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## High Demand File Distribution (Content Delivery Networks and Distributed File Systems)

Traditionally in the past, when new files or content in the form of video, music, software, or web pages become available, as demand increases, accessibility and available bandwidth decrease. Alleviating this demand is of particular concern to provide high availability and distribution to end-users. Traditional methods of file distribution involve the basic client-server methods. Content providers of the past have used methods such as simple geographically distributed servers or file mirrors to compensate but in the past five years, Content Delivery Networks have emerged in usage. Content Delivery Networks are heterogeneous networks of servers that use various graph and routing algorithms to provide caching or proxies that give users seamless delivery of files or content. Content Delivery Networks eliminate end-user confusion, increase reliability, and speed through dynamic routing of content through path determination of content. These methods and channels are employed by various content providers as means of distributing files without the need for additional user applications. Even less traditional channels of file delivery involve peer-to-peer applications and networks. These peer-to-peer networks operate by shuffling data between one or more peer computers. The inherent benefit of these programs is that the popularity of the files assists in the distribution of the files themselves. These applications employ hashed and checksum coded file packets to ensure consistency across the peer network and employ parallel file delivery whenever possible as opposed to a single file stream. Some peer-to-peer applications employ incentive-based file sharing to reinforce availability of files across the network. Peer to peer applications hold dubious standing with major content providers and will provide good topical discussion regarding ethics.

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