

Difference Between Hub and Switch

HUB is used to connect segments of a LAN. A switch connects various devices together on a single computer network. This device also is used to route information and send over networks in the form of electronic data.

Key Differences Between Hub and Switch

The major differences between these two devices are explained in the table provided below:

Hub	Switch
The Hub device is operated on the Physical layer of the OSI model.	While the switch device is operated on the Data link layer of the OSI Model.
This transmission is a broadcast-type transmission.	This transmission is a Unicast, multicast, and broadcast-type transmission.
It has 4/12 ports.	While the switch can have 24 to 48 ports.
There is only one collision domain in Hub.	Different ports have their own collision domain.
It is a half-duplex transmission mode.	It is a full-duplex transmission mode.
Packet filtering is not provided in Hub.	Packet filtering is provided in the switch.
Hub devices cannot be used as a repeater.	A switch device can be used as a repeater.
Hub is not an intelligent device as It sends messages to all ports. Due to this, it is comparatively inexpensive.	The switch device is an intelligent device as it sends messages to selected destinations. Due to this, it is expensive.
It is simply an old device and nowadays is not generally used.	It is a very sophisticated device and is nowadays widely used.
The hacking of systems attached to these devices is complex.	The hacking of systems attached to these devices is a little easy.

What is a Hub?

A Hub is a device that allows multiple computers/PCs to connect to a single network. This device is used to connect segments of a LAN. A hub carries various ports so that when a packet/connection arrives at one port, that connection gets copied to various other ports. This device is a common connection point for connecting devices in a given network. Hub has a speed of up to 10 Mbps.

There are two types of Hubs: Active Hub and Passive Hub.

- **Active hub:** This kind of hub has its own power supply. Active Hub can clean, improve, and relay the signal to the network.
- **Passive Hub:** It is a kind of Hub that collects power supply from the active hub devices and wiring from nodes. It relays signals into the network without cleaning and boosting the signals.

An example of a Hub is a USB hub that allows multiple USB devices to connect to a single computer.

What is a Switch?

The switch is a network device used to enable and establish the connection also it creates connection termination based on requirements. This device is operated on the Datalink layer. In Switch, packet/connection filtering is available. This is a type of device that has a full-duplex transmission mode. The switch is also called an efficient bridge. It connects several devices together on a single network and transmits the information. Its speed can be 10/100 Mbps, 1 Gbps, or 10 Gbps.

There are two types of Switches: Manageable Switches and Unmanageable Switches

- **Manageable Switches:** These switches have a console port and IP address that can be assigned and configured.
- **Unmanageable Switches:** On these switches, configuration can't be made. As there is no console port, assigning an IP address on Unmanageable Switches is impossible.

Examples of switches are the 'NETGEAR' 5 port switch and a scissor switch used with laptop computers.