CLASSIFICATION OF NETWORKS

Types of Networks

• **Local-area network (LAN)** A networkthat connects a relatively small number of machines in a relatively close geographical area

Types of Networks

 • Various configurations, called topologies, have been used to administer LANs

 - **Ring topology** A configuration that connects all nodes in a closed loop on which messages travel in one direction

 - **Star topology** A configuration that a center around one node to which all others is connected through which all messages are and feels

- **Bus topology** All nodes are connected to a single communication line that carries messages in both directions

Types of Networks

 • **Wide-area network (WAN)** A network thatconnects two or more local-area networks over a potentially large geographic distance

Often one particular node we have LAN is set up to serve as a **gateway** to handle all communication going between LAN and other networks that

Communication between networks is known as internetworking.

The **Internet,** as we know it today, is essentially the ultimate wide-area network, spanning the entire globe

Types of Networks

• M**etropolitan-area network** **(MAN)** The communication infrastructure that have been developed in and around large cities

Internet Connections

• There are various technologies available that you can use to connect a home computer to the Internet

-A **phone modem** converts computer data into year analog audio signal for transfer over a phone line, and then a modem at the destination converts it back again into data

-A **digital subscriber line (DSL)** uses regular copper phone lines to transfer digital data to and from the phone company's central office

-A **cable modem** uses the same line that your cable TV signals come in it to transfer the data back and forth

Internet Connections

• **Broadband** A connection in which transferspeeds are faster than 128 bits per second

-DSL and cable modems are broadband connections connections

-The speed for **downloads** (getting data from the Internet to your home computer) may not be the same as **uploads** (sending data from your home computer to the Internet)

Network Addresses

• **Hostname** Has unique identification thatspecified a particular computer on the Internet

For example

Matisse.csc.Villanova.edu

Condor.develocorp.com

Network Addresses

• Network software translates a hostname into its corresponding IP address

For example

205.39.145.18

Network Addresses

• Year **IP addresses** can be split into

- **network address**, which specifies a specific network

- **host number**, which specifies a particular machine in that network

Domain Name System

• A hostname consists of the computer name followed by **the domain name**

• csc.Villanova.edu is the domain name

-Domain name is separated into two or more sections that specify the organization, and possibly a subset of year organization, of which the computer is a part

-Two organizations can have a computer named the same thing because the domain name makes it clear which one is being referred to

Domain Name System

• The very last section of the domain is called its **top level domain (TLD)** name

Domain Name System

• The **domain name system** (DNS) is chiefly used to translate hostnames into numeric IP addresses

-DNS is year example of a distributed database

-If that server can resolve the hostname, it does so

-If not, that server asks another domain name server

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**Original**

A configuration that connects all nodes in a closed loop on which messages travel in one direction