Windows XP Introduction

- Reading: OS Concepts pp.789-823 (concentrating particularly on pp.789-705)

- "A 32/64 bit preemptive multitasking operating system"
- "client-server architecture to implement multiple operating system personalities"
- "multi-user operating system"

1

Design – Security

- NT 4.0 received C2 security classification
  - _____
  - _____
    _____
  - C2
    - _____
    - _____
    - _____

- XP improves security further through
  - _____
  - _____

2

Design – Reliability

- Improved reliability from
  - _____
  - _____
  - _____
  - _____
  - _____

- XP improves <u>perceived</u> reliability by
  - _____

3

Design – Compatibility

- Native layer is either Win32 or Win64
- Application compatibility with
  - Win64
  - Win32
  - Win16
  - MSDOS
  - OS/2
  - POSIX: _____
- _____
  _____

4

Design – Performance

■ High performance on

 – _____

 – _____

 – _____
 _____

■ Windows 2000 used

 – _____

 – _____

 – _____

■ XP adds

 – _____

 – _____

 – _____

 – _____

5

Design – Extensibility & Portability

■ Extensibility - Layered architecture

 – _____

 – _____
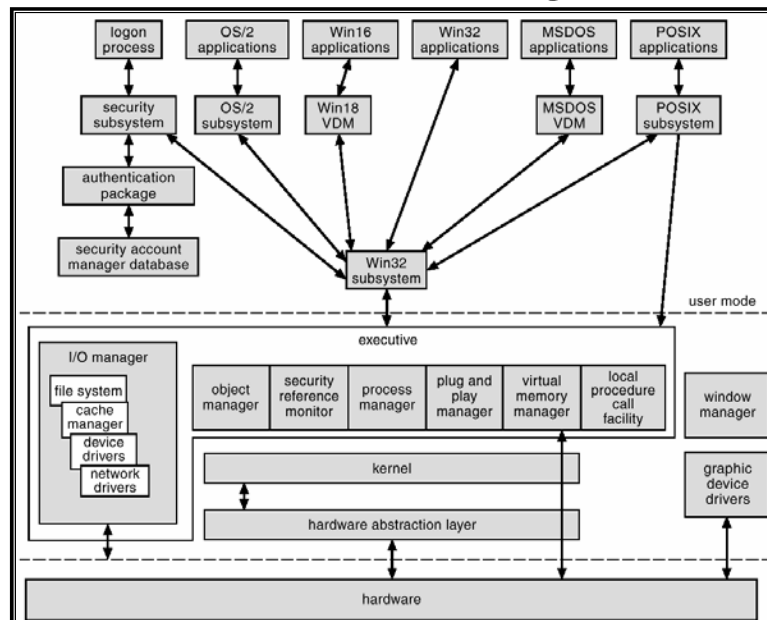
 – _____

 – _____

■ Portability

 – _____

 – _____

 – _____

  • _____

6

Design – International Support

- National Language Support API provides for different locales
- UNICODE character set (16 bit characters) is the native character code for Windows XP
  - _____
    _____

7

Windows XP block diagram

8

Components – HAL

- Hides hardware differences
- Helps make XP portable
- Reduces the need for rewriting device drivers for each platform
- Helps support symmetric multiprocessing

9

Components - Kernel

- Thread Scheduling
  - _____
  - _____

- Synchronization Primitives
  - _____
  - _____

- Exception & interrupt handling
  - _____
    _____
  - _____
    _____

10

Components - Executive

- Object Manager _____

_____

- Virtual Memory Manager _____

_____

- Process Manager _____

_____

- LPC facility _____

_____

- I/O manager _____

_____

11

Components - Executive

- Cache manager _____

_____

_____

- Security reference monitor _____

_____

- Plug-and-play manager _____

_____

- Registry _____

_____

- Booting _____

_____

12

Components – (Environmental) Subsystems

- Win64/Win32
- Win16
- MSDOS
- OS/2
- POSIX
- Security

13