

When referring to a network, a hub is the most basic networking device that connects multiple computers or other network devices together. Unlike a network switch or router, a network hub has no routing tables or intelligence on where to send information and broadcasts all network data across each connection. Most hubs can detect basic network errors such as collisions, but having all information broadcast to multiple ports can be a security risk and cause bottlenecks. In the past, network hubs were popular because they were cheaper than a switch or router. Today, switches do not cost much more than a hub and are a much better solution for any network.

In general, a hub refers to a hardware device that enables multiple devices or connections to be connected to a computer. An example is a USB hub, which allows multiple USB devices to be connected to one computer, even though that computer may only have a few USB connections.

Hubs and switches serve as a central connection for all of your network equipment and handles a data type known as frames. Frames carry your data. When a frame is received, it is amplified and then transmitted on to the port of the destination PC.

In a hub, a frame is passed along or "broadcast" to every one of its ports. It doesn't matter that the frame is only destined for one port. The hub has no way of distinguishing which port a frame should be sent to. Passing it along to every port ensures that it will reach its intended destination. This places a lot of traffic on the network and can lead to poor network response times.

Compared to a standard switch, the hub is slower as it can send or receive information just not at the same time, but typically costs more than a hub.

A passive hub serves simply as a conduit for the data, enabling it to go from one device (or segment) to another. So-called intelligent hubs include additional features that enables an administrator to monitor the traffic passing through the hub and to configure each port in the hub. Intelligent hubs are also called manageable hubs.

A third type of hub, called a switching hub, actually reads the destination address of each packet and then forwards the packet to the correct port. Hubs can be used as a standalone device or connected to compatible hubs and switches to form a larger network. Hubs are generally easy to install and maintain, making these devices a good option for home networking. A hub is also easily configured for small business branch office networking.

