

113 Computer Science 2

Note Title

9/7/2005

Differences

Single User OS	Multi User OS
A single-user operating system provides access to the computer system by a single user at a time. If another user needs access to the computer system, they must wait till the current user finishes what they are doing and leaves.	A multi-user Operating System allows for multiple users to use the same computer at the same time and/or different times.
Operating systems such as Windows 95, Windows NT Workstation and Windows 2000 professional are essentially single user operating systems.	Examples of multi-user operating systems are UNIX, Linux (a UNIX clone) and mainframes such as the IBM AS400.
Resources and utilities are dedicated to only one computer/terminal/user and so the OS architecture is not complex.	In comparison to a single user OS, a multi-user OS has to share all its resources/utilities over a network architecture and hence is more complex.
Not all resources are utilized since one user might not (will not) use/share all the resources at the same time.	Despite the fact that hardware is expensive for a multi-user OS, since resources are being shared, nothing sits idle and hence the cost is shared between users.
Performance of a single user OS is much faster since it is a dedicated machine.	Since time and speed are divided amongst multiple users, performance gets slower as more users start sharing the OS.

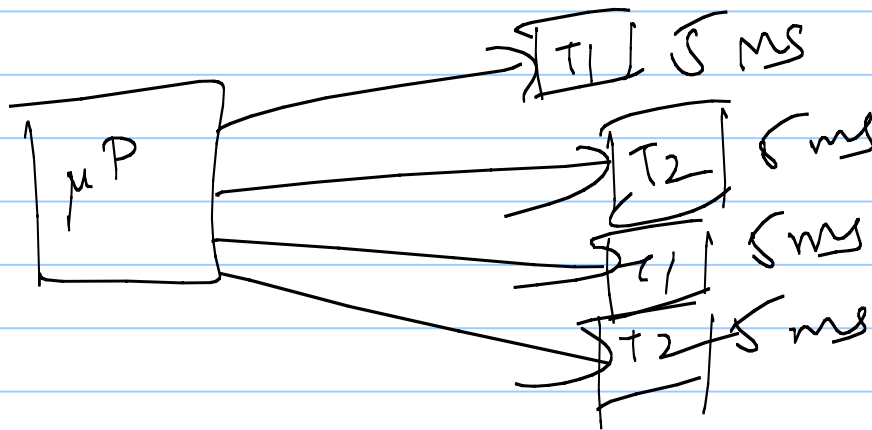
Comparing a Windows NT
Operating System and a
Linux OS.

Similarities

1. Both operating systems have a similar architecture of systems and application software and their organization.
2. Both are able to interact to various devices using serial and parallel ports (keyboards, printers etc)
3. Both of them offer an interactive way to maintain data and information for the end user. This includes file-naming conventions and memory management.
4. Both kinds of OS have the concept of a PATH which enables users to work with direct locations for folders and files.
5. User and account/security management exists in both kinds however it is more elaborate and enhanced on a multi-user OS for instance Linux.

Multi-tasking

Ability of a processor to divide its processing time EQUALLY between multiple tasks. This is also called "TIMESHARING".



