



LAN Applications (2)

- Storage Area Networks
 - Separate network handling storage needs
 - Detaches storage tasks from specific servers
 - Shared storage facility across high-speed network
 - Hard disks, tape libraries, CD arrays
 - Improved client-server storage access
 - Direct storage to storage communication for backup
- High speed office networks
 - Desktop image processing
 - High capacity local storage
- Backbone LANs
 - Interconnect low speed local LANs
 - Reliability
 - Capacity
 - Cost



LAN Architecture

- Topologies
- Transmission medium
- Layout
- Medium access control

















- Reliability
- Expandability
- Performance
- Needs considering in context of:
 - -Medium
 - -Wiring layout
 - -Access control

Bus LAN Transmission Media (1)

- Twisted pair
 - -Early LANs used voice grade cable
 - —Didn't scale for fast LANs
 - -Not used in bus LANs now
- Baseband coaxial cable
 - -Uses digital signalling
 - -Original Ethernet

Bus LAN Transmission Media (2)

- Broadband coaxial cable
 - As in cable TV systems
 - Analog signals at radio frequencies
 - Expensive, hard to install and maintain
 - No longer used in LANs
- Optical fiber
 - Expensive taps
 - Better alternatives available
 - Not used in bus LANs
- All hard to work with compared with star topology twisted pair
- Coaxial baseband still used but not often in new installations

Provide a star Usage Provide a star Usage Provide a star Usage Provide a star Usage Provide a star Usage Star Provide a star Usage Dest for short distances High data rates for small number of devices

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Choice of Medium

- Constrained by LAN topology
- Capacity
- Reliability
- Types of data supported
- Environmental scope



Media Available (2)

- High performance UTP
 - Cat 5 and above
 - High data rate for small number of devices
 - Switched star topology for large installations
- · Optical fiber
 - Electromagnetic isolation
 - High capacity
 - Small size
 - High cost of components
 - High skill needed to install and maintain
 - Prices are coming down as demand and product range increases

