

NETWORK ARCHITECTURES

ARCHITECTURE	ETHERNET	ETHERNET	ETHERNET	TOKEN RING	ARCNET
Common Name	Thinnet	Thicknet	10BaseT	IBM 8228	ARCnet
Standard	IEEE 802.3 Ethernet 2.0 10Base2	IEEE 802.3 Ethernet 2.0 10Base5	IEEE 802.3 Ethernet 2.0 10BaseT	IEEE 802.5	IEEE 802.4 (similar) Low Impedance High Impedance
Topology	Linear Bus	Linear Bus	Distributed Star Tree	Star Wire	Distributed Star Linear Bus Tree
Transfer Rate	10 Mbps	10 Mbps	10 Mbps	16 Mbps 4 Mbps	2.5 Mbits/sec 20 Mbits/sec
Bandwidth	Baseband	Baseband	Baseband	Baseband	Baseband
Media Access	CSMA/CD	CSMA/CD	CSMA/CD	Token Passing	Token Passing
Components	NIC Repeaters Cabling System Network Connectors	NIC Repeaters Transceivers Transceiver Cable Cabling System Network Connectors	NIC Concentrators Repeaters Bridges Routers Cabling System Network Connectors	NIC MAU Repeaters Cabling System Network Connectors	NIC Connectors Active Hub Passive Hub Active Links
Cable Type	RG-58 A/U Coaxial	Coaxial Cable Transceiver Cable	UTP Cat. 3: Voice Grade Cat. 4: Mostly Obsolete Cat. 5: Commonly Used	UTP IBM Type 1 IBM Type 2 IBM Type 3 IBM Type 6 IBM Type 9 STP Cat. 1 Cat. 2	RG-62 Coaxial Cable Twisted Pair
Cable Size	0.2 inch	0.4 inch	Standard Phone		
Impedance	50 Ohms	50 Ohms			93 ohm
Cable Segment Length	610 Feet 185 Meters	1,650 Feet 500 Meters	328 Feet 100 Meters	300 Feet (Lobe Length)	20,000 Feet
Segments	5	5		8 per MAU	
Total Trunk Length	3,035 Feet 925 Meters	8,250 Feet 2,500 Meters		500 Feet	
Nodes/Segment	30	100	1,024	1260 IBM Type 1 Cable 260 IBM Type 2 Cable 72 - IBM Type 3 Cable	255
Connectors	BNC Connector BNC Barrel Connector BNC T Connector BNC Terminator	DIX Connector N-series male N-series barrel N-series terminators		Data Connectors T-1&2 RJ-45 (8 pin) T-3 RJ-11 (4 pin) T-3	BNC Connector BNC Barrel Connector BNC T Connector BNC Terminator
Other Specifications	<ol style="list-style-type: none"> Cable segments must be connected with a repeater. Only three of five segments can be populated with workstations. 	<ol style="list-style-type: none"> Transceivers must connect to the main cable segment. Only three of five trunk segment can be populated with workstations A repeater counts as one 	<ol style="list-style-type: none"> A hub or concentrator is required. A repeater is needed for any cabling distance greater than 100 meters. An Ethernet signal can only pass 	<ol style="list-style-type: none"> Maximum distances between hubs may be 400 to 500 feet. Distances can be increased using repeaters. 	<ol style="list-style-type: none"> The total length of the network cable between workstations can't exceed 20,000 feet. The maximum distance between active hubs is 2,000 feet. The maximum distance

	<ol style="list-style-type: none"> 3. Each end of a trunk segment must be terminated. 4. One of the two terminated ends must be grounded. 5. Nodes on a trunk segment must have at least 0.5 meter between T-connectors. 6. A repeater that connects trunk segments counts as one node on each trunk segment it connects. 	<ol style="list-style-type: none"> 4. Transceivers must be at least 8 feet (2.5 meters) apart 5. Transceiver cables are limited to a length of 165 feet (50 meters). 6. Each end of a cable must be terminated, and one of the two terminations must be grounded 	<p>through four repeaters.. If more than four repeaters are necessary, the segments must be bridged.</p>		<ol style="list-style-type: none"> 4. The maximum distance between an active hub and a passive hub is 100 feet. 5. The maximum distance between a passive hub and a node is 100 feet. 6. Active hubs can be connected to other active hubs, passive hubs, and nodes. 7. Passive hubs can be used only as intermediate connections between active hubs and nodes and can't be connected in a series. Passive hubs prohibited in High Impedance. 8. All nodes can be connected at any place in the network. 9. Nodes must be attached to the cable with T-connectors. A cable cannot be used between the T-connectors and the node. 10. Both ends of a length of cable must be terminated with either an active hub or BNC terminator. 11. Cabling can't loop back on itself.
ARCHITECTURE	100VG-AnyLAN	FDDI	APPLETALK	ATM	Fast Ethernet
Common Name	AnyLAN	FDDI	AppleTalk		Fast Ethernet
Standard	IEEE 802.12	FDDI-X3T9.5	OSI Compatible	OSI Compatible	IEEE 802.3u 100BaseT
Topology	Star	Ring	Linear Bus or Tree		Distributed Star Linear Bus Tree
Transfer Rate	100 Mbts/sec	150 to 00 Mbps	230 Kbps	155 Mbps	100 Mbps
Bandwidth	Baseband	Baseband	Baseband	Broadband	Baseband
Media Access	Demand Priority	Token Passing	CSMA/CD	CSMA/CD	CSMA/CD
Components	NIC Hubs Repeaters Connectors Cabling				NIC Concentrators Repeaters Bridges Switches Routers Cabling System Network Connectors
Cable Type	UTP Four Pair Cat. 3, 4, or 5	Fiber Optic	STP Fiber Optic UTP	UPT Cat. 5	UPT Two Pair Cat. 5 Four Pair Cat. 3, 4, or 5

			Cat. 1 Cat. 2		Fiber Optic
Cable Size					
Impedance					
Total Trunk Length			300 Meters		210 Meters
Nodes/Segment			32		
Connectors	BNC Connector BNC Barrel Connector BNC T Connector BNC Terminator T-Connectors				BNC Connector BNC Barrel Connector BNC T Connector BNC Terminator
Other Specifications	<ol style="list-style-type: none"> Up to five repeaters between two end nodes. Up to 100 Meters between each device. Repeaters may cascade down to three levels. Each hub has at least one uplink port. Every other port can be used as a downlink port.. 	<ol style="list-style-type: none"> Connect large mainframe computers and large high capacity data storage devices. Interconnect low capacity LANs. 			<ol style="list-style-type: none"> Limit between repeaters 210 Meters. Segments can be connected but are limited to 210 Meters Only two repeaters between end nodes. Total end node to end node 210 Meters.