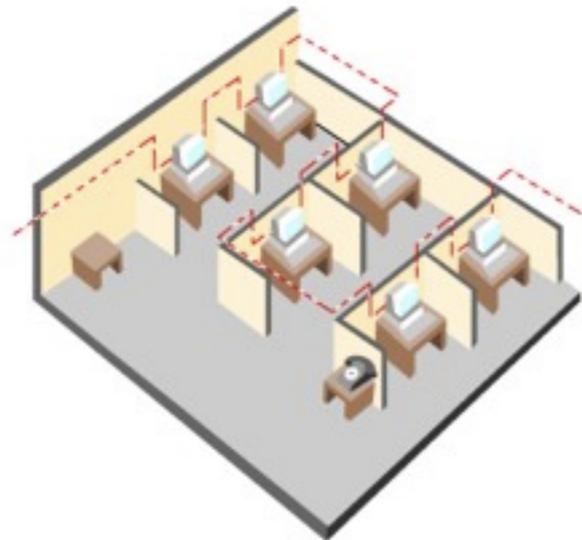


# Network Basics



-What are networks?

Multiple computers are linked together

-Network terms- Resource, media, Network Protocol and Peer.

-3 basic Network Categories- Local Area Network (LAN), Metropolitan Area Network (MAN), Wide Area Network (WAN)

-Local Area Network- Smallest of the three network types-Generally Located: Office Building

-Metropolitan Area Network-Span: over 50 miles. Designed: Connect organisation's existing LAN's in order to coordinate resources: Spam-Town/county

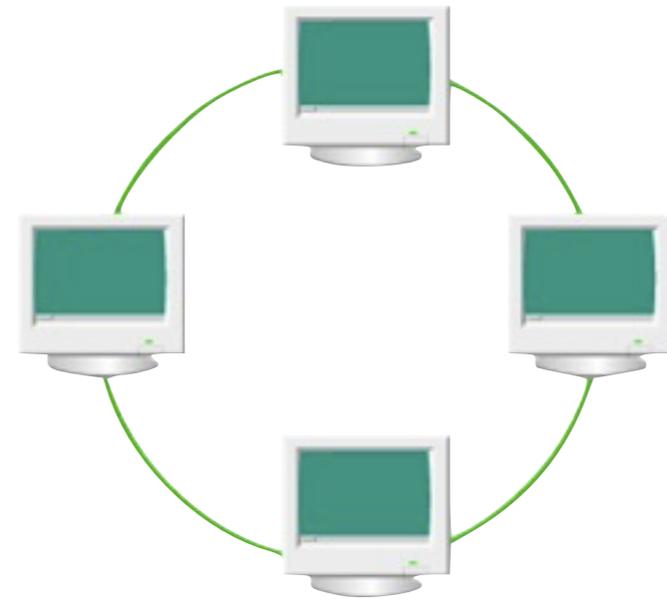
# Network Basics

- WAN's: Largest Network- Distribute information over 1000 miles, Covers larger distances but operates more slowly.
- Most widely known example of WAN: Internet.
- Workstation, Servers and hosts: 3 basic working participants of a network are ^^^.
- Network servers- < have multiple servers, network server is a powerful computer whose purpose is to serve network clients.
- Workstation- network computer that connects to and requests resources from a network.
- Host- computer-whether mainframe, server, or PC-acts as an information source on a network. any computer that has a TCP/IP network address can be a host.
- Network Architecture- Method by which a network distributes data.