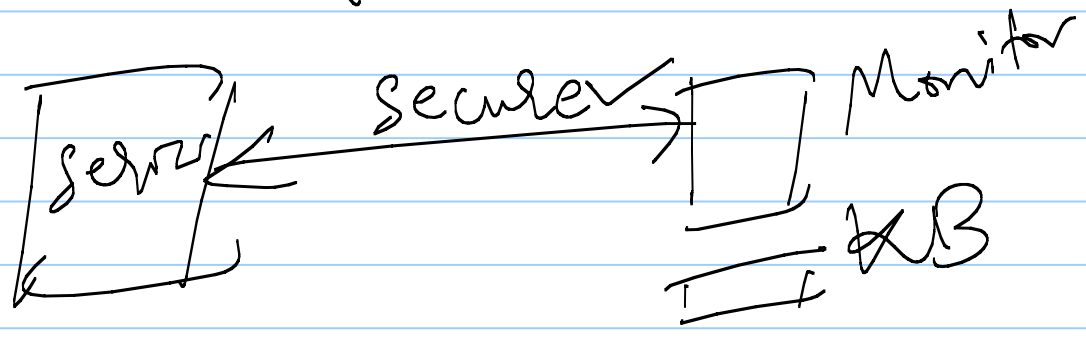
Linux

file1

d (r) - - r
rwx rwx rwx
4 0 0

\$ ls

\$ chmod file1 600

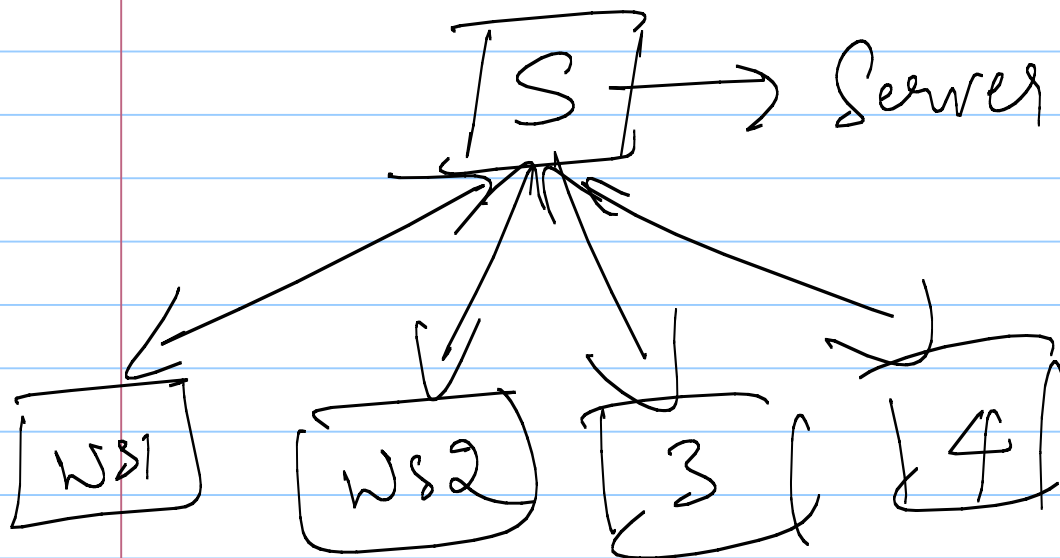


Paper 1, SECTION A

3.4 Networked Computer Systems

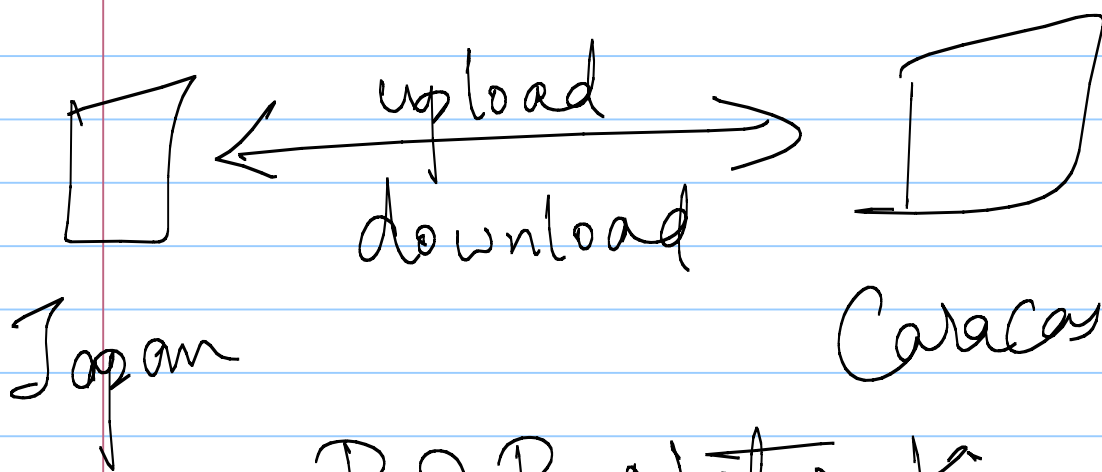
Server: A computer that offers service and services a client's request.

Client: A computer which requests for a service.



