**What Is a Crossover Cable?**

When you need to connect two network devices of the same type

An Ethernet crossover cable, also known as a crossed cable, connects two [Ethernet](https://www.lifewire.com/what-is-ethernet-3426740) network devices. These cables support temporary host-to-host networking in situations where an intermediate device, such as a [network router](https://www.lifewire.com/what-is-a-broadband-router-816301), is not present. Crossover cables look almost identical to ordinary, straight-through (or patch) Ethernet cables, but the internal wiring structures are different.

What Is a Crossover Cable?

An ordinary patch cable connects different types of devices, for example, a computer and a network switch. A crossover cable connects two devices of the same type. You can wire the ends of a patch cable in any way as long as both ends are identical. Compared to straight-through Ethernet cables, the internal wiring of a crossover cable reverses the transmit and receive signals.

You can see the reversed color-coded wires through the [RJ-45](https://www.lifewire.com/definition-of-rj45-817872) connectors at each end of the cable:

* Standard cables have an identical sequence of colored wires on each end.
* Crossover cables have the first and third wires (counting from left to right) crossed and the second and sixth.

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A good Ethernet crossover cable has special markings that distinguish it from straight-through cables. Many are red and have "crossover" stamped on the packaging and wire casing.

Do You Need a Crossover Cable?

Information technology (IT) professionals used crossover cables often in the 1990s and 2000s; the popular forms of Ethernet did not support direct cable connections between hosts.

Both the original and Fast Ethernet standards were designed to use specific wires to transmit and receive signals. These standards required the two endpoints to communicate through an intermediate device to avoid conflicts caused by using the same wires for both transmit and receive.

A feature of Ethernet called MDI-X provides the necessary auto-detection support to prevent these signal conflicts. It allows the Ethernet interface to automatically determine which signaling convention the device on the other end of the cable uses ​and negotiates the transmit and receive wires accordingly. Only one end of a connection needs to support auto-detection for this feature to work.

Most home broadband routers (even older models) incorporated MDI-X support on their Ethernet interfaces. [Gigabit Ethernet](https://www.lifewire.com/definition-of-gigabit-ethernet-816338) also adopted MDI-X as a standard.

Crossover cables are needed only when connecting two Ethernet client devices, neither of which is configured for Gigabit Ethernet. Modern Ethernet devices automatically detect the use of crossover cables and work with them seamlessly.

How to Use Ethernet Crossover Cables

You should only use crossover cables for direct network connections. Attempting to connect a computer to an old router or [network switch](https://www.lifewire.com/definition-of-network-switch-817588) with a crossover cable instead of a normal cable can prevent the link from functioning.

You can purchase these cables through electronics outlets. Hobbyists and IT professionals often prefer to make their own crossover cables instead. To convert a straight-through cable to a crossover cable, remove the connector and reattach the wires with the appropriate transmit and receive wires crossed.