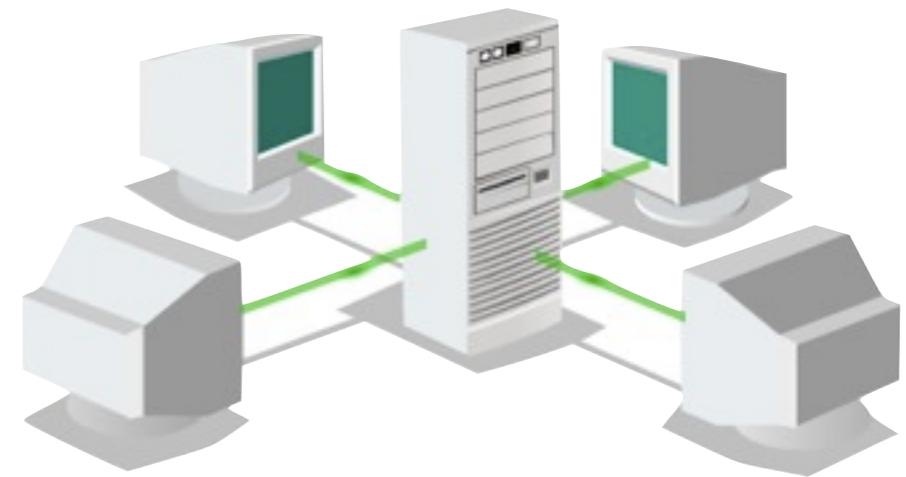


# Network Architecture

-Peer-to-Peer Networks- no centralised computer oversees the network.



-Client/Server Networks- separate client and server roles and use a network operating system to manage the entire network.



-Client/Server Properties- Servers are the devices that “serve” a network by running a network operating system, maintaining and controlling it's functions.

# Networks, Cables and Hardware

Networks: A computer network is made up of hundreds of components that each help to distribute information. Important network hardware includes: cabling, Network Interface Cards (NICs), routers, bridges, hubs, and switches.

Cables: When data is sent over a network, it travels through wires, cables, or cords.

- UTP: Unshielded Twisted Pair
- STP Shielded Twisted Pair
- NIC's: A Network Interface Card

Fiber optics is another medium through which network data travels.

