

Practical 10 : Understand basic networking concept using Packet Tracer.

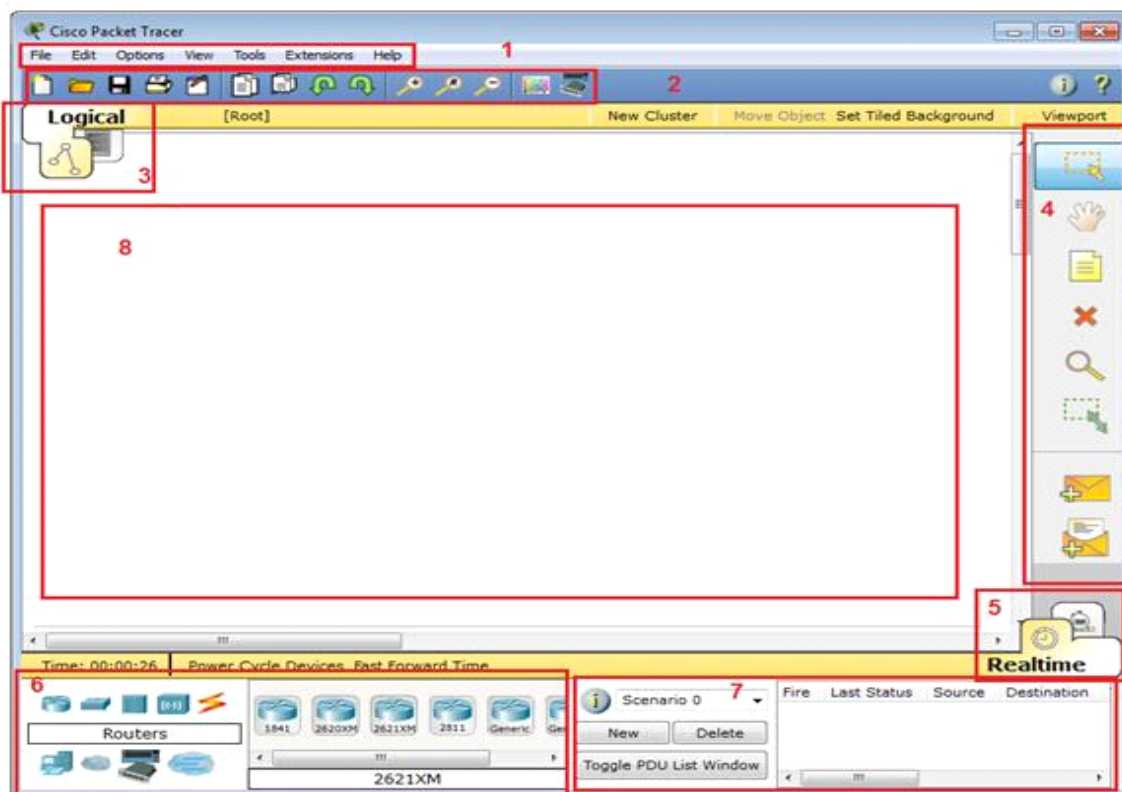
Software requirements: cisco packet tracer

Knowledge requirements: basic of knowledge network devices.

Question:

What is cisco packet tracer?

Cisco Packet Tracer is a powerful network simulation program that allows students to experiment with network behavior and ask “what if” questions. As an integral part of the Networking Academy comprehensive learning experience, Packet Tracer provides simulation, visualization, authoring, assessment, and collaboration capabilities to facilitate the teaching and learning of complex technology concepts.



Advantages of cisco packet tracer:

It can be used anywhere, you don't have to carry it. Once you install it in your laptop, it can be carried even in a USB.

The noise level is minimum to none and the consumption of electricity is also less.

The major advantage is “sim mode”. This is not available in real gear.

Data Communication And Networking Practicals

Disadvantages of cisco packet tracer:

There is “lack of commands” in “Frame Relay”

With regard to ‘OSPF’, you have no support for debugging “OSPF packets and Hellos”

With regard to “Switching”, It does accept “Etherchannel” on the layers of the switches

It affects the ‘STP’ port very frequently that it leads to loops.

