Router(config)#ip dhcp excluded-address 192.168.1.1

Main-Campus-Router(config)#ip dhcp excluded-address 192.168.2.1

Main-Campus-Router(config)#ip dhcp excluded-address 192.168.3.1

Main-Campus-Router(config)#ip dhcp excluded-address 192.168.4.1

Main-Campus-Router(config)#ip dhcp excluded-address 192.168.5.1

Main-Campus-Router(config)#ip dhcp excluded-address 192.168.6.1

Main-Campus-Router(config)#ip dhcp excluded-address 192.168.7.1

Main-Campus-Router(config)#ip dhcp excluded-address 192.168.8.1

Main-Campus-Router(config)#do wr

**#Enable Routing Protocol**

Main-Campus-Router(config)#router rip

Main-Campus-Router(config-router)#version 2

Main-Campus-Router(config-router)#network 192.168.1.0

Main-Campus-Router(config-router)#network 192.168.2.0

Main-Campus-Router(config-router)#network 192.168.3.0

Main-Campus-Router(config-router)#network 192.168.4.0

Main-Campus-Router(config-router)#network 192.168.5.0

Main-Campus-Router(config-router)#network 192.168.6.0

Main-Campus-Router(config-router)#network 192.168.7.0

Main-Campus-Router(config-router)#network 192.168.8.0

Main-Campus-Router(config-router)#network 10.10.10.0

Main-Campus-Router(config-router)#network 10.10.10.4

Main-Campus-Router(config-router)#exit

Main-Campus-Router(config)#do wr

Main-Campus-Router(config)#exit

**Main-Campus-switch:**

Switch>en

Switch#conf t

Switch(config)#hostname Main-Campus-switch

Main-Campus-switch(config)#vlan 10

Main-Campus-switch(config-vlan)#name Admin

Main-Campus-switch(config-vlan)#exit

Main-Campus-switch(config)#vlan 20

Main-Campus-switch(config-vlan)#name HR

Main-Campus-switch(config-vlan)#exit

Main-Campus-switch(config)#vlan 30

Main-Campus-switch(config-vlan)#name Finance

Main-Campus-switch(config-vlan)#exit

Main-Campus-switch(config)#vlan 40

Main-Campus-switch(config-vlan)#name Business

Main-Campus-switch(config-vlan)#exit

Main-Campus-switch(config)#vlan 50

Main-Campus-switch(config-vlan)#name E&C

Main-Campus-switch(config-vlan)#exit

Main-Campus-switch(config)#vlan 60

Main-Campus-switch(config-vlan)#name A&D

Main-Campus-switch(config-vlan)#exit

Main-Campus-switch(config)#vlan 70

Main-Campus-switch(config-vlan)#name STD-LAB-M

Main-Campus-switch(config-vlan)#exit

Main-Campus-switch(config)#vlan 80

Main-Campus-switch(config-vlan)#name IT

Main-Campus-switch(config-vlan)#exit

Main-Campus-switch(config)#int gig 1/0/2

Main-Campus-switch(config-if)#switchport mode access

Main-Campus-switch(config-if)#switchport access vlan 10

Main-Campus-switch(config-if)#exit

Main-Campus-switch(config)#do wr

Main-Campus-switch(config)#int gig 1/0/3

Main-Campus-switch(config-if)#switchport mode access

Main-Campus-switch(config-if)#switchport access vlan 20

Main-Campus-switch(config-if)#exit

Main-Campus-switch(config)#do wr

Main-Campus-switch(config)#int gig 1/0/4

Main-Campus-switch(config-if)#switchport mode access

Main-Campus-switch(config-if)#switchport access vlan 30

Main-Campus-switch(config-if)#exit

Main-Campus-switch(config)#do wr

Main-Campus-switch(config)#int gig 1/0/5

Main-Campus-switch(config-if)#switchport mode access

Main-Campus-switch(config-if)#switchport access vlan 40

Main-Campus-switch(config-if)#exit

Main-Campus-switch(config)#do wr

Main-Campus-switch(config)#int gig 1/0/6

Main-Campus-switch(config-if)#switchport mode access

Main-Campus-switch(config-if)#switchport access vlan 50

Main-Campus-switch(config-if)#exit

Main-Campus-switch(config)#do wr

Main-Campus-switch(config)#int gig 1/0/7

Main-Campus-switch(config-if)#switchport mode access

Main-Campus-switch(config-if)#switchport access vlan 60

Main-Campus-switch(config-if)#exit

Main-Campus-switch(config)#do wr

Main-Campus-switch(config)#int gig 1/0/8

Main-Campus-switch(config-if)#switchport mode access

Main-Campus-switch(config-if)#switchport access vlan 70

Main-Campus-switch(config-if)#exit

Main-Campus-switch(config)#do wr

Main-Campus-switch(config)#int gig 1/0/9

Main-Campus-switch(config-if)#switchport mode access

Main-Campus-switch(config-if)#switchport access vlan 80

Main-Campus-switch(config-if)#exit

Main-Campus-switch(config)#do wr

Main-Campus-switch(config)#int gig 1/0/1

Main-Campus-switch(config-if)#switchport mode trunk

Main-Campus-switch(config-if)#exit

Main-Campus-switch(config)#do wr

Main-Campus-switch(config)#exit

**Admin-Switch:**

Switch>en

Switch#conf t

Switch(config)#hostname Admin-Switch

Admin-Switch(config)#vlan 10

Admin-Switch(config)#name Admin

Admin-Switch(config)#exit

Admin-Switch(config)#int gig 0/1

Admin-Switch(config-if)#switchport mode access

Admin-Switch(config-if)#switchport access vlan 10

Admin-Switch(config-if)#exit

Admin-Switch(config)#int range fa0/1-24

Admin-Switch(config-if-range)#switchport mode access

Admin-Switch(config-if-range)#switchport access vlan 10

Admin-Switch(config-if-range)#exit

Admin-Switch(config)#do wr

Admin-Switch(config)#exit

**HR-Switch:**

Switch>en

Switch#conf t

Switch(config)#hostname HR-Switch

HR-Switch(config)#vlan 20

HR-Switch(config-vlan)#name HR

HR-Switch(config-vlan)#exit

HR-Switch(config)#int gig 0/1

HR-Switch(config-if)#switchport mode access

HR-Switch(config-if)#switchport access vlan 20

HR-Switch(config-if)#exit

HR-Switch(config)#int range fa0/1-24

HR-Switch(config-if-range)#switchport mode access

HR-Switch(config-if-range)#switchport access vlan 20

HR-Switch(config-if-range)#exit

HR-Switch(config)#do wr

HR-Switch(config)#exit

**Finance-Switch:**

Switch>en

Switch#conf t

Switch(config)#hostname Finance-Switch

Finance-Switch(config)#vlan 30

Finance-Switch(config-vlan)#name Finance

Finance-Switch(config-vlan)#exit

Finance-Switch(config)#int gig 0/1

Finance-Switch(config-if)#switchport mode access

Finance-Switch(config-if)#switchport access vlan 30

Finance-Switch(config-if)#exit

Finance-Switch(config)#int range fa0/1-24

Finance-Switch(config-if-range)#switchport mode access

Finance-Switch(config-if-range)#switchport access vlan 30

Finance-Switch(config-if-range)#exit

Finance-Switch(config)#do wr

Finance-Switch(config)#exit

**Business-Switch:**

Switch>en

Switch#conf t

Switch(config)#hostname Business-Switch

Business-Switch(config)#vlan 40

Business-Switch(config-vlan)#name Business

Business-Switch(config-vlan)#exit

Business-Switch(config)#int gig 0/1

Business-Switch(config-if)#switchport mode access

Business-Switch(config-if)#switchport access vlan 40

Business-Switch(config-if)#exit

Business-Switch(config)#int range fa0/1-24

Business-Switch(config-if-range)#switchport mode access

Business-Switch(config-if-range)#switchport access vlan 40

Business-Switch(config-if-range)#exit

Business-Switch(config)#do wr

Business-Switch(config)#exit

**E&C-Switch:**

Switch>en

Switch#conf t

Switch(config)#hostname E&C-Switch

E&C-Switch(config)#vlan 50

E&C-Switch(config-vlan)#name E&C

E&C-Switch(config-vlan)#exit

E&C-Switch(config)#int gig 0/1

E&C-Switch(config-if)#switchport mode access

E&C-Switch(config-if)#switchport access vlan 50

E&C-Switch(config-if)#exit

E&C-Switch(config)#int range fa0/1-24

E&C-Switch(config-if-range)#switchport mode access

E&C-Switch(config-if-range)#switchport access vlan 50

E&C-Switch(config-if-range)#exit

E&C-Switch(config)#do wr

E&C-Switch(config)#exit

**A&D-Switch:**

Switch>en

Switch#conf t

Switch(config)#hostname A&D-Switch

A&D-Switch(config)#vlan 60

A&D-Switch(config-vlan)#name A&D

A&D-Switch(config-vlan)#exit

A&D-Switch(config)#int gig 0/1

A&D-Switch(config-if)#switchport mode access

A&D-Switch(config-if)#switchport access vlan 60

A&D-Switch(config-if)#exit

A&D-Switch(config)#int range fa0/1-24

A&D-Switch(config-if-range)#switchport mode access

A&D-Switch(config-if-range)#switchport access vlan 60

A&D-Switch(config-if-range)#exit

A&D-Switch(config)#do wr

A&D-Switch(config)#exit

**STD-LAB-M-Switch:**

Switch>en

Switch#conf t

Switch(config)#hostname STD-LAB-M-Switch

STD-LAB-M-Switch(config)#vlan 70

STD-LAB-M-Switch(config-vlan)#name STD-LAB-M

STD-LAB-M-Switch(config-vlan)#exit

STD-LAB-M-Switch(config)#int gig 0/1

STD-LAB-M-Switch(config-if)#switchport mode access

STD-LAB-M-Switch(config-if)#switchport access vlan 70

STD-LAB-M-Switch(config-if)#exit

STD-LAB-M-Switch(config)#int range fa0/1-24

STD-LAB-M-Switch(config-if-range)#switchport mode access

STD-LAB-M-Switch(config-if-range)#switchport access vlan 70

STD-LAB-M-Switch(config-if-range)#exit

STD-LAB-M-Switch(config)#do wr

STD-LAB-M-Switch(config)#exit

**IT-Switch:**

Switch>en

Switch#conf t

Switch(config)#hostname IT-Switch

IT-Switch(config)#vlan 80

IT-Switch(config-vlan)#name IT

IT-Switch(config-vlan)#exit

IT-Switch(config)#int gig 0/1

IT-Switch(config-if)#switchport mode access

IT-Switch(config-if)#switchport access vlan 80

IT-Switch(config-if)#exit

IT-Switch(config)#int range fa0/1-24

IT-Switch(config-if-range)#switchport mode access

IT-Switch(config-if-range)#switchport access vlan 80

IT-Switch(config-if-range)#exit

IT-Switch(config)#do wr

IT-Switch(config)#exit

**Branch-Campus-Router:**

Router>en

Router#conf t

Branch-Campus-Router(config)#int se 0/0/0

Branch-Campus-Router(config-if)#no shutdown

Branch-Campus-Router(config-if)#ip address 10.10.10.2 255.255.255.252

Branch-Campus-Router(config-if)#exit

Branch-Campus-Router(config)#int gig 0/0

Branch-Campus-Router(config-if)#no shutdown

Branch-Campus-Router(config-if)#exit

Branch-Campus-Router(config)#do wr

Branch-Campus-Router(config)#exit

**#Inter-VLAN Routing**

Branch-Campus-Router(config)#int gig0/0.90

Branch-Campus-Router(config-subif)#encapsulation dot1Q 90

Branch-Campus-Router(config-subif)#ip address 192.168.9.1 255.255.255.0

Branch-Campus-Router(config-subif)#exit

Branch-Campus-Router(config)#int gig0/0.100

Branch-Campus-Router(config-subif)#encapsulation dot1Q 100

Branch-Campus-Router(config-subif)#ip address 192.168.10.1 255.255.255.0

Branch-Campus-Router(config-subif)#exit

Branch-Campus-Router(config)#do wr

**##Configure DHCP Server**

Branch-Campus-Router(config)#service dhcp

Branch-Campus-Router(config)#ip dhcp pool Staff

Branch-Campus-Router(dhcp-config)#network 192.168.9.0 255.255.255.0

Branch-Campus-Router(dhcp-config)#default-router 192.168.9.1

Branch-Campus-Router(dhcp-config)#dns-server 192.168.9.1

Branch-Campus-Router(dhcp-config)#exit

Branch-Campus-Router(config)#ip dhcp pool STD-LAB-B

Branch-Campus-Router(dhcp-config)#network 192.168.10.0 255.255.255.0

Branch-Campus-Router(dhcp-config)#default-router 192.168.10.1

Branch-Campus-Router(dhcp-config)#dns-server 192.168.10.1

Branch-Campus-Router(dhcp-config)#exit

Branch-Campus-Router(config)#do wr

**#Exclude IP addresses for static devices**

Branch-Campus-Router(config)#ip dhcp excluded-address 192.168.9.1

