

## IP Addressing and Subnet Basics

### Objective

Practice manual IP addressing and demonstrate that devices from different subnets cannot communicate without routing.

### Topology

- >  $5 \times$  PC
- >  $1 \times$  Switch

### IP Addressing

#### Subnet 1

**Network:** 192.168.1.0/24

**Mask:** 255.255.255.0

Device	IP Address
PC1	192.168.1.10
PC2	192.168.1.20
PC3	192.168.1.30
PC4	192.168.1.40

#### Subnet 2

**Network:** 192.168.2.0/24

**Mask:** 255.255.255.0

Device	IP Address
PC5	192.168.2.20

### Tasks

- Assign IP addresses manually
- Verify connectivity within Subnet 1
- Attempt to ping PC5

- Explain why communication fails

## Expected Result

- PCs in Subnet 1 can ping each other
- PC5 is unreachable due to being in a different subnet
- A router is required for inter-subnet communication

