

Network Wiring and Wireless Glossary

Bridge – A network bridge is a network device that connects multiple network segments. Bridging is distinct from routing which allows the networks to communicate independently as separate networks.

Category 3, 5, 5e, 6 – Often abbreviated Cat 3, Cat 5 or Cat 6, represent different 8 conductor (4 pair) cabling. It is unshielded unless otherwise specified. Cat 3 is limited to 10Mbit/s and is now only used for telephone wiring. Cat 5 is rated for 100Mbit/s with Cat 5e and 6 rated at 1000Mbit/s.

Crossover Cable – A network cable created with one 468A and one 468B wired end that allows direct connection of two network devices without the use of a hub or switch

DMZ – a DMZ or Demilitarized Zone is a subnetwork that contains and exposes an organization's external-facing services to a larger and untrusted network, usually the Internet. The purpose of a DMZ is to add an additional layer of security to an organization's local area network (LAN); an external attacker only has direct access to equipment in the DMZ, rather than any other part of the network.

Firewall – A firewall establishes a barrier between a trusted, secure internal network and another network (e.g., the Internet) that is not assumed to be secure and trusted. A firewall controls the incoming and outgoing network traffic by analyzing the data packets and determining whether they should be allowed through or not, based on applied rule set.

Hub – A device for connecting multiple Ethernet devices together and making them act as a single network segment. It has multiple input/output (I/O) ports, in which a signal introduced at the input of any port appears at the output of every port except the original incoming. The availability of low-priced network switches has largely rendered hubs obsolete.

IP – Internet Protocol provides addressing and routing of packets on a network

IPv4 – Internet Protocol version 4 is the widely used standard with dotted decimal addresses that look like 192.168.1.1. IPv4 allows only 4.3 billion addresses that are rapidly running out.

IPv6 – The latest revision of the Internet Protocol that supports up to 3.4×10^{38} addresses

LAN – A Local Area Network connects computers and devices in a limited area such as a home or office building.

MAC – Media Access Control represents layer 2 of the OSI model

MAC Address – A unique address often burned into every network device. They generally take the form 01-23-45-67-89-ab where part of the address determines the device manufacturer.

MDI – The Medium Dependent Interface describes the wiring of a network jack

MDIX – Ethernet also defines a Medium Dependent Interface Crossover interface to allow devices to be interconnected. Hubs and switches generally implement this MDIX interface to interconnect devices. It can also be done with a crossover cable. Auto-MDIX ports on newer network interfaces detect if the connection would require a crossover, and automatically chooses the MDI or MDIX configuration to properly match the other end of the link.

NIC – Network Interface Card. May be a physical card or a built-in device

OSI – Open Systems Interconnection (OSI) is an effort to standardize computer networking that was started in 1977 by the International Organization for Standardization (ISO)

PoE – Power over Ethernet is a mechanism to power devices via the network wiring, allowing a single connection to the device. This is commonly used for access points, cameras and IP phones. Up to 50 watts can be available (25 watts is typical) at 44-48 volts. It requires a network switch with PoE support or power injector to supply the power into the network cabling

RJ-11 (6P2C) – Single line telephone connector. More accurately called 6P2C. Only the two center wires of the four or six pin positions are connected allowing a single phone line.

RJ-14 (4P6C) – Two line phone connector. More accurately called 4P6C. Four wires are connected allowing two phone lines. Compatible with RJ-45 (8P8C) 468A wiring.

RJ-25 (6P6C) – Three line telephone connector. More accurately called 6P6C. All 6 wires connected.

RJ-45 (8P8C) – Standard Ethernet network connector. More accurately called 8P8C (8 pin, 8 conductor).

Router – Routers may also be used to connect two or more logical groups of computer devices known as subnets, each with a different sub-network address. The subnets addresses recorded in the router do not necessarily map directly to the physical interface connections.

STP – Shielded Twisted Pair

Switch – A switch is a device that receives a message from any device connected to it and then transmits the message only to the device for which the message was meant. This makes the switch a more intelligent device than a hub (which receives a message and then transmits it to all the other devices on its network). The network switch plays an integral part in most modern Ethernet local area networks (LANs). Mid-to-large sized LANs contain a number of linked managed switches.

TCP – Transmission Control Protocol insures end-to-end data integrity (error-free delivery) by tracking packets and requesting retries as needed.

UDP – User Datagram Protocol is a method of sending packets over IP when error-free delivery is not required

UTP – Unshielded Twisted Pair

WAN – A Wide Area Network covers a large area and is generally comprised of multiple other networks

WEP – Wired Equivalent Privacy is an early wireless encryption mechanism. It uses a key of 10 or 26 hexadecimal digits. WEP has been superseded by WPA and WPA2.

WPA/WPA2 – WiFi Protected Access is a newer encryption mechanism that generates a security key from a standard alphanumeric password. WPA2 is a later version that addresses a number of vulnerabilities found in WPA and is mandatory in WiFi devices manufactured since 2006.