

STAR TOPOLOGY USING CISCO PACKET TRACER

Introduction

A star topology is a network arrangement in which all end devices are connected to a single central device, usually a switch. In Cisco Packet Tracer, this topology can be easily created and demonstrated using basic networking devices and connections.

Steps to Achieve Star Topology in Cisco Packet Tracer

1. Placement of the Central Device

First, Cisco Packet Tracer is opened and a switch (for example, a 2960 switch) is selected from the network devices menu. This switch is placed at the center of the workspace. The switch serves as the central connection point of the network, which is a key feature of a star topology.

2. Addition of End Devices

End devices such as personal computers (PCs) are selected from the end devices menu and placed around the central switch. Each PC represents a node in the network.

3. Connecting the Devices

Each PC is connected directly to the switch using a copper straight-through cable. The cable is connected from the FastEthernet port of the PC to different FastEthernet ports on the switch. No PC is connected directly to another PC. This direct connection of all devices to a single central switch forms the physical star shape.

4. IP Address Configuration

IP addresses are assigned to all the PCs within the same network range using the IP configuration option on each PC. This allows the devices to communicate logically over the network.

5. Testing the Network

The network is tested using the ping command from one PC to another. Successful communication confirms that all data transmission passes through the central switch, which is characteristic of a star topology.

Conclusion

In Cisco Packet Tracer, a star topology is achieved by connecting multiple end devices individually to a central switch using straight-through cables. All communication between devices passes through the switch, clearly demonstrating the star topology structure.