6.4.3 Ethernet Standards

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

Category	Standard	Bandwidth	Cable Type	Maximum Segment Length
Ethernet	10BaseT	10 Mbps (half-duplex) 20 Mbps (full-duplex)	Twisted pair (Cat 4 or 5)	100 meters
	10BaseFL	10 Mbps (multimode cable)	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
	100BaseFX	100 Mbps (multimode cable)	Fiber optic	412 meters
Gigabit Ethernet	1000BaseT	1,000 Mbps (half-duplex) 2,000 Mbps (full-duplex)	Twisted pair (Cat5 or higher)	100 meters
	1000BaseCX (short copper)		Special copper (150 ohm)	25 meters, used within wiring closets
	1000BaseSX (short)		Fiber optic	220 to 550 meters depending on cable quality
	1000BaseLX (long)			550 meters (multimode) 10 kilometers (single-mode)
10 Gigabit Ethernet	10GBaseT	10 Gbps (full-duplex only)	Twisted pair (Cat6, or 7)	100 meters
	10GBaseSR/10GBaseSW		Multimode fiber optic	300 meters
	10GBaseLR/10GBaseLW		Single-mode fiber	10 kilometers

			optic	
	10GBaseER/10GBaseEW		Single-mode fiber optic	40 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 shared media subnet. Using bridges or switches to separate collision domains can increase the number of supported hosts on a subnet.