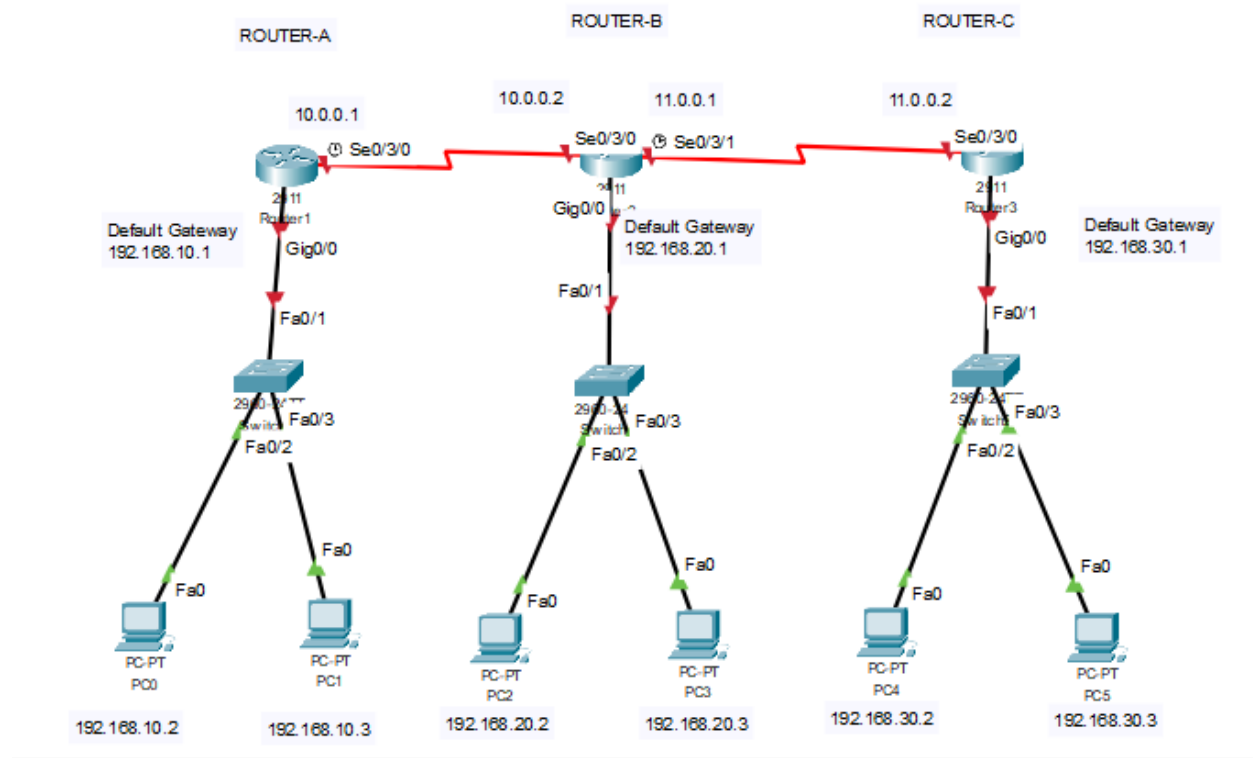# RIP Routing Lab Walkthrough

## Topology Overview



- **Router-A**: LAN - 192.168.10.0/24
- **Router-B**: LAN - 192.168.20.0/24
- **Router-C**: LAN - 192.168.30.0/24
- **Router-A to Router-B**: Serial Link - 10.0.0.0/30
- **Router-B to Router-C**: Serial Link - 11.0.0.0/30

## IP Addressing Table

| Device | Interface | IP Address | Subnet Mask |
|--------|-----------|------------|-------------|
| Router-A | Gig0/0 | 192.168.10.1 | 255.255.255.0 |
| Router-A | Serial0/3/0 | 10.0.0.1 | 255.255.255.252 |
| Router-B | Gig0/0 | 192.168.20.1 | 255.255.255.0 |

| Router-B | Serial0/3/0 | 10.0.0.2 | 255.255.255.252 |
|----------|-------------|----------|------------------|
| Router-B | Serial0/3/1 | 11.0.0.1 | 255.255.255.252 |
| Router-C | Gig0/0 | 192.168.30.1 | 255.255.255.0 |
| Router-C | Serial0/3/0 | 11.0.0.2 | 255.255.255.252 |
| PC0 | NIC | 192.168.10.2 | 255.255.255.0 |
| PC1 | NIC | 192.168.10.3 | 255.255.255.0 |
| PC2 | NIC | 192.168.20.2 | 255.255.255.0 |
| PC3 | NIC | 192.168.20.3 | 255.255.255.0 |
| PC4 | NIC | 192.168.30.2 | 255.255.255.0 |
| PC5 | NIC | 192.168.30.3 | 255.255.255.0 |

# Step-by-Step Configuration

## 1. Basic Configuration (All Routers)

```
enable
configure terminal
hostname ROUTER-X
no ip domain-lookup
```

Replace ROUTER-X with A, B, or C accordingly.

## 2. Interface IP Address Configuration

### Router-A

```
interface GigabitEthernet0/0
 ip address 192.168.10.1 255.255.255.0
 no shutdown

interface Serial0/3/0
 ip address 10.0.0.1 255.255.255.252
 no shutdown

Copy running-config startup-config
```

### Router-B

```
interface GigabitEthernet0/0
 ip address 192.168.20.1 255.255.255.0
 no shutdown

interface Serial0/3/0
 ip address 10.0.0.2 255.255.255.252
 no shutdown

interface Serial0/3/1
 ip address 11.0.0.1 255.255.255.252
 no shutdown
```

### Router-C

```
interface GigabitEthernet0/0
 ip address 192.168.30.1 255.255.255.0
 no shutdown

interface Serial0/3/0
 ip address 11.0.0.2 255.255.255.252
 no shutdown
```

## 3. RIP Configuration (RIPv1)

### Router-A

```
router rip
version 1
network 192.168.10.0
```

```
network 10.0.0.0
```

### *Router-B*

```
router rip
version 1
network 192.168.20.0
network 10.0.0.0
network 11.0.0.0
```

### *Router-C*

```
router rip
version 1
network 192.168.30.0
network 11.0.0.0
```

After the completion of configuration it is recommended to save the configuration in NVRAM with command "write" or "copy running-config startup-config"

Note: RIPv1 does not support classless routing or discontinuous networks. Ensure all subnets follow classful boundaries.

## 4. Verification Commands

```
show ip route
show ip protocols
ping <remote-IP>
```

Confirm that each router has routes to all LAN networks and end-to-end connectivity between PCs is successful.

**End of Document**