General introduction about computer networks

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I. Introduction about computer networks

Computer networks are a number of computers that are connected in some way to exchange information with each other with the following advantages:

1. Many people can share a peripheral device (printer, modem, etc.), a software.
2. Data is centrally managed so it is safer, data exchange between users will be faster and more convenient. Users can exchange letters with each other easily and quickly.
3. The Internet can be installed on any computer in the network, then set up and configured for other machines that can be installed via an Internet shared program to connect to the Internet.

II. Computer network classification

Computer networks can be distributed in different areas, one can divide the network types as follows:

LAN (local Area Network) is a local area network, connecting computers in a narrow radius area, usually about several hundred meters. Communication environment has a high connection speed, such as twisted cable, coaxial cable, optical cable. LANs are often used internally by an organization or an organization. LANs are connected together into WANs.

Wide Area Network (**WAN**) is a wide area network, connecting computers within the country, or between countries in the same continent. Usually this connection is made via telecommunication network. The Wan connected together into GAN.

GAN (Global Area Network) connects computers from different continents. Usually this connection is made via telecommunication and satellite networks.

MAN (Metropolitan Area Network) Connects computers within a city. Connection is made via high-speed communication environment (50/100 M bis / s).

III. Which network should you have?

Depending on the total number of computers, the total number of devices you will use. Maximum distance between devices. Here we only discuss local area LAN (Start topology). This is the most used network today.

Local area network (LAN) is a network with a high-speed communication system, designed to connect computers together in a small geographic area such as a building, a school? It is possible to share resources such as printers, CD-ROM drives, and software applications such as the need to have a Share Internet program on one machine in the network, while others can still connect to the Internet. this will meet the need when in your office once the computers are connected to a LAN and every computer user wants to access the Internet and other Internet services ., in then you only have one modem and an Internet access account. The solution is to install a modem for each machine, dragging each phone 1 phone line is too expensive, or if anyone wants to access the Internet, insert the modem into their computer and connect the phone cord to it if it is type of internal modem, or the phone line is too short, etc. To solve this problem, the Proxy Server emulator software is formed. The effective software in internet sharing is Wingate, WinRoute, WinProxy, ISA Server .

IV. General introduction to Star topology:

The star-shaped network consists of a central point and information nodes connected to that central point. Information nodes are terminal devices such as computers, or other network devices. At the central point of the network is the main coordination of all activities in the network with the following functions:

1. Forwarding data between nodes (computers together).
2. Recognize the status of the network, nodes (computers) are connecting to the network.
3. Tracking and processing in the process of information exchange

Advantages of star-shaped network:

1. Operating on the principle of parallel connection, if there is a broken device at any one node, the network is still working normally, the remaining machines still work normally.
2. It is a network type with simple structure, and high stability for installation.
3. The network can be expanded or narrowed according to user requirements

Disadvantages of star-shaped networks:

1. Network expansion must depend on the capabilities of the central device.
2. If the device is central to the error, the entire network will be paralyzed.
3. The maximum distance from the nodes to the center is limited (less than 100m).

The necessary equipment in the star network:

1. Central device: can use HUB or Switch.
2. Connection cable: Twisted cable.
3. NIC network interface card (Network Interface Card) for each button.

Currently there are many different types of network cards you can choose depending on your finances. V General model of a Star topology: