

WHY IS IT CALLED A SWITCH?

You might be wondering why a switch is called a switch. After all, in your everyday experience, a switch is used to turn something on and off. But network switches don't turn networks on and off.

In networking, a switch is a device that receives incoming packets of information from the network and determines where each packet should be sent. In that sense, a network switch is more like a railroad track switch than a light switch. Instead of turning something on or off, a network switch determines which of several tracks a particular packet of information should be sent to.

Consider a small switch with eight ports, numbered 1 through 8. When the switch is powered on, it pays attention to the devices that it can connect to on each of its eight ports. It does this by studying the Ethernet packets that arrive on each port and taking note of the sender's address contained in each packet. The switch keeps track of which device is attached to each of its ports. When a packet arrives on a port, the switch looks at the recipient's address contained in the packet. The switch then determines which port the recipient is on and sends the packet to that port.

Thus, switches efficiently manage the travel of packets throughout a network by switching each packet traveling on the network through the correct cables, ensuring that each packet arrives at its destination.

In larger networks, however, switches have a much more complicated job to do. In these environments, you need the ability to monitor and configure the behavior of each of the switches in the network. Switches that provide this capability are called *managed switches*. Switches that do not provide this capability are called *unmanaged switches*.

A managed switch has an IP address of its own and provides a web-based management console that you can access by pointing your favorite web browser to the IP address of the switch. After you've logged in to the management console, you can do things such as configure each port for different types of network traffic, view the amount of traffic on each port, and monitor each port's performance, as well as the overall performance of the switch.



TIP

As a general rule, if your network requires more than a single switch, you should use managed switches. Managed switches are more expensive than unmanaged switches, but when your network grows large enough to require more than one switch, you'll appreciate the benefits that managed switches provide.