Coaxial Cables: Commonly used by television networks  
Hardware

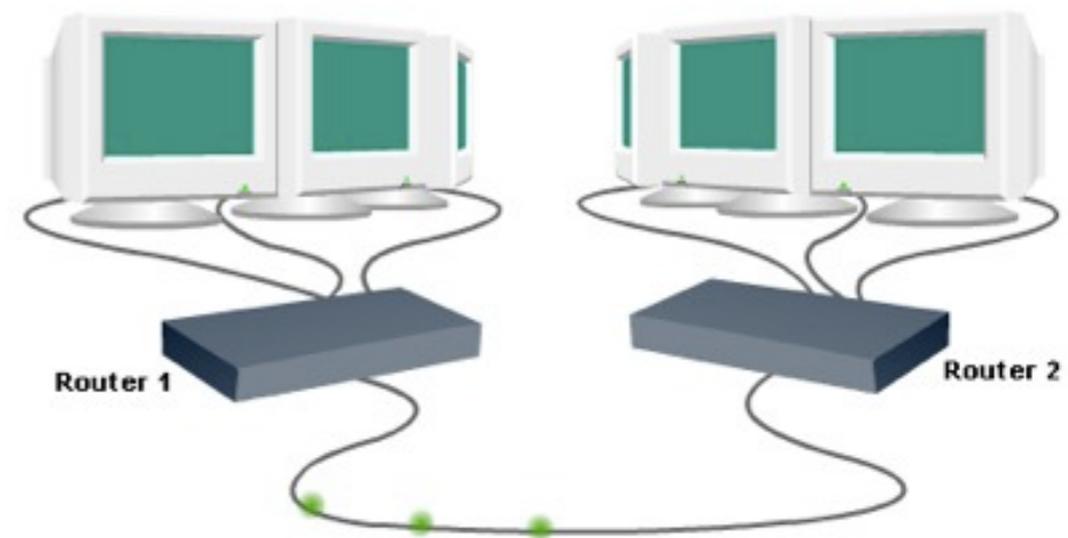
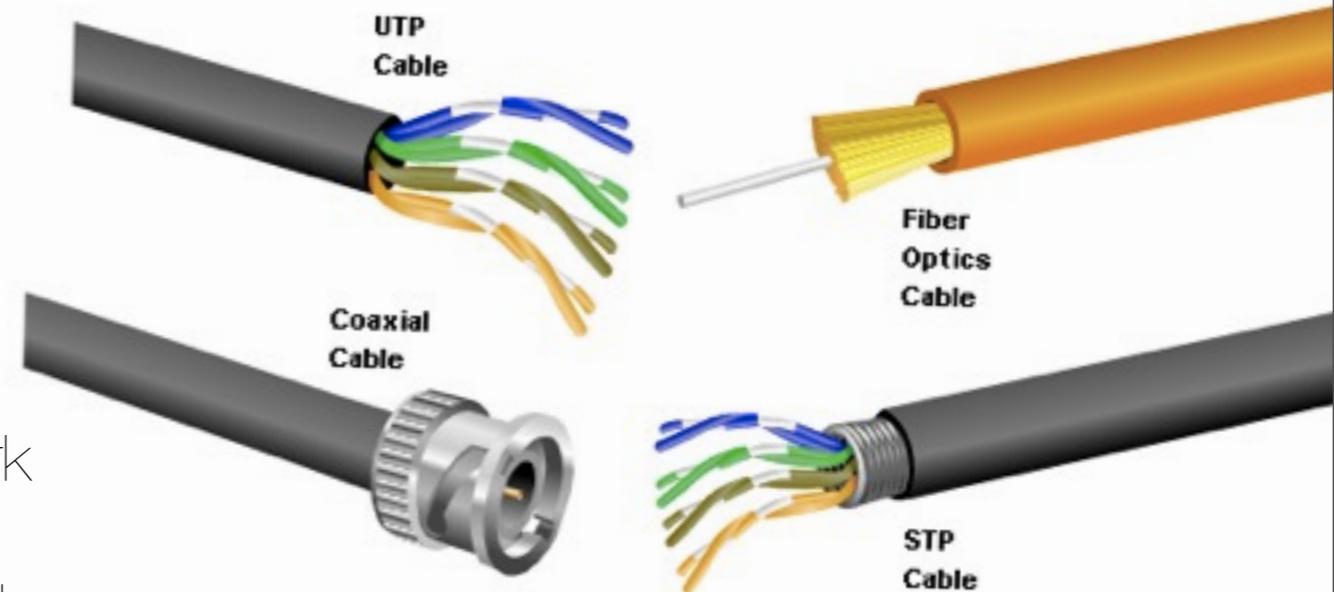
Hubs: Generally, a network is limited to four hubs, but one hub can accommodate many cables.

Repeaters: The two basic types of repeaters are amplifiers and signal regenerators

Bridges: Bridges divide networks into smaller, more manageable sections, helping reduce network traffic.

Switches: A network switch works like a bridge, but it often replaces a hub.

Routers: A device that forwards data packets between Local or Wide Area Network groups.



# windows server operating system

Windows Server 2003 and 2008 adequately handle large amounts of incoming data.

\*Fault tolerance- a computer system's ability to continue operating when hardware fails.

\*Disk Mirroring- the process of recording redundant data for Windows Server 2003 and 2008 fault tolerant operation.

Windows Server 2003 and 2008 also feature Enhanced TCP and IP (Transmission Control Protocol/Internet Protocol). Another feature is their capacity to act as a domain controller. Windows Server can support Windows, Macintosh, and UNIX networking clients and offers services that help integrate these computers within a Windows Server network.

\*The Network Monitor Tool- a useful troubleshooting device: it allows network administrators to quickly and accurately locate trouble spots.

\*Net logon services- require that users log onto the network using logon scripts.

Linked computers create a network, allowing simultaneous information sharing and exchange by multiple users. Each network, no matter the size, is a vital communication and data-sharing tool for businesses and organizations worldwide.