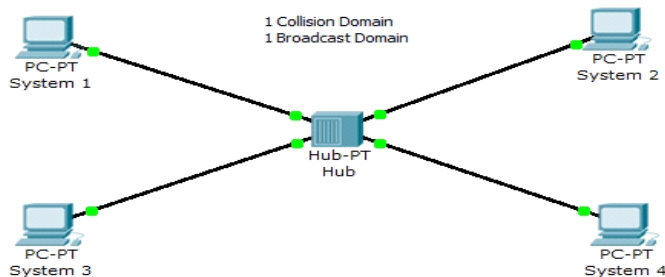
there are some devices related to network

HUB:

A hub, in the context of networking, is a hardware device that relays communication data. A hub sends data packets (frames) to all devices on a network, regardless of any MAC addresses contained in the data packet.

Types of Hub

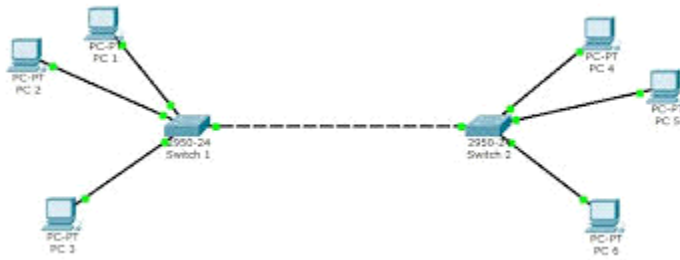
- **Active Hub :-** These are the hubs which have their own power supply and can clean, boost and relay the signal along the network. It serves both as a repeater as well as a wiring center. These are used to extend maximum distance between nodes.
- **Passive Hub :-** These are the hubs which collect wiring from nodes and power supply from active hub. These hubs relay signals onto the network without cleaning and boosting them and can't be used to extend distance between nodes.



Switch:

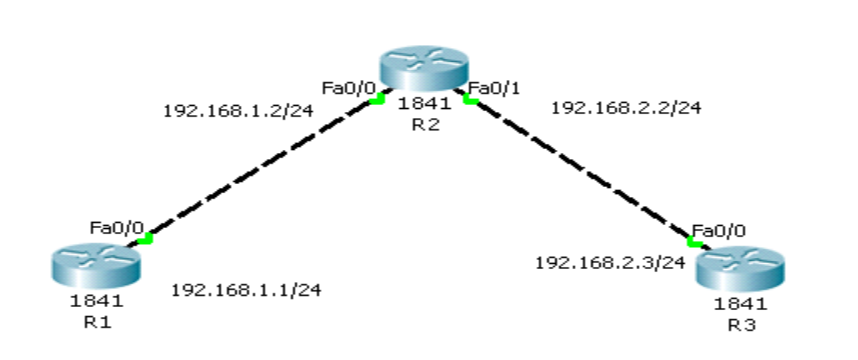
A network switch (also called switching hub, bridging hub, officially MAC bridge) is a computer networking device that connects devices on a computer network by using packet switching to receive, process, and forward data to the destination device. Switches are similar to hubs, only smarter. A hub simply connects all the nodes on the network -- communication is essentially in a haphazard manner with any device trying to communicate at any time, resulting in many collisions. A switch, on the other hand, creates an electronic tunnel between source and destination ports for a split second that no other traffic can enter. This results in communication without collisions.

Data Communication And Networking Practicals



Router:

A router is a device like a switch that routes data packets based on their IP addresses. Router is mainly a Network Layer device. Routers normally connect LANs and WANs together and have a dynamically updating routing table based on which they make decisions on routing the data packets. Router divide broadcast domains of hosts connected through it.



Question Answer

1.What is Packet Tracer and explain its advantages?

Ans. Packet tracer provides multiple opportunities for instructors to create different networking scenarios to explain different networking concepts. Since packet tracer is not a replacement of real equipment but it helps a student to do lot of practice and gain lot of confidence so that it's easy to work on a real network.

2. Use of cisco packet tracer?

Ans. Packet Tracer is a cross-platform visual simulation tool designed by Cisco Systems that allows users to create network topologies and imitate modern computer networks. The software allows users to simulate the configuration of Cisco routers and switches using a simulated command line interface.

Conclusion:

Data Communication And Networking Practicals

we studied about cisco packet tracer and concept of network.

cisco packet tracer is used for implement any type of network which is not possible practically easily so we can use it for the same...