

Copper cables	
<b>Coaxial cables</b>	metal shield to protect data, EMI resistance RG-59, RG-6.
<b>connectors</b>	F-connector, BNC
<b>Twinaxial</b>	2 inner connectors
<b>Serial</b>	DB-9 or DB-25 with serial connector 9 or 25-pin D-subminiature, used for <b>asynchronous</b> serial communication
<b>Twisted Pair</b>	4 pairs twisted for EMI reduction, used for LAN, CAT5-CAT8
<b>UTP vs STP</b>	Unshielded vs <b>Shielded Twisted Pair</b>
<b>Connectors</b>	<b>RJ11</b> -6pin (phone), <b>RJ45</b> -8pin (Data)
<b>Bandwith</b>	theoretical data flow
<b>Throughput</b>	measured data flow
<b>Straight-Through Patch cables</b>	T-568B / DTE>DTE, DCE>DCE
<b>Crossover cables</b>	T-568B & T-568A / DTE>DCE, DCE/DTE
<b>MDIX</b>	electronic method on switches to simulate a crossover cable
<b>Plenum cable</b>	fire-retardant coating on UTP/STP cables for non visible locations

Cables CAT			
CAT	Base	Bandwith	Max distance
CAT3	10BASE-T	10Mbps	100m
CAT5	100BASE-TX	100Mbps	100m
CAT5e	1000BASE-T	1000Mbps	100m
CAT6	1000BASE-T	1000Mbps	100m
	10GBASE-T	10Gbps	55m
CAT6a	10GBASE-T	10Gbps	100m
CAT7	idem CAT6a with TERA connectors		
CAT8	40GBASE-T	40Gbps	30m

Fiber Media	
<b>Fiber Optic Cables</b>	uses light, immune to EMI, greater range, data-carrying capacity
<b>SMF</b>	<b>Single-Mode Fiber</b> long distance, 8.3-10µ Ø
<b>MMF</b>	<b>MultiMode Fiber</b> short distance (2km-), 50-100µ Ø
<b>Connectors</b>	<b>SC</b> (Stick and Click) - <i>APC: angled connector</i> <i>mnemotechnics</i> <b>ST</b> (Stick and Turn) <b>LC</b> (Love Connectors) <b>MTRJ</b> (Mechanical Transfer-RJ) - <i>UPC: straight connector</i>
<b>WDM</b>	<b>Wavelength Division Multiplexing</b> combines multiple signals into one signal on different wave lengths

Transceivers	
<b>Fiber pros</b>	bandwith+, distance+, EMI protection, security+
<b>Copper pros</b>	cost-, easy to install, tools inexpensive
<b>Media Converters</b>	L1 device, convert electricity<->light
<b>Transceivers</b>	bidi (token), duplex (full/half)
ex (+Gbps) :	GBIC, SFP(4.2), SFP+(16), QSFP(40), QSFP28-(100), QSFP56(200)
*Cable distribution*	
<b>MDF</b>	Main Distribution Frame (root)
<b>IDF</b>	Intermediate Distribution Frame
<b>Patch pannels</b>	simplifies cable management with switches (front has RJ-45 blocks)