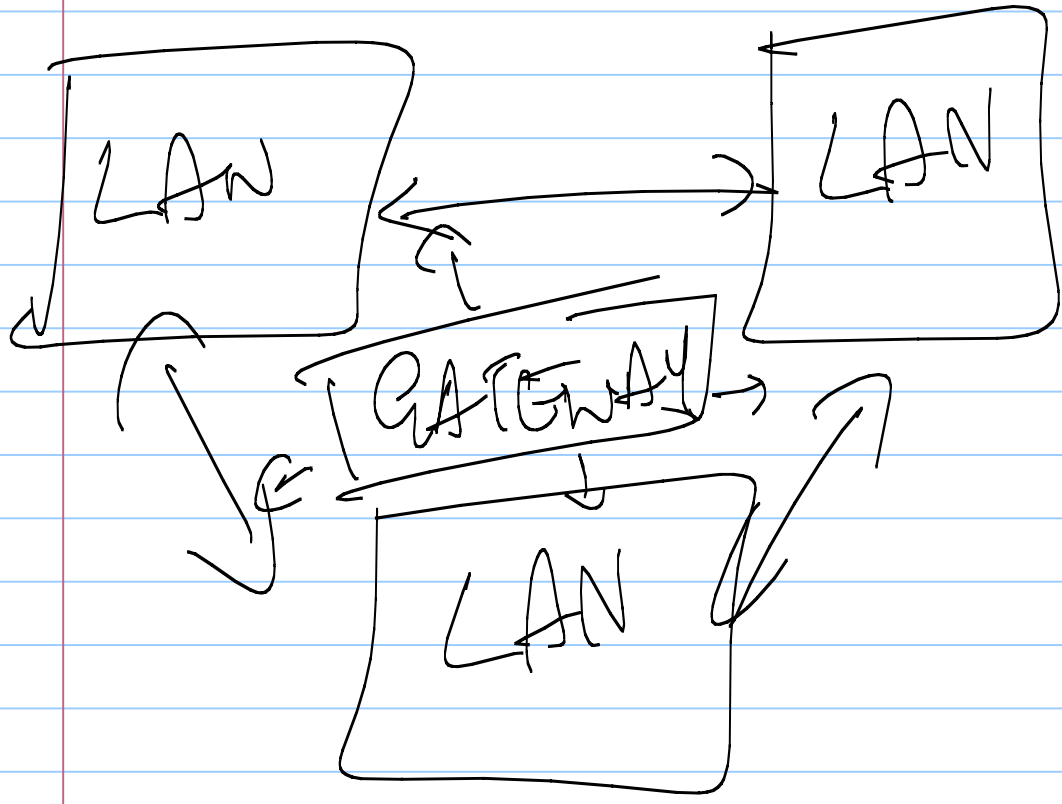
A computer that is both a server & a client is called
"PEER"

KAZAA

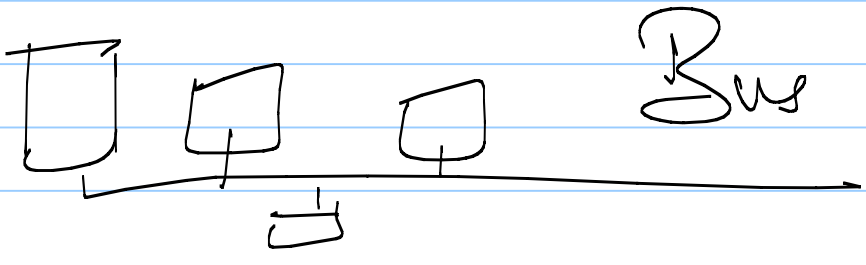
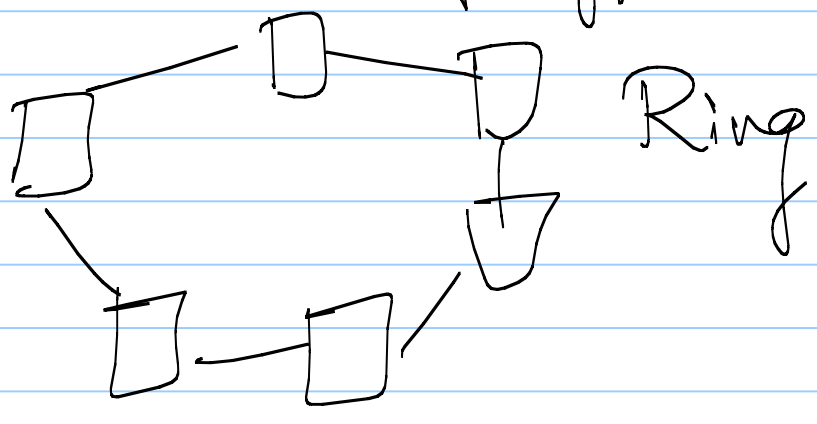


P2P Networking

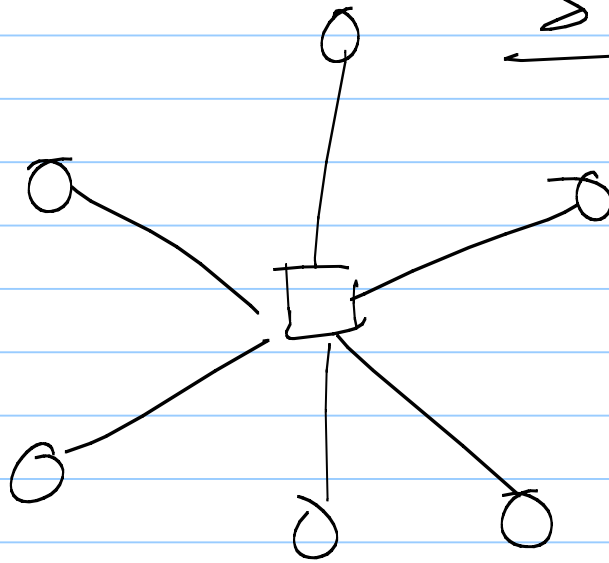
Internet



Network Topology



STAR



HYBRID

Mixed combination of 2 or more standard topology.