

Examrace

Router Computer Network: Computer Science YouTube Lecture Handouts

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Highlights

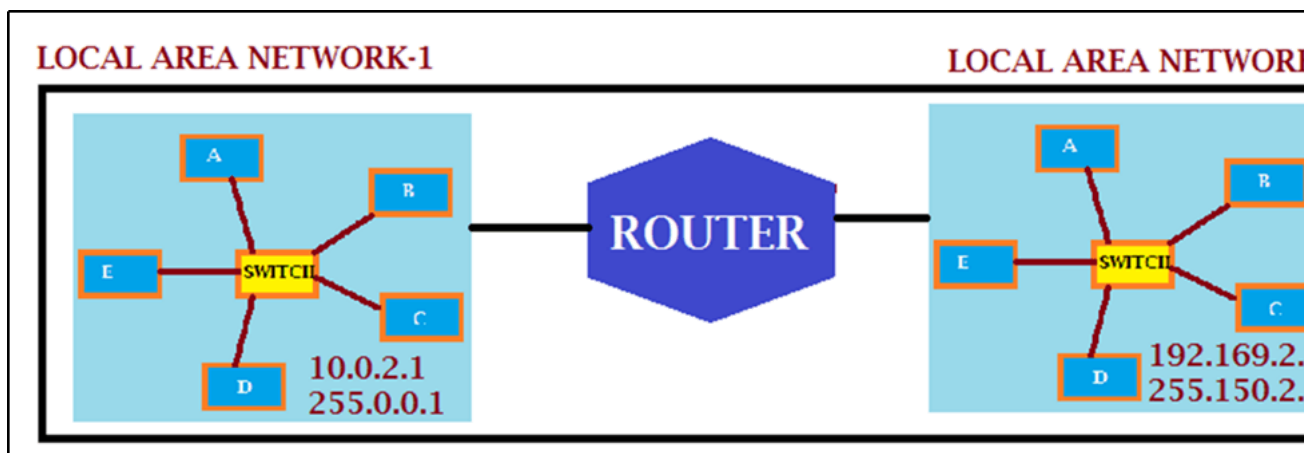
- Introduction
- Connecting Two Different Networks
- Connecting LAN To ISP
- Router Vs Switch
- Router Interfaces/Gateways

Introduction

- A router is responsible to forward data packets between two different LANs (Local Area Networks) .
- It helps two different networks to communicate with each other.
- Two different networks may be
 - Two Local Area Networks
 - Two Wide Area Networks
 - A LAN to Internet

Connecting Two Different LANS

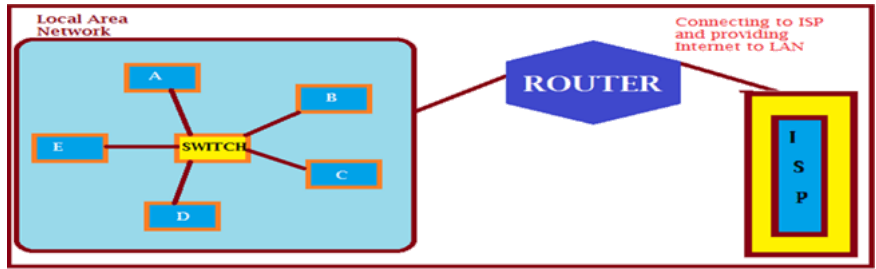
A network is identified by its IP address and Subnet Mask. See the following image of connecting two different LAN. Both the networks have different IP addresses.



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Router Connecting LAN to Internet (ISP)

A Router connects a LAN (Local Area Network) to an ISP (Internet Service Provider) , so that all the nodes in the network can access the Internet.



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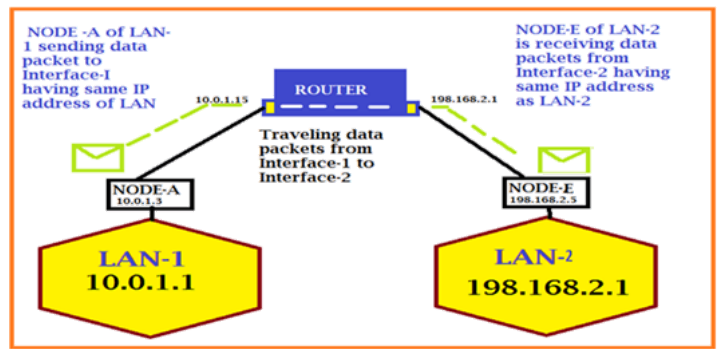
Router vs Switch

- When we want to connect two different LAN it is just possible with Router whereas Switch can be used to connect nodes and some peripheral devices (like printer) in the same LAN.
- Router has memory. It stores routing tables in it whereas a Switch stores Mac address Table i.e.. IP addresses of the nodes within the network.
- Router is a 3rd Layer (Network Layer) device whereas Switch is a 2nd Layer (Data Link Layer) device.
- Router helps two different LANs or two different WANs to communicate whereas Switch helps the nodes to communicate with in the same network.
- A switch has different ports [specifically for RJ-45 connectors] on it. Through these ports all the nodes are attached to it whereas a Router has two interface and both the interfaces are connected to different networks.

Router Interfaces

- A router has two interface through which nodes in different networks can communicate.
- When a NODE-A of NETWORK-1 wants to communicate with NODE-E of NETWORK-2, it send data packet to INTERFACE-1 connected to same network. Then the INTERFACE-1 forward the data packets to INTERFACE-2 which is connected to different network. The NODE-E receives data packets from the INTERFACE connected to its network.

Communication between Different Networks through Interfaces/Gateways



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MCQs

Q-1. If NODE-A (10.0. 1.2) wants to send data packets to NODE-E (10.0. 1.5) , which device will support to forward the data packets to NODE-E. ?

1. Router
2. Switch
3. Gateway
4. Bridge

Answer: 2

Q-2. What is that parts are called in a router which are connected to two different networks?

1. Ethernet Cables
2. RJ-45 Connector
3. Interface
4. Network Port

Answer: 3

✉ Mayank

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