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**Welcome
To
Network for you
Function of Network
Components**



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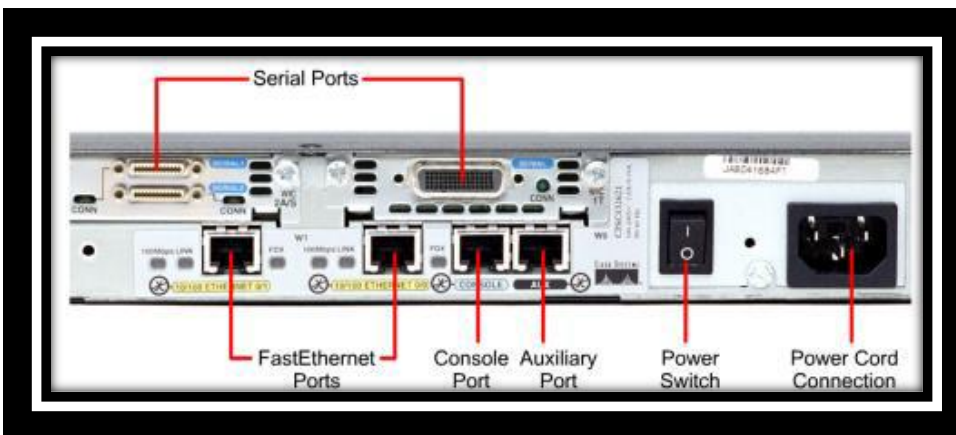


CISCO Router:

- Router is a device work on Layer 3 or Network layer of OSI Model.
- Router is use to make communication between **two or more different network**.
- Router is use to control broadcast and it is use to connect LAN network with WAN.
- Router is a device which select best path on the basis of routing protocol.
- Router perform routing that is static or dynamic and also other various function such as NAT, ACL and Intervlan routing etc.
- Router is a device which makes communication between two or more different network.
- Routers interconnect different networks or in simple way we can say switch is use to connect devices with a network whereas router is use to connect different networks.
- It works on Layer 3 (Network Layer).
- It chooses the best path for packet transfer.
- It performs Routing.



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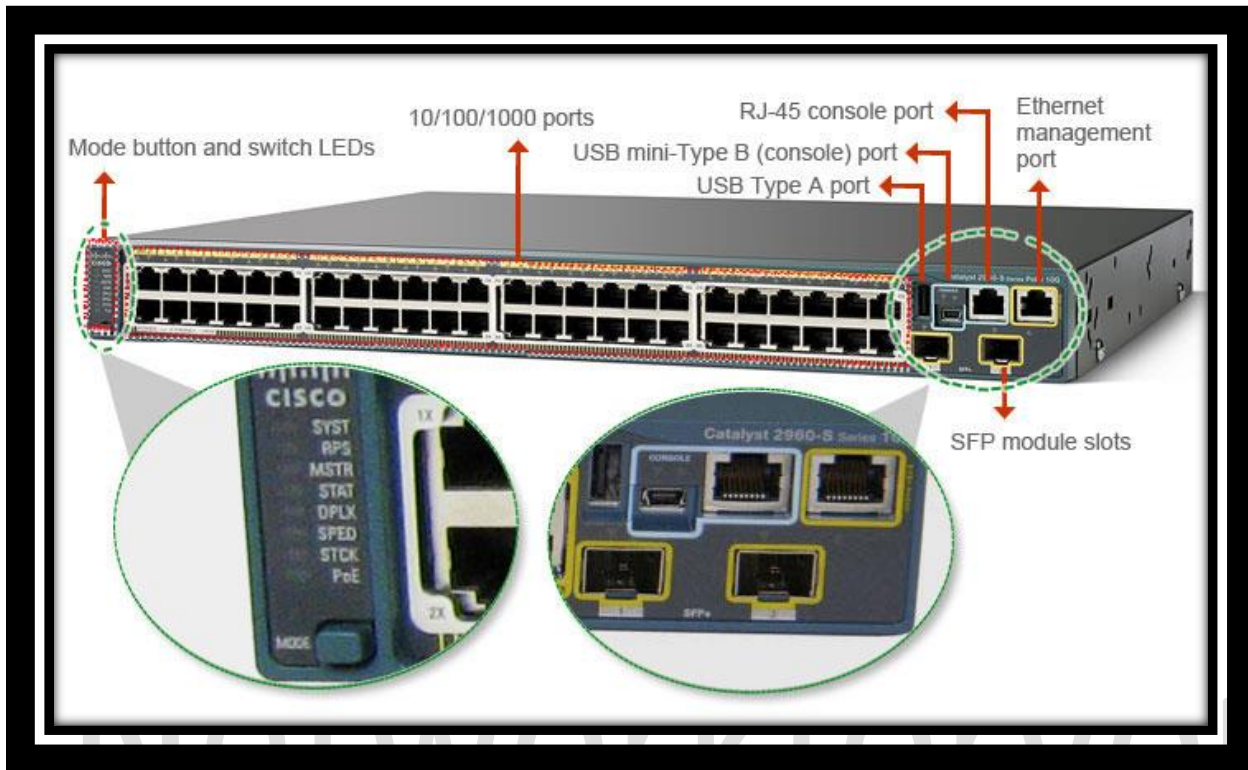
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CISCO Switch:

