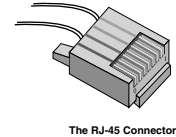


Fast Ethernet can be used throughout the campus environment. The following table gives examples of each campus layer.

	Ethernet 10BaseT Position	Fast Ethernet Position
Access layer	Provides connectivity between the end-user device and the access switch	Gives high-performance PCs and workstations 100 Mbps access to the server.
Distribution layer	Not typically used at this layer	Provides connectivity between access and distribution layers. Provides connectivity from the distribution to core layers. Provides connectivity from the server block to the core layer.
Core layer	Not typically used at this layer	Provides interswitch connectivity.

The following table compares cable and connector specifications. Fast Ethernet requires unshielded twisted-pair (UTP) Category 5 cabling.

	10Base5	10BaseT	100BaseTX	100BaseFX
Medium	50-ohm coaxial (thick)	EIA/TIA Category 3, 4, 5, UTP 2 pair	EIA/TIA Category 5 UTP 2 pair	62.5/125 micron multimode fiber
Maximum segment length	500 meters	100 meters	100 meters	400 meters
Topology	Bus	Star	Star	Point-to-point
Connector	AUI	ISO 8877 (RJ-45)	ISO 8877 (RJ-45)	Duplex media interface connector (MIC) ST



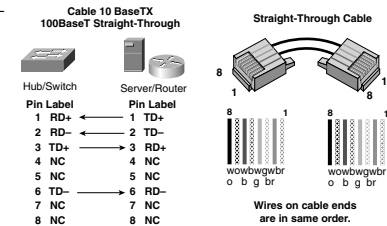
The RJ-45 Connector

Pin	Wire Pair T is Tip R is Ring
1	Pair 2 T2
2	Pair 2 R2
3	Pair 3 T3
4	Pair 1 R1
5	Pair 1 T1
6	Pair 3 R3
7	Pair 4 T4
8	Pair 4 R4

Crossover cables are typically used to connect similar devices, such as switch-to-switch connections. The primary exception to this rule is switch-to-hub connections, which use a crossover cable. Some device ports are marked with an X. In general, use a straight-through cable when only one of the ports is marked.

An RJ-45 connector is used with UTP cabling. The two types of connections are straight-through and crossover.

Straight-through cables are typically used to connect different devices, such as switch-to-router connections.



LAN Specifications and Connections Summary

- Ethernet has several LAN specifications, including IEEE 802.3 (10 Mbps), IEEE 802.3u (100 Mbps), and Gigabit Ethernet (1000 Mbps).
- UTP Category 5 is required for Fast Ethernet.
- Straight-through cables are typically used to connect different device types, such as a router and a switch. The exception is a switch-to-hub connection, which requires a crossover cable.
- Crossover cables are typically used to connect similar devices, such as a switch and a switch.

