2.1 Network Operating Systems for Client / Server.

Network operating systems can be *based on a client–server model (architecture) in which a server enables multiple clients to share resources*. Client-server network operating systems *allow networks to centralize functions and applications in one or more dedicated file servers.* The server is the center of the system, allowing access to resources and instituting security. The network operating system *provides the mechanism to integrate all the components on a network to allow multiple users to simultaneously* share the same resources regardless of physical location.

A network operating system is an operating system *designed for the sole purpose of supporting workstations, database sharing, application sharing and file and printer access sharing* among multiple computers in a network. *Certain standalone operating systems, such as Microsoft Windows NT and Digital's OpenVMS, come with multipurpose capabilities and can also act as network operating systems. Some of the most well-known network operating systems include Microsoft Windows Server 2003, Microsoft Windows Server 2008, Linux and Mac OS X*

A network operating system provides printer sharing, common file system and database sharing, application sharing, and the ability to manage a network name directory, security, and other housekeeping aspects of a network.

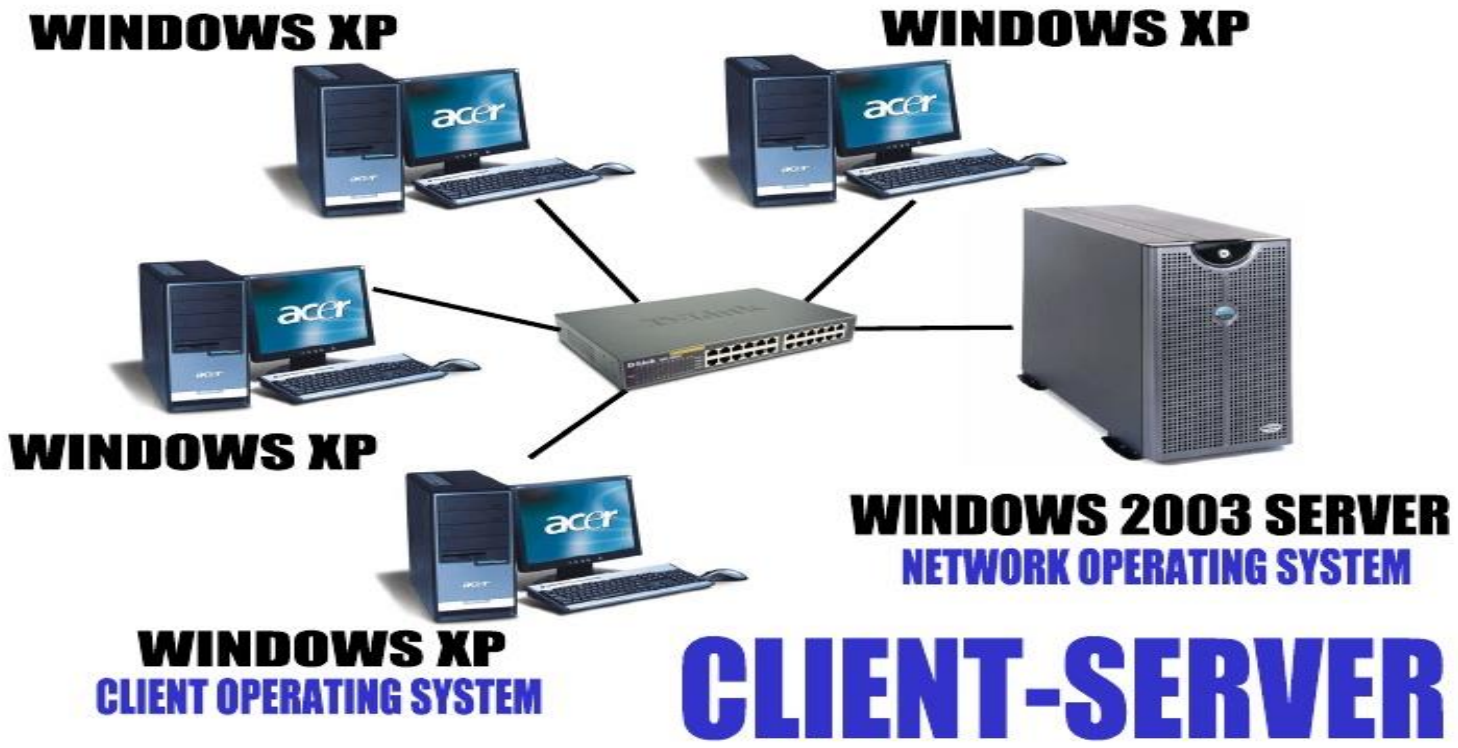
A network operating system (NOS) is an operating system that manages network resources: essentially, an operating system that includes special functions for connecting computers and devices into a local area network(LAN). The NOS manages multiple requests (inputs) concurrently and provides the security necessary in a multiuser environment

The ***advantages*** include:

- *Centralized* servers are more stable.
- Security is provided through the server.
- New technology and hardware can be *easily integrated* into the system.
- Hardware and the operating system can be *specialized,* with a focus on performance.
- Servers are able to be *accessed remotely* from different locations and types of systems.

The ***disadvantages*** include:

- Buying and running a server raises costs.
- *Dependence* on a central location for operation.
- Requires *regular maintenance and updates*.



2.1.1 Examples of NOS (Explanation not required)

- Novell NetWare, Banyan VINES
- Microsoft Windows Server 2003, 2008
- Linux and Mac OS X

2.1.2 Common Services of NOS.

- Ability *to access the server both in GUI and command-level interface*
- *Execute* all or most processes from OS commands
- *Advanced-level hardware, software and network configuration services*
- *Install/deploy* business applications and/or web applications
- Provides *central interface* to manage users, implement security and other administrative processes
- *Manages and monitors* client computers and/or operating systems

The salient features of network operating systems are:

- Basic operating system features support *like protocol support, processor support, hardware detection and multiprocessing support for applications*
- Security features like *authentication, restrictions, authorizations and access control*
- *Features for*
- Directory and name services management
- *User management* features along with provisions for remote access and system management
- *Internetworking features* like routing and WAN ports
- *Clustering* capabilities

Common tasks associated with network operating systems include:

- *User* administration
- *System* maintenance activities like backup
- Tasks associated with *file* management
- *Security* monitoring on all resources in the network
- Setting *priority* to print jobs in the network