Survey of Microsoft Windows Operating Systems

Qasim Siddique

Qasim_1987@hotmail.com

Abstract **Operating system is the essential need of today computing world. The operating system acts as the host for computing application run on the machine. One of the main process of the operating system is to handle the detail of the operation of hardware so the operating system must be reliable