Journal of Computer Science and Applications.
ISSN 2231-1270 Volume 6, Number 1 (2014), pp. 67-68

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Transferring Data or Information in Heterogeneous Computer Networks

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In modern world, data communication has become an extremely important aspect. It involves exchange of data between two or more computers. In any data communication systems three characteristics are desired- correct delivery, accurate delivery and timely delivery.

A collection of interconnected computers that allow exchange of information or data, among each other and sharing of resources is called a computer networks. No computer is an island; they are connected to one another forming a network in the form of a LAN(Local Area Network), MAN(Metropolitan Area Network) or a WAN (Wide Area Network). When two or more networks are connected, they become an interconnecting multiple networks of one or more communication and information exchange. Most networks technologies are designed for a specific purpose. For example, each enterprise chooses hardware technology appropriate for their specific communication needs and budget.

In networking all the devices (generally computers) are compatible with each other, but it may or may not be the case with internetworking. When two or more networks are connected together to form an internetwork, it is quite possible that the networks are incompatible to each other in many aspects. They may differ in terms of their topologies (set of rules for data transfer between two computers), signaling, addressing scheme and transmission mechanism as well as in the media (cables) used for transmission. There are two closely related problems which building up of a large network : **heterogeneity** and **Scale.** Thus any network may be homogeneous or heterogeneous depending on whether the network components are similar or dissimilar.

Internetworking is a highly sought-after feature whereby multiple distinct computer networks can be interconnected. This allows sharing of information and resources across physical boundaries. The goal of internetworking is to solve the various differences and create a seamless internet work. The internet is a network of computer networks which differ in their hardware and software characteristics, and yet they work seamlessly with each other. There has been an exponential increase in the nontraditional internet end systems connected together by communication links. In fact

this has been the most radical change in the field of networking. Another revolutionary aspect in the field of networking is the growth in the area of networking services and applications, as witnessed by the emergence of the web allows distributed applications like instant messaging, ubiquitous email use, peer to peer applications, internet telephony, audio and video streaming, etc including wireless access.

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