Ethernet Explained

- Ethernet is a network protocol that controls how data is transmitted over a LAN.
- It's referred to as the Institute of Electrical and Electronics Engineers (IEEE) 802.3 Standard.
- It supports networks built with coaxial, twisted-pair, and fiber-optic cabling.
- The original Ethernet standard supported 10Mbps speeds, but the latest supports much faster gigabit speeds.
- Ethernet uses CSMA/CD & CSMA/CA access methodology.

Ethernet N<Signaling>-X Naming

- Ethernet uses an "xx Base T" naming convention: **10Base-T**
  - **N**: Signaling Rate, i.e., Speed of the cable.
  - **<Signaling>**: Signaling Type: Baseband (Base) communication.
  - **X**: Type of cable (twisted pair or fiber).

Twisted Pair Standards

Cat	Network Type	Ethernet Standard	Speed	Max. Distance
Cat 3	Ethernet	10Base-T	10Mbps	100 meters
Cat 5	Fast Ethernet	100Base-TX	100Mbps	100 meters
Cat 5e	Gigabit Ethernet	1000Base-T	1Gbps	100 meters
Cat 6	Gigabit Ethernet 10 Gigabit Ethernet	1000Base-T 10GBase-T	1Gbps 10Gbps	100 meters 55 meters
Cat 6a	10 Gigabit Ethernet	10GBase-T	10Gbps	100 meters
Cat 7	10 Gigabit Ethernet	10GBase-T	10Gbps	100 meters

Cat: Copper Cabling Standard.