March 9, 1998

Networking – A Broad Perspective

A Computer network combines computer hardware with computer software to enable individual computers to communicate with each other. The importance in computer networks is allowing the computer user to communicate with data or information available on other computers, as well as other computer users connected to the network.

Networking, or connecting computers, has been available for a long time on Super Computers, Mainframes, and minis due to the requirements for external data and processors by organisations operating these computers. Networking has grown steadily more important for microcomputers as it has grown in importance for organisations with more and more data and resources tied to single microcomputers that would preferably be available to others.

In organisations where network were not available, but a number of microcomputers existed two common ways of sharing information and resources were the 'sneaker-net' and the 'data-switch.' The 'sneaker-net' is the use of shoes (sneakers) to walk floppy diskettes between machines. The data-switch allows a number of computers to connect to a single printer for printing.

Computer networks can be small with just two computers, or a room full of computers, or it can connect the computers in a whole building, a group of buildings, connect computers in a city, region, country or even span across different nations.

Local Area Network (LAN)

A Local Area Network (LAN) is a network that connects computers within a small geographic area, such as a building.

At the Queen Salote Laboratory, a local area network, the network allows the computers and users to share the qsc-server1 which holds course notes (http://www.qsc.edu.to) , course required files such as graphics/pictures and exercise documents. The QSC LAN also lets computer users share the two laser printers without having to unplug and move the printer around.

Wide Area Network (WAN)

A Wide Area Network (WAN) is a network that connects computers across a large geographic area, such as a city or country. A WAN generally connects dispersed, physically separated LANs.

For example, Universities generally operate and maintain WANs within the university grounds (often termed Campus Wide Area Network to designate that the network covers the University Campus.) The WAN is actually made up of many different LANs belonging to each of the University's schools, and administration offices. The School of Engineering operates its own computers and computer network with special tools specific to their needs while the Mathematics department maintains its own equipment and the Administration department has its own computer network.

Network Hardware

The computer network physical infrastructure is very dependent on the needs and demands required of the network. Some components are generic, used in all networks, while other networks require additional/differing hardware.

Topology

Network Software

Examples of uses for Networks

Reference

USP, CS121 Information Systems 1 – Course Book Three, (Suva, USP, 1997)