Network installation

Technology, Computer

Choosing a network that does not meet an organization's needs leads directly to trouble. A common problem arises from choosing a peer-to-peer network when the situation calls for a server-based network Peer to peer networks shareresponsibilityfor processing data among all of the connected devices. Peer-to-peer networking (also known simply as peer networking) differs from client-server networking in several respects.

According to the computer specifications a peer-to-peer network is inadequate. It can exhibit problems with changes in the network site. These are more likely to be logistical or operational problems than hardware or software problems. For example users may turn off computers that are providing resources to others on the network. (Rutter, 2008). When a network's design is too limited, it cannot perform satisfactorily in some environments. Problems can vary depending on the type of network topology in effect.

The physical topology of a network is the layout or actual appearance of the cabling scheme used on a network. Multipoint topologies share a common channel; each device needs a way to identify itself and the device to which it wants to send information. The method used to identify senders and receivers is called addressing. (Mitchel, 2008)

The term topology, or more specifically, network topology, refers to the arrangement or physical layout of computers, cables, and other components on the network. " Topology" is the standard term that most network professionals use when they refer to the network's basic design. In addition to the term " topology," there are other terms that are used to define a

network's design: Physical layout, Design, Diagram or Map. (Mitchel, 2008). A network's topology affects its capabilities.

The choice of one topology over another will have an impact on the type of equipment the network needs, Capabilities of the equipment, Growth of the network and Way the network is managed. According to Rutter, a network topology needs planning. For example, a particular topology can determine not only the type of cable used but also how the cabling runs through floors, ceilings, and walls. Topology can also determine how computers communicate on the network. Different topologies require differentcommunicationmethods, and these methods have a great influence on the network.

The most popular and recommendable method of connecting the cabling in the proposed computer network is the client server architecture of star topology. Here each device connects to a central point via a point-to-point link. Several names are used for the central point including the following: Hub, Multipoint Repeater, Concentrator, or Multi-Access Unit (MAU). (Microsoft MVP, 2004).

For the recommended network, the central point ought to be an intelligent hub, which can make informed path selections and perform some network management. Intelligent hubs route traffic only to the branch of the star on which the receiving node is located. If redundant paths exist, an intelligent hub can route information around normally used paths when cable problems occur. Routers, bridges, ; switches are examples of hub devices that can route transmissions intelligently. These hubs are advanced such that they

are able to accommodate several different types of cables. In this case there can be a main hub (the hybrid) with other sub-hubs especially for growth purposes.

Intelligent hubs also can incorporatediagnosticfeatures that make it easier to troubleshoot network problems. Hub-based systems are versatile and offer several advantages over systems that do not use hubs. In the standard star topology with hubs, a break in any of the cables attached to the hub affects only a limited segment of the network mostly only one workstation while the rest of the network keeps functioning. In this kind of a system, wiring systems can be changed or expanded as needed, different ports can be used to accommodate a variety of cabling types and monitoring of network activity and traffic can be centralized. (Rutter, 2008)

The star topology has many benefits; first each device is isolated on its own cable. This makes it easy to isolate individual devices from the network by disconnecting them from the wiring hub. Secondly all data goes through the central point, which can be equipped with diagnostic devices that make it easy to trouble shoot and manage the network.

Lastly the Hierarchical organization allows isolation of traffic on the channel. This is beneficial when several, but not all, computers place a heavy load on the network. Traffic from those heavily used computers can be separated from the rest or dispersed throughout for a more even flow of traffic. According to Rutter This topology originated in the early days of computing when computers were connected to a centralized mainframe computer.

One machine can act as a server and as a client at the same time since the setup is not concerned with security. This machine should be the one with the highest processing speed (3GHz), largest Random Access memory (1 Gb) and enough disk space (120 Gb). The importance of the server is to concentrate common peripheral devices, which do not need to be in multiples in the network. This computer can meet the processing and storage needs of other users, it can be able to support many more users in cases of expansion, it also enables administration of resources centrally in cases of troubleshooting there is more consistency and reliability and it also provides backup for the other machines.

The server has many dedicated specialized functions in addition to providing basic network services. First it can be dedicated to managing network printers and print jobs to avoid unnecessary spooling. Secondly it can manage modems and other types of communication links. It can also be used to store large databases and run some database applications.

Fourthly it can run an application for the access across the network. It can act as a mail server and provide access to email services as well as sending and forwarding email messages to intended recipients in the network. Lastly a server may provide a wide range of information to the public Internet or private intranets form the network. Upgrades can be to maintain, troubleshoot, update and fix the other computers remotely. It's way more effective than trying to explain what to do over the phone.

Conclusion

Topologies remain an important part of network design theory. You can probably build a home or small business network without understanding the difference between a bus design and a star design, but understanding the concepts behind these gives you a deeper understanding of important elements like hubs, broadcasts, and routes

Work Cited

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