

# Early Ethernet Standards



<https://github.com/DelfinoRT>

## 10BaseT

The number refers to the speed: 10Mbps

The letter T refers to the type of cable used: Twisted-Pair.

The word Base refers to the signaling type: Baseband  
(Baseband means that the cable carries only one type of signal.  
Contrast with Broadband -as in cable TV- where the cable carries  
multiple signals or channels.)

### 10BaseT

- **Speed:** 10 Mbps
- **Distance:** 100 meters between the hub and the node
- **Node limit:** No more than 1024 nodes per hub
- **Topology:** Star-bus topology: physical star, logical bus
- **Cable type:** Cat 3 or better UTP cabling with RJ-45 connectors

### 10BaseFL

- **Speed:** 10 Mbps
- **Distance:** 2000 meters between the hub and the node
- **Node limit:** No more than 1024 nodes per hub
- **Topology:** Star-bus topology: physical star, logical bus
- **Cable type:** Multimode fiber-optic cabling with ST or SC connectors

# Modern Ethernet Standards

### 100BaseT

- **Speed:** 100 Mbps
- **Distance:** 100 meters between the hub/switch and the node
- **Node limit:** No more than 1024 nodes per hub/switch
- **Topology:** Star-bus topology: physical star, logical bus
- **Cable type:** Cat 5 or better UTP or STP cabling with RJ-45/8P8C connectors

### 100BaseFX

- **Speed:** 100 Mbps
- **Distance:** Two kilometers between the hub/switch and the node
- **Node limit:** No more than 1024 nodes per hub/switch
- **Topology:** Star-bus topology: physical star, logical bus
- **Cable type:** Multimode fiber-optic cabling with ST or SC connectors

### 1000BaseSX

- **Speed:** 1000 Mbps / 1 Gbps
- **System:** Multi-mode fiber optic
- **Distance:** 220 - 500 meters
- **Wavelength:** 770 - 860 nanometer light
- **Cable type:** Multimode fiber-optic cabling with LC connector commonly used.

### 1000BaseLX

- **Speed:** 1000 Mbps / 1 Gbps
- **System:** Single-mode fiber optic or multi-mode fiber optic
- **Distance:** 5 - 70 kilometers
- **Wavelength:** 1270 - 1335 nanometer light
- **Cable type:** Multimode fiber-optic cabling with LC connector.

### 1000BaseT

- **Speed:** 1000 Mbps / 1 Gbps
- **System:** Single-mode fiber optic or multi-mode fiber optic
- **Distance:** 100-300 meters
- **Wavelength:** 1270 - 1335 nanometer light
- **Cable type:** Cat 5, Cat6, Cat6a and Cat7 - STP or UTP with RJ-45 connector.

The vast majority of wired networks today feature Gigabit Ethernet, but that has not stopped developers and manufacturers from pushing well beyond those limits. New implementations of ethernet standards are:  
10/40/100 gigabit.