ROUTERS

Routers :

Routers are a fundamental part of network architecture, and their primary role concerning broadcast IDs is to create and define broadcast domains. By default, routers do not forward broadcast traffic from one network to another, which is a key function for preventing excessive network congestion and security vulnerabilities.

Data Packets

Router

Destination

Ip address?

Direct Network Traffic Management

Data

Reaches Destination

Types of Routers :

Home and small office routers

* Wireless routers: These are the most common type of router for home and small office use. They combine the functions of a router with a wireless access point, allowing devices to connect to the network via Wi-Fi.
* Wired routers: Older models or those intended for small office networks may be exclusively wired, providing network access only through Ethernet cables. They are often used when a stable, high-speed connection is the top priority.
* Broadband routers: A router for a home network is sometimes called a broadband router, emphasizing its role in sharing a single broadband internet connection among multiple devices.

Enterprise-level routers

For large organizations and internet service providers (ISPs), routers are designed to handle immense traffic, prioritize specific data, and ensure high availability.

* Core routers: These are high-performance routers at the center of an ISP or enterprise network. They are responsible for forwarding data at the core of the network and connecting multiple high-speed data links.
* Distribution routers: Found in large enterprise networks, distribution routers aggregate traffic from multiple access routers. They route traffic between different local area networks (LANs) and are responsible for things like Quality of Service (QoS) and VLAN segmentation.
* Access routers: At the lowest level of the enterprise network, access routers provide connectivity to end-user devices within a LAN, serving as a gateway to higher-tier routers.

Specialized routers

* VPN routers: These are often used in business networks and are designed to handle Virtual Private Network connections, allowing secure access to the network for remote users.
* Virtual routers: These are software-based routers that run on virtual machines or cloud platforms. They offer the same functions as physical routers but provide greater flexibility and scalability for virtualized environments.
* Modular routers: These routers allow for expansion and customization through interchangeable interface cards. They are typically used in enterprise environments where network needs may change over time.
* Portable routers: A small, lightweight device that provides Wi-Fi connectivity on the go, often by using a cellular SIM card to create a Wi-Fi hotspot.