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NAME OF THE STUDENT: N.S.S.Hemanth **REGD NO: 5C3**

AIM: Familiarization of Routers

DISCRIPTION:

ROUTRES:

- **Purpose:** Routers are highly intelligent devices that connects multiple network types and determine the best path for sending data.
- Normally used to connect two LANs
- Its **work** is to examines incoming packets to determine the destination address and then examines routing table, choose the best path for packet through network and switches them to proper outgoing port.
- **Examples** Wi-Fi routers (travel routers),DSL router which connects to internet through an internet service provider(ISP), virtual router, core router, edge router etc.
- A packet is typically forwarded from one router to another through the network that constitute an internetwork until it reaches its destination node.
- **Edge router:** this type of router is placed at the edge of the ISP network that is configured to external protocol like BGP (Border gateway protocol) to another BGP of other ISP or large organization.
- **Subscribed and unsubscribed:** this type of router belongs to an end user (enterprise) organization. Its configured to broadcast external BGP to its providers.
- **Inter-provider Border Routers:** this type of router is for interconnecting ISPs. This is a BGP speaking router that maintain BGP session with other BGP speaking router in other provider.
- **Core routers:** A router that resides within the middle or backbone of LAN network rather than at its periphery.
- **Wired and wireless routers**: home and small office become popular by day by the use of IP wired and wireless router. wired and wireless router are able to maintain routing and configuration information in their routing table.

Routing Algorithm:

- It is a method for determining the routing of packets in node.
- For each node of a network, the algorithm determines a routing table, which in each destination, matches an output line.
- There are three types of routing algorithms they are:
- Static routing
- Dynamic routing
- Default routing

- **Static routing:**
- also called Non adaptive routing
- Sends packets for the destination along path defined by administrator
- Is a technique in which the administrator manually adds routes in routing table.
- **Dynamic routing:**
- Also called adaptive routing
- Dynamic protocols are used to discover new routes
- Automatic adjustment will be made to reach destination
- **Default routing**:
- Used when network deal with the single exit point
- Also used when bulk of transmission networks have to transmit
- **RIP** is the routing information protocol is the most widely used protocol in the TCP / IP environment to route packets between the gateways of the Internet. It is a protocol IGP (Interior Gateway Protocol), which uses an algorithm to find the shortest path
- **OSPF** is the open shortest path first protocol is part of the second generation of routing protocols. Much more complex than RIP, but at higher performance rates, it uses a distributed database that keeps track of the link state.

WiFi Routers

OBSERVATION:

The above description shows what is router ,types of routers, purpose of routers, how routing works, and types of routing algorithms.

REFERNCES:

1.. https://www.lifewire.com › How To › Internet & Network › Key Concepts
2. *ecomputernotes.com › Computer Networking › Comm. Networks*