

Step-1: Subnet Calculation

Network Name	Network Address	Host Per Subnet	Subnet Number for Use
LAN#1	192.168.1.0/24	For 10 Hosts	Use Subnet# 10 : 192.168.1.160/28
LAN#2	192.168.2.0/24	For 15 Hosts	Use Subnet# 06 : 192.168.2.192/27
LAN#3	192.168.3.0/24	For 50 Hosts	Use Subnet# 02 : 192.168.3.128/26
LAN#4	192.168.4.0/24	For 31 Hosts	Use Subnet# 03 : 192.168.4.192/26
LAN#5	192.168.5.0/24	For 20 Hosts	Use Subnet# 05 : 192.168.5.160/27
LAN#6	192.168.6.0/24	For 100 Hosts	Use Subnet# 01 : 192.168.6.128/25

Step-2: Set The Router Hostname ISP, R1, R2, R3, R4 and R5

```
Router(config)#hostname ISP
Router(config)#hostname R1
Router(config)#hostname R2
Router(config)#hostname R3
Router(config)#hostname R4
Router(config)#hostname R5
```

Step-3: IP Address Configuration

```
ISP(config)#interface Serial0/0/0
ISP(config-if)#ip address 192.168.100.1 255.255.255.252
ISP(config-if)#no shutdown
ISP(config-if)#exit
```

```
R1(config)#interface Serial0/1/0
R1(config-if)#ip address 192.168.100.2 255.255.255.252
R1(config-if)#no shutdown
R1(config-if)#exit
```

```
R1(config)#interface Serial0/0/0
R1(config-if)#ip address 192.168.102.1 255.255.255.252
R1(config-if)#no shutdown
R1(config-if)#exit
```

```
R1(config)#interface Serial0/0/1
R1(config-if)#ip address 192.168.104.1 255.255.255.252
R1(config-if)#no shutdown
R1(config-if)#exit
```

```
R2(config)#interface Serial0/0/0
R2(config-if)#ip address 192.168.103.1 255.255.255.252
R2(config-if)#no shutdown
R2(config-if)#exit
```

```
R2(config)#interface GigabitEthernet0/0
R2(config-if)#ip address 192.168.3.129 255.255.255.192
```

```
R2(config-if)#no shutdown
R2(config-if)#exit
```

```
R2(config)#interface Serial0/0/1
R2(config-if)#ip address 192.168.102.2 255.255.255.252
R2(config-if)#no shutdown
R2(config-if)#exit
```

```
-----
R3(config)#interface GigabitEthernet0/0
R3(config-if)#ip address 192.168.1.161 255.255.255.240
R3(config-if)#exit
```

```
R3(config)#interface GigabitEthernet0/1
R3(config-if)#ip address 192.168.2.193 255.255.255.224
R3(config-if)#exit
```

```
R3(config)#R3(config)#interface Serial0/0/0
R3(config-if)#ip address 192.168.103.2 255.255.255.252
R3(config-if)#exit
```

```
-----
R4(config)#interface GigabitEthernet0/0
R4(config-if)#ip address 192.168.6.129 255.255.255.128
R4(config-if)#no shutdown
R4(config-if)#exit
```

```
R4(config)#interface Serial0/0/0
R4(config-if)#ip address 192.168.105.1 255.255.255.252
R4(config-if)#no shutdown
R4(config-if)#
```

```
R4(config)#interface Serial0/0/1
R4(config-if)#ip address 192.168.104.2 255.255.255.252
R4(config-if)#exit
```

```
-----
R5(config)#interface Serial0/0/0
R5(config-if)#ip address 192.168.105.2 255.255.255.252
R5(config-if)#no shutdown
R5(config-if)#exit
```

```
R5(config)#interface GigabitEthernet0/0
R5(config-if)#ip address 192.168.4.193 255.255.255.192
R5(config-if)#no shutdown
R5(config-if)#exit
```

```
R5(config)#interface GigabitEthernet0/1
R5(config-if)#ip address 192.168.5.161 255.255.255.224
R5(config-if)#no shutdown
R5(config-if)#
```

Step-4: Routing Configuration

1. Static Routing

```
ISP(config)#ip route 192.168.1.160 255.255.255.240 192.168.100.2
ISP(config)#ip route 192.168.2.192 255.255.255.224 192.168.100.2
ISP(config)#ip route 192.168.3.128 255.255.255.192 192.168.100.2
ISP(config)#ip route 192.168.4.192 255.255.255.192 192.168.100.2
ISP(config)#ip route 192.168.5.160 255.255.255.224 192.168.100.2
ISP(config)#ip route 192.168.6.128 255.255.255.128 192.168.100.2
```

2. Default Static Routing

```
R1(config)#ip route 0.0.0.0 0.0.0.0 192.168.100.1
R2(config)#ip route 0.0.0.0 0.0.0.0 192.168.102.1
R3(config)#ip route 0.0.0.0 0.0.0.0 192.168.103.1
R4(config-if)#ip route 0.0.0.0 0.0.0.0 192.168.104.1
R5(config-if)#ip route 0.0.0.0 0.0.0.0 192.168.105.1
```

3. Dynamic Routing- RIP

```
R1(config)#router rip
R1(config-router)#net 192.168.100.0
R1(config-router)#net 192.168.102.0
R1(config-router)#net 192.168.104.0
R1(config-router)#exit
```

```
-----
R2(config)#router rip
R2(config-router)#network 192.168.103.0
R2(config-router)#network 192.168.102.0
R2(config-router)#network 192.168.3.128
R2(config-router)#exit
R2(config)#
```

```
-----
R3(config)#router rip
R3(config-router)#network 192.168.1.160
R3(config-router)#net 192.168.2.192
R3(config-router)#net 192.168.103.0
R3(config-router)#ex
R3(config-router)#exit
R3(config)#
```

```
-----
R4(config)#router rip
R4(config-router)#net 192.168.6.128
R4(config-router)#net 192.168.104.0
R4(config-router)#net 192.168.105.0
R4(config-router)#exit
```

```
-----
R5(config)#router rip
R5(config-router)#net 192.168.4.192
R5(config-router)#net 192.168.5.160
R5(config-router)#net 192.168.105.0
R5(config-router)#exit
```

```
=====END
```