Branch-Campus-Router(config)#ip dhcp excluded-address 192.168.10.1

Branch-Campus-Router(config)#do wr

**#Enable Routing Protocol**

Branch-Campus-Router(config)#router rip

Branch-Campus-Router(config-router)#version 2

Branch-Campus-Router(config-router)#network 192.168.9.0

Branch-Campus-Router(config-router)#network 192.168.10.0

Branch-Campus-Router(config-router)#network 10.10.10.0

Branch-Campus-Router(config-router)#exit

Branch-Campus-Router(config)#do wr

Branch-Campus-Router(config)#exit

**Branch-Campus-Switch:**

Switch>en

Switch#conf t

Switch(config)#hostname Branch-Campus-Switch

Branch-Campus-Switch(config)#vlan 90

Branch-Campus-Switch(config-vlan)#name Staff

Branch-Campus-Switch(config-vlan)#exit

Branch-Campus-Switch(config)#vlan 100

Branch-Campus-Switch(config-vlan)#name STD-LAB-B

Branch-Campus-Switch(config-vlan)#exit

Branch-Campus-Switch(config)#int gig 1/0/2

Branch-Campus-Switch(config-if)#switchport mode access

Branch-Campus-Switch(config-if)#switchport access vlan 90

Branch-Campus-Switch(config-if)#exit

Branch-Campus-Switch(config)#do wr

Branch-Campus-Switch(config)#int gig 1/0/3

Branch-Campus-Switch(config-if)#switchport mode access

Branch-Campus-Switch(config-if)#switchport access vlan 100

Branch-Campus-Switch(config-if)#exit

Branch-Campus-Switch(config)#do wr

Branch-Campus-Switch(config)#int gig 1/0/1

Branch-Campus-Switch(config-if)#switchport mode trunk

Branch-Campus-Switch(config-if)#exit

Branch-Campus-Switch(config)#do wr

Branch-Campus-Switch(config)#exit

**Staff-Switch:**

Switch>en

Switch#conf t

Switch(config)#hostname Staff-Switch

Staff-Switch(config)#vlan 90

Staff-Switch(config-vlan)#name Staff

Staff-Switch(config-vlan)#exit

Staff-Switch(config)#int gig 0/1

Staff-Switch(config-if)#switchport mode access

Staff-Switch(config-if)#switchport access vlan 90

Staff-Switch(config-if)#exit

Staff-Switch(config)#int range fa0/1-24

Staff-Switch(config-if-range)#switchport mode access

Staff-Switch(config-if-range)#switchport access vlan 90

Staff-Switch(config-if-range)#exit

Staff-Switch(config)#do wr

Staff-Switch(config)#exit

**STD-LAB-B-Switch:**

Switch>en

Switch#conf t

Switch(config)#hostname STD-LAB-B-Switch

STD-LAB-B-Switch(config)#vlan 100

STD-LAB-B-Switch(config-vlan)#name STD-LAB-B

STD-LAB-B-Switch(config-vlan)#exit

STD-LAB-B-Switch(config)#int gig 0/1

STD-LAB-B-Switch(config-if)#switchport mode access

STD-LAB-B-Switch(config-if)#switchport access vlan 100

STD-LAB-B-Switch(config-if)#exit

STD-LAB-B-Switch(config)#int range fa0/1-24

STD-LAB-B-Switch(config-if-range)#switchport mode access

STD-LAB-B-Switch(config-if-range)#switchport access vlan 100

STD-LAB-B-Switch(config-if-range)#exit

STD-LAB-B-Switch(config)#do wr

STD-LAB-B-Switch(config)#exit

**Cloud-Router:**

Router>en

Router#conf t

Router#hostname

Cloud-Router

Cloud-Router(config)#int se 0/0/0

Cloud-Router(config-if)#no shutdown

Cloud-Router(config-if)#ip address 10.10.10.6 255.255.255.252

Cloud-Router(config-if)#exit

Cloud-Router(config)#int gig 0/0

Cloud-Router(config-if)#no shutdown

Cloud-Router(config-if)#ip address 20.0.0.1 255.255.255.252

Cloud-Router(config-if)#exit

Cloud-Router(config)#do wr

Cloud-Router(config)#exit

**##Enable Routing Protocol**

Cloud-Router(config)#router rip

Cloud-Router(config-router)#version 2

Cloud-Router(config-router)#network 20.0.0.0

Cloud-Router(config-router)#network 10.10.10.4

Cloud-Router(config-router)#exit

Cloud-Router(config)#do wr

Cloud-Router(config)#exit

**Mail-Server:**

**Web-Server:**

**DNS-Server:**

**FTP-Server:**

**Result**







