4.2.2 Ethernet Specifications Facts

Ethernet standards are defined by the IEEE 802.3 committee. The following table compares the characteristics of various Ethernet implementations:

Category	Standard	Bandwidth	Cable Type	Maximum Segment Length
Ethernet	10BaseFL	10 Mbps (full duplex)	Fiber optic	1,000 to 2,000 meters
Fast Ethernet	100BaseTX	100 Mbps (half duplex) 200 Mbps (full duplex)	Twisted pair (Cat5 or higher), uses 2 pairs of wires	100 meters
Gigabit Ethernet	1000BaseCX (short copper)	1,000 Mbps (half duplex) 2,000 Mbps (full duplex)	Special copper (150 ohm)	25 meters used in wiring closets
	1000BaseSX (short)		Fiber optic	220 to 550 meters depending on cable quality
	1000BaseLX (long)			550 meters 5 kilometers
10 Gigabit Ethernet	10GBaseLR	10 Gbps (full duplex only)	Single mode fiber optic	10 kilometers

You should also know the following facts about Ethernet:

- The maximum cable length for UTP Ethernet T implementations is 100 meters for all standards.
- Ethernet standards support a maximum of 1024 hosts on a single subnet.

Cat5e supersedes the Cat5 specification. The original Cat5 cable specification published by the IEEE 802.3 committee supported gigabit Ethernet, but Cat5 did not reliably perform at gigabit speed in the real world. Cat5e was developed to reliably support gigabit Ethernet.