# Networking Basics module 4.

Day 3/365

Module 4 goes in depth about how home networks are set up.
Every home network has at least 2 separate networks, the public one coming from the ISP and the local router connected to the internet. Ethernet port in a router connects to end devices, and the Internet port connects to the signal provided by the ISP, usually a coaxial cable. Modern home router also come with built-in wireless functionality.

Wireless technologies use electromagnetic waves to carry information between devices. Some types of electromagnetic waves are not suitable for carrying data or are regulated by government and licensed for very specific use.
We mostly use unlicensed 2.4 GHZ and 5Ghz frequency ranges, and stick to the IEEE 802.11 standards.
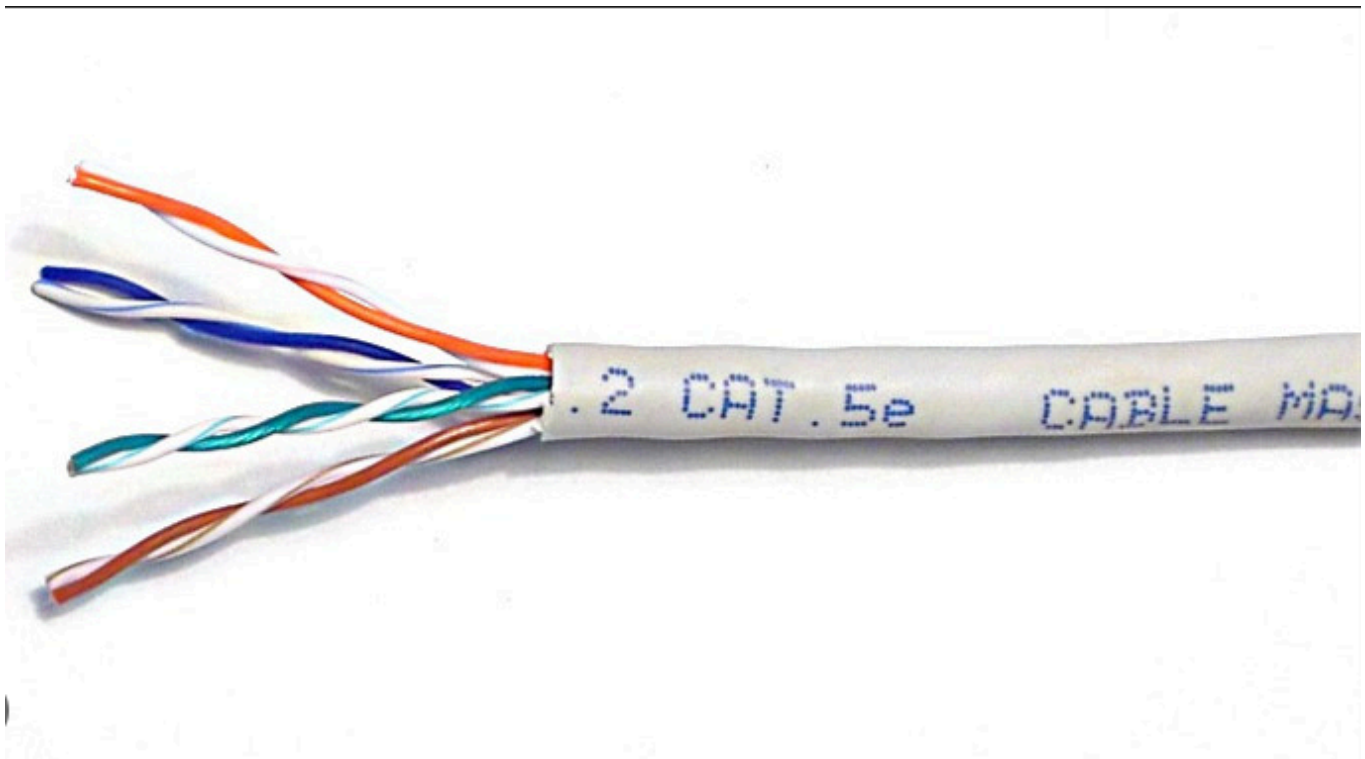
Category 5e (Type of UTP) is the most common wiring used in a LAN.

In conjunction with a RJ45 Connector

The IEE 802.111 standard governs the WLAN environment. The Wi-Fi Alliance is a group responsible for testing wireless LAN devices from different manufacturers.

Wireless routers using the 802.11 standards have multiple settings that have to be configured. These settings include the following:

- **Network mode** - Determines the type of technology that must be supported. For example, 802.11b, 802.11g, 802.11n or Mixed Mode.
- **Network Name (SSID)** - Used to identify the WLAN. All devices that wish to participate in the WLAN must have the same SSID.
- **Standard Channel** - Specifies the channel over which communication will occur. By default, this is set to Auto to allow the access point (AP) to determine the optimum channel to use.
- **SSID Broadcast** - Determines if the SSID will be broadcast to all devices within range. By default, set to Enabled.

If the access point is configured to accept only one 802.11 standard, devices that do not use that standard cannot connect to the access point. A mixed mode wireless network environment can include devices that use any of the existing Wi-Fi standards.

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