Depending on the implementation, the following hardware devices are used on a network:

Component	Description
Media	The networking *medium* provides the path for signals to pass between two devices. • Copper cables use electrical signals. • Fiber optic cables use light pulses. • Wireless networks use radio waves.
Network adapter	A *network adapter* creates the signals that are sent along the networking medium. • The term network interface card (NIC) typically describes an adapter that uses a cable medium (such as copper or fiber optic cables). • A modem (modulator/de-modulator) converts binary data to an analog signal. • A wireless network adapter sends radio waves.
Hub	A *hub* provides a central connection for multiple media segments on the same subnet. The hub repeats a signal received on one port out all other ports. Hubs operate in *half-duplex* mode because the path between devices is shared, meaning that devices can only send when no other devices are sending data.
Switch	A *switch* provides a central connection for multiple media segments on the same subnet. The switch receives a signal on one port, and forwards that signal only to the port where the destination device is connected. Switches learn where a device is connected by copying the MAC address of the source device and placing it into the MAC address table. The port number which the frame entered is also recorded in the table and associated with the source MAC address. If the switch doesn't yet know which port a destination device is connected to, it will send the frame in question to all ports, much like a hub does. • Switches use the MAC address to send frames to the destination device.

	• Switches can operate in *full duplex* mode where a device uses a different channel for sending and receiving, and where the transmission paths are dedicated to only the communicating devices. • When possible, use switches instead of hubs. • Many switches allow you to configure Quality of Service settings, which prioritize certain types of network traffic over others. For example, if your network includes Voice over IP (VoIP) telephones, you could increase the priority of VoIP traffic on the switch to increase call quality.
Router	A *router* connects two network segments that have a different subnet address. • A router has multiple network connections, with each connection being on a different subnet. • Routers use the IP address within a packet to move packets between networks. • Routers maintain a list of known networks and the next router in the path to reach the destination network.
Bridge	A *bridge* connects two segments within the same subnet. Bridges learn which side a host resides on by copying the MAC address of the source device and placing it into the MAC address table. The port number which the frame entered is also recorded in the table and associated with the source MAC address.