

IP Addressing and Subnet Basics

Objective

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

Topology

- > 5 × PC
- > 1 × 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

