Unit OS2:
Operating System Principles

2.5. Quiz

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Windows OS Design Goals

The design of Windows is closely related to a number of initial design goals. Which one was not among them?

a) Portability

b) Seamless networking support

c) Efficiency

d) (hard) realtime

OS Structuring

The Separation of OS functionality in *kernel/user*-mode components has the following goals:

a) Increasing OS efficiency

b) Protection of concurrent activities of different users against each other

c) Protection of file system consistency

Subsystems

Which one of the following subsystems does not exist in the Windows operating system family?

a) WIN32

b) OS/2

c) POSIX

d) VMS

Roots of Windows

Windows has its roots in a number of operating systems. Which OS did not contribute to Windows?

a) VMS

b) MS-DOS

c) IBM OS/360

d) Unix

Similar or identical?

Client and Server versions of the Windows OS differ in the following:

a) Kernel implementation

b) Maximum size of the file system

c) Default quantum length used for CPU scheduling

d) Maximum number of processes

Local System Account

What are the restrictions applicable to services started by the Windows *Service Controller Manager* running under the local system account?

a) No registry access

b) No access to network volumes

c) No access to devices except floppy and mouse

d) No access to the file system

Windows - supported Hardware

During its evolution, Windows has been ported to a number of CPUs. Which processor architecture has never been supported by Windows?

a) Intel 80486

b) Motorola PowerPC

c) DEC Alpha AXP

d) SUN Sparc II

e) MIPS R4000

Processes in Windows

- Which of the following does a process not contain?

a) A private address space

b) A set of open resources

c) One or more threads

d) A hardware context

Thread concept

What is a thread?

a) Component of most fabrics

b) Execution context within a process

c) Subroutine in a program

d) Main routine in a program

Address space

What is the default size of the user address space in 32bit Windows?

a) 1 gigabyte

b) 2 gigabytes

c) 3 gigabytes

d) 4 gigabytes

Protection

A user program in Windows can corrupt operating system memory?

a) True
b) False

Protection

Kernel mode is used to protect a process from:

a) Corrupting operating system memory
b) Corrupting another process' memory
c) Being corrupted by the operating system
d) Being corrupted by another process

Operating System Architecture

Windows is a microkernel-based OS design

a) True
b) False

Microkernel

Windows is not a true microkernel because:

a) The kernel is more than 100kb in size
b) It does not run on handheld devices
c) It is not based on Mach
d) All kernel mode components share the same address space

Hardware support & portability

How many CPU architectures does Windows 2000 support?

a) One

b) Two

c) Three

d) Four

Multiprocessing

Windows' multiprocessor support is called:

a) Parallel

b) Mirrored

c) Symmetric

d) Asymmetric

Subsystem support

Applications call native Windows system calls directly

a) True
b) False

Subsystems

🔘 Which subsystem provides the most services?

a) MS-DOS
b) Win32
c) POSIX
d) OS/2

Subsystem functionality

🔘 What do environment subsystems NOT do?

a) Interface to native Windows system calls

b) Define process & file system semantics

c) Service interrupts

d) All of the above

Accessing Windows functionality

🔘 Which dynamic link library (DLL) is the interface to the native Windows API?

a) NTDLL.DLL

b) Kernel32.dll

c) NtNative.dll

d) NtOSkrnl.exe

Windows subsystem implementation

- The Windows subsystem is partially implemented as device driver

a) True since Windows XP

b) False

c) True since Windows NT4

Kernel versions

- How many versions of NtOSkrnl.exe in 32-bit Windows are there?

a) 2

b) 4

c) 6

d) 5

Checked build

What is the purpose of a checked build?

a) To aid in debugging device drivers
b) For performance testing
c) To check for network problems
d) To debug multiprocessor issues

Windows kernel

What is the role of the Windows kernel?

a) Abstract differences among CPU architectures
b) Provide low level synchronization primitives
c) Perform thread scheduling decisions
d) All of the above

Hardware Abstraction Layer

What is the role of the HAL?

a) Prevent drivers from accessing hardware directly

b) Make all CPUs look the same to device drivers

c) Provide a portable interface to the motherboard

d) Provide access to the I/O system bus