CHAPTER VI
Server Operating Systems

CHAPTER OVERVIEW

Server configurations described in Chapter V are operated by server operating systems. Server-based application software and business-critical applications are installed on these platforms. Taken together, they form what is called “server operating environment,” the hardware-operating system platform responsible for running business applications and keeping “business in business.” Chapter VI explains in more details server operating systems and their role in ensuring continuous computing and hence business continuity.

THE BASICS OF SERVER OPERATING SYSTEMS

Server operating systems are described according to several attributes. One of the most widely used approaches is the one that makes classification according to the processor that is used by a server configuration.

Servers are operated by server operating systems. By definition, an operating system is a collection of programs that manage the computer’s activities. The main function of the operating system is to control the computer system’s operations including monitoring activities and the assignment of system tasks. The operating system supervises the overall operation of a computer, including such tasks as monitoring the computer’s status, handling executable program interruptions, and scheduling of operations, and controlling of input and output processes. Operating system provides not only an interface between the user and the hardware itself but also an operating platform on top of which other programs—application software, can run.
Every operating system should include the basic functions such as: process management, memory management, file management, secondary storage management, I/O management, network management, security and protection management, user management, and so forth.

Computers with single processor never really do more than one job at a time, but since they are fast enough in processing data, from user’s perspective it looks like doing many things at once. Multitasking is basically the ability to run multiple programs or tasks “at the same time.”

As almost all contemporary operating systems support multitasking capabilities, but not all of them are multi-user operating systems, we will adopt the approach, which divides all operating systems into two main groups:

- desktop operating systems (supporting multitasking, but not multi-user features, they are single user operating systems), and
- server operating systems (supporting both multitasking and multi-user capabilities).

Actually, having in mind portable and mobile computing devices, we can say that today’s computers use three types of operating systems:

a. desktop operating systems (DOS)
b. server operating systems (SOS)
c. mobile operating systems (MOS).

Desktop OSs are single-user and multi-tasking operating systems, while server OSs are multi-user and multi-tasking operating systems. Unlike server OS that are aimed at running mission-critical applications, desktop OSs run on desktop platforms and provide both local processing capabilities and client access to server systems. Mobile computing devices run mobile (portable) operating systems and have similar features as desktop operating systems.

Server operating systems can be classified in different ways. One of the most widely used approaches is the one that makes classification according to the processor that server configuration is based on. We are going to respect this approach as well. While most people consider Windows Server, UNIX and Linux as being current mainstream server operating systems, most widely used server operating systems today are:

1. **Intel/AMD-based commercial server operating systems** such as the following commercial operating systems: Windows NT Server/Windows 2000/Windows