- Switch is a device used to connect multiple systems in LAN.
- Switch is a device used to connect **same network** where are Router is a device used to connect two or more different Network.
- We have type of Switch that is Manageable and Unmanageable Switch.
- In Manageable Switch we can assign IP address and Create Vlan we can do operation and it have Console port.
- Un Manageable Switch In this type of switch we cannot assign IP address and it is not having Console Port. In our Syllabus we are going to discuss Manageable switches.
- We have two type of switch that is Layer 2 and Layer 3.
- Switches which operate at Network Layer 3 called Layer 3 or Multilayer Switches.
- Switches which operate at Data Link Layer of OSI Model it is called Layer 2 Switches.
- Basic Function of CISCO Switch is to forward Layer 2 packets.
- Switch Forwards Ethernet Frames from Sources device to destination device.
- As we know without switch we cannot connect multiple devices so we can say switch is very important device in networking to connect multiple devices in a network.
- As we know we can Managed switch locally or remotely? If you want to connect to Switch Remotely then we will use SSH or Telnet to connect switch via remotely.
- CISCO IOS is proprietary Operating System that CISCO routers and switches run on it.





Layer 2 Switch:

- The Terms Layers 2 and 3 adopted from OSI Model.
- The layer 2 provides direct data transfer between two devices within a LAN.
- Layer 2 switch functions by keeping a table of MAC address (Media Access Control).
- Uses MAC addresses to facilitate communicate within the same Network.
- It send packet to destination on the basis of MAC address and it work with in that MAC address only.
- Switching at layer 2 is quite fast as they do not look at the layer 3 portion.

Layer 3/ Multilayer Switch:

- It operates on Layer 3 (i.e. Network Layer) of OSI Model.
- Layer 3 switch also called Multilayer Switch.
- Can perform functionality of both Layer 2 and Layer 3 switch.
- Perform the routing of data packets using IP addresses.
- Functions of Layer 3 switch combine some of a Layer 2 Switch and Some of a Router.
- The Main different between layer 2 and layer 3 is the routing function.
- A layer 3 or Multilayer switch can do all the jobs that a layer 2 switch does not.

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2960-24TT
Switch0



3650-24PS
Multilayer Sw itch0

Firewall Technologies:

- The Firewall is the Battier between a trusted and untrusted network, used between LAN and WAN Network.
- The word firewall commonly describes a system or device.
- A Firewall is security devices used to stop or mitigate unauthorized access.
- The only traffic allowed on the network is defined via firewall policies.
- Firewall grants or rejects access to traffic flows between untrusted and trusted zone.
- A firewall monitors incoming and outgoing network related traffic.
- A firewall can be hardware, software or both or can be cloud based firewall.
- Firewall decides to allow or block specific traffic based on defined set of security rules.
- The first generation firewall technology consisted of packet filters.
- The next generation Firewall (NGFW) is a part of the third-generation firewall technology, combining a traditional firewall with other network devices filtering functionalities, such as an application firewall using in line deep packet inspection (DPI) and an Intrusion prevention system (IPS).



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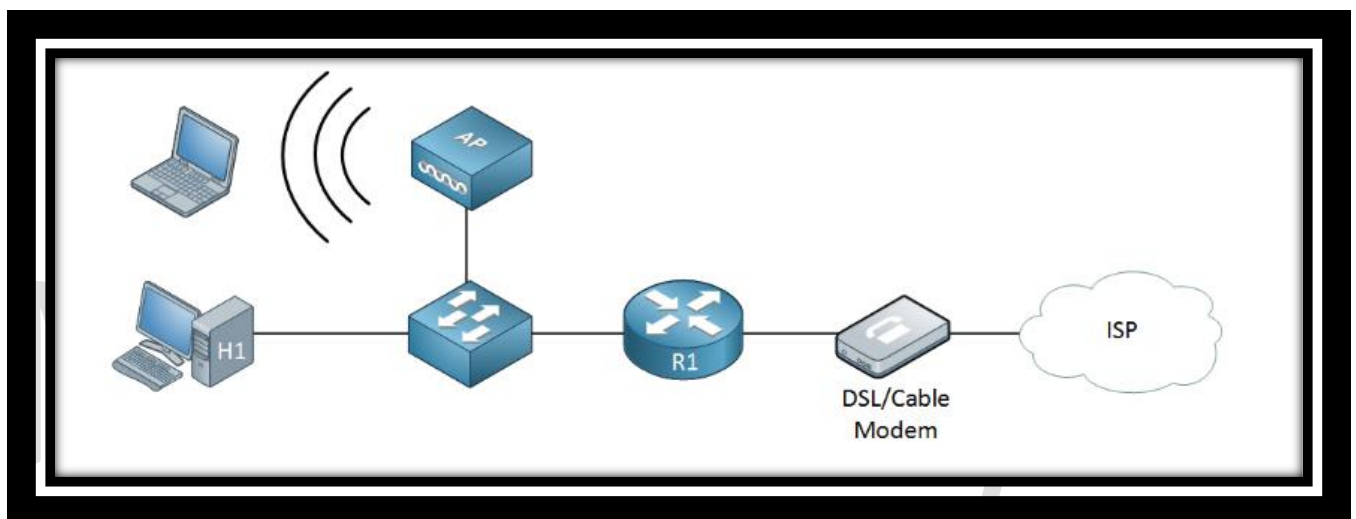
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Access Point:

