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SUBNETTING

Aim:

Implementation of SUBNETTING in CISCO PACKET TRACER Simulator.

classless IP Subnetting is a technique that allows for more efficient use of IP addresses by allowing for subnet masks that are not just default masks for each IP class. This means that we can divide our IP address space into smaller subnets, which can be useful when we have a limited no of addresses but need to create multiple networks.

creating a Network Topology

The first step is to create a network topology in Packet Tracer. For that, select the "New" button in the top left corner, then select "Network" and "Generic". This will create a blank Network topology that we to add devices.

Adding the Devices.

Here, we add routers, switches and PCs. Select the Device & add it onto the network topology. Then, connect the devices by dragging a cable from one device's port to another device's port.

To subnet the network address of $192.168.1.0/24$ to provide enough space for atleast 5 addresses for end devices, the switch, and routers, we can use a 127 Subnet mask.

Configuring the Devices:

Now that we have added our devices and connected them, we can start configure them, we will start by configuring the router, the switch, and then the PCs.

Testing the Network:

Now we can test the network. Open a command prompt on each PC and try to ping the other PC. If the ping is successful, then the network is functioning properly.

Student observation:

1) work down your understanding of subnetting

Subnetting is dividing a larger network into smaller sub network for efficient IP usage and management.

2) what is the advantage of implementing subnetting within network

It improves IP utilization, reduces broadcast traffic, enhances security, & makes networks easier to manage.

Result

Subnetting was successfully implemented in Cisco Packet Tracer Network devices communicated properly using the assigned subnetted IP addresses.

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