



# **American International University-Bangladesh (AIUB)**

Faculty of Science and Technology (FST)  
Department of Computer Science (CS)  
Undergraduate Program

**Course Code and Title: CSC 3116: Computer  
Networks**

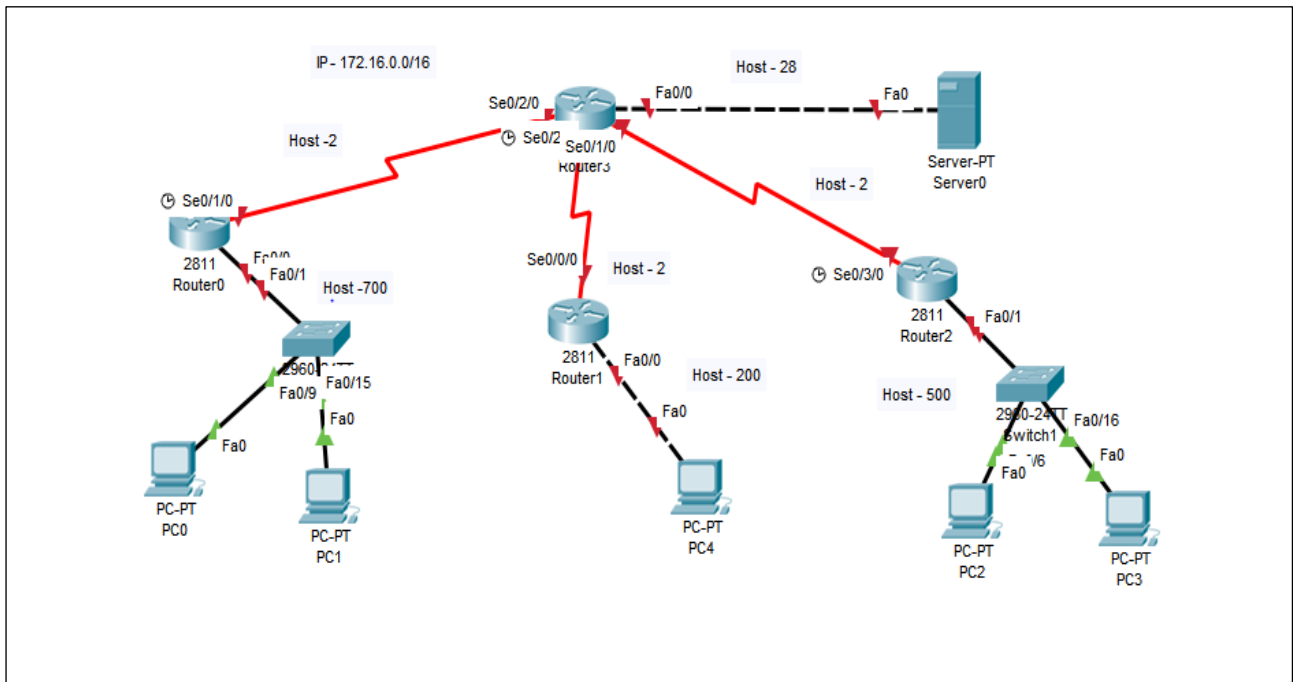
**Credit: 3**

## **Lab Manual**

**Title: Configuration of RIP routing protocol version 2 with VLSM**

**Software: Cisco Packet Tracer**

## Network Design:



### Question:

IP address: 172.16.0.0/16; Default gateway –last valid IP of the range; Routing algorithm (Rip v2)

**Router 0:** Host 700; **Router 1:** Host 200; **Router 2:** Host 500; **Router 3:** Host 28

**Serial:** router 0 to router 3 -1<sup>st</sup> subnet; router 1 to router 3 -2<sup>nd</sup> subnet; router 2 to router 3 -3<sup>rd</sup> subnet

## **Solution**

Performing subnetting for the given IP block:

	How many bits to borrow	No. of allocated IPs	No. of host bits No. of net bits	Subnet mask	Allocated IP range
Router 0: Host 700	10 bits	1024	Host: 10 bits Net: 22 bits	255.255.252.0	172.16.0.0/22 172.16.3.255/22
Router 2: Host 500	9 bits	512	Host: 9 bits Net: 23 bits	255.255.254.0	172.16.4.0/23 172.16.5.255/23
Router 1: Host 200	8 bits	256	Host: 8 bits Net: 24 bits	255.255.255.0	172.16.6.0/24 172.16.6.255/24
Router 3: Host 28	5 bits	32	Host: 5 bits Net: 27 bits	255.255.255.224	172.16.7.0/27 172.16.7.31/27
R0 to R3: Host 2+2	2 bits	4	Host: 2 bits Net: 30 bits	255.255.255.252	172.16.7.32/30 172.16.7.35/30
R1 to R3: Host 2+2	2 bits	4	Host: 2 bits Net: 30 bits	255.255.255.252	172.16.7.36/30 172.16.7.39/30
R2 to R3: Host 2+2	2 bits	4	Host: 2 bits Net: 30 bits	255.255.255.252	172.16.7.40/30 172.16.7.43/30

## **Configuration:**

### **Router 0**

Router>en

Router#conf t

Router(config)#int f0/0

Router(config-if)#ip address 172.16.3.254 255.255.252.0

Router(config-if)#no shut

Router(config-if)#exit

Router(config)#int s0/1/0

Router(config-if)#ip address 172.16.7.33 255.255.255.252

Router(config-if)#no shut

Router(config-if)#exit

Router(config)#router rip

Router(config-router)# version 2

Router(config-router)#network 172.16.0.0

Router(config-router)#network 172.16.7.32

Router(config-router)# no auto-summary

Router(config-router)#exit

## **Router 1**

Router>en

Router#conf t

Router(config)#int f0/0

Router(config-if)#ip address 172.16.6.254 255.255.255.0

Router(config-if)#no shut

Router(config-if)#exit

Router(config)#int s0/0/0

Router(config-if)#ip address 172.16.7.37 255.255.255.252

Router(config-if)#no shut

Router(config-if)#exit

```
Router(config)#router rip
Router(config-router)# version 2
Router(config-router)#network 172.16.6.0
Router(config-router)#network 172.16.7.36
Router(config-router)# no auto-summary
```

## **Router 2**

```
Router>en
Router#conf t

Router(config)#int f0/0
Router(config-if)#ip address 172.16.5.254 255.255.254.0
Router(config-if)#no shut
Router(config-if)#exit

Router(config)#int s0/3/0
Router(config-if)#ip address 172.16.7.41 255.255.255.252
Router(config-if)#no shut
Router(config-if)#exit

Router(config)#router rip
Router(config-router)# version 2
Router(config-router)#network 172.16.4.0
```

Router(config-router)#network 172.16.7.40

Router(config-router)# no auto-summary

Router(config-router)#exit

### **Router 3**

Router>en

Router#conf t

Router(config)#int f0/0

Router(config-if)#ip address 172.16.7.30 255.255.255.224

Router(config-if)#no shut

Router(config-if)#exit

Router(config)#int s0/2/0

Router(config-if)#ip address 172.16.7.34 255.255.255.252

Router(config-if)#no shut

Router(config-if)#exit

Router(config)#int s0/2/1

Router(config-if)#ip address 172.16.7.38 255.255.255.252

Router(config-if)#no shut

Router(config-if)#exit

Router(config)#int s0/1/0

Router(config-if)#ip address 172.16.7.42 255.255.255.252

Router(config-if)#no shut

Router(config-if)#exit

Router(config)#router rip

Router(config-router)# version 2

Router(config-router)#network 172.16.7.0

Router(config-router)#network 172.16.7.32

Router(config-router)#network 172.16.7.36

Router(config-router)#network 172.16.7.40

Router(config-router)# no auto-summary