- Access Point is a device that creates wireless local area network or WLAN.
- Access Point is a device creates WLAN usually in an office or large building.
- Access Point is the device that allows multiple wireless devices to connect with each other.
- Access Point is a networking device that is used to form wireless local area network.
- An access point can also be used to extend the wired network to the wireless devices.
- Wireless network are suitable for those places where cables are difficult to install.
- Access point is Hardware device used to connect computer, Laptops and mobile with each other.



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Wireless LAN Control:

- WLAN Controller manages wireless network access point that allows wireless devices.
- WLAN Controller automatically handles that configuration of wireless Access Points.
- WLAN Controller is used to manage Access point from one central point.



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Endpoint:

- Endpoint is nothing but end devices like PC, Laptop, Server, Printers and Mobiles etc.
- Endpoint is used by end users to access network and run network applications and other.



Servers:

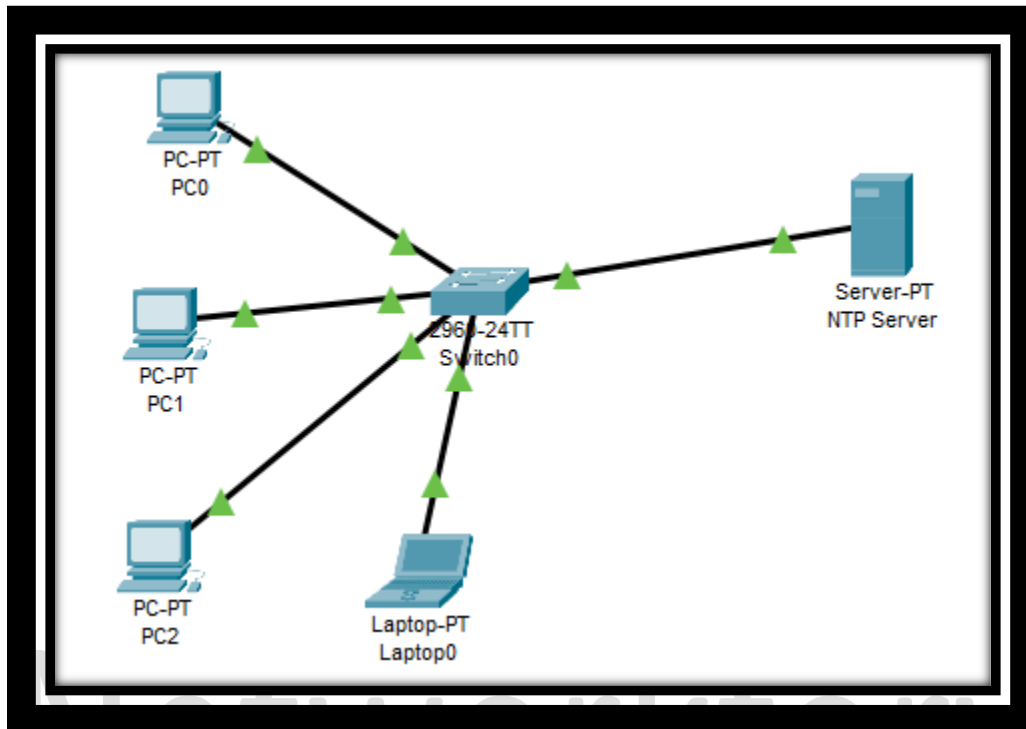
- Server is a piece of computer hardware or software that provides functionality for other program or devices called clients. Or other words we can say A server is a computer program or device that provides a service to another computer program and its user also known as clients.
- Server is system that provides resources, data, services, or programs to other computers.
- Server can provide various functionalities like centralized access to resources and stored data.
- Servers are computer that provide information to end devices such as web.



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