**BRIDGES**

**Bridges** are used to connect two subnetworks that use interchangeable protocols. It combines two LANs to form an extended LAN. The main difference between the bridge and repeater is that the bridge has a penetrating efficiency.

### WORKING OF BRIDGES

A bridge accepts all the packets and amplifies all of them to the other side. The bridges are intelligent devices that allow the passing of only selective packets from them. A bridge only passes those packets addressed from a node in one network to another node in the other network.

A bridge performs in the following aspect −

* A bridge receives all the packets or frame from both LAN (segment) A and B.
* A bridge builds a table of addresses from which it can identify that the packets are sent from which LAN (or segment) to which LAN.
* The bridge reads the send and discards all packets from LAN A sent to a computer on LAN A and that packets from LAN A send to a computer on LAN B are retransmitted to LAN B.
* The packets from LAN B are considered in the same method.

### USES OF BRIDGES

The main uses of bridges are.

* Bridges are used to divide large busy networks into multiple smaller and interconnected networks to improve performance.
* Bridges also can increase the physical size of a network.
* Bridges are also used to connect a LAN segment through a synchronous modem relation to another LAN segment at a remote area.

**ROUTING**

Network routing is an important part of network communications. Routing helps your network components select the best network path from the available choices. This makes network communication efficient and reliable. The hardware components that enable this are called routers. Monitoring and managing routers are an indispensable part of network administrators' everyday tasks. Since routers can make or break your network connectivity and availability, it is important to understand how routers and routing techniques work.

### HOW DOES NETWORK ROUTING WORK?

Routers maintain a log of all the available network paths in a built-in database called the "routing table". This table needs to be constantly updated to ensure the paths logged are complete per the real-time path in the network.

Every time a router receives a network data packet, it inspects the packet header to obtain details about where the packet is headed. Based on this information, the router checks its routing table and forwards the packet in the most effective network route. This way, the packet traverses from one router to another until it reaches its destination network and ultimately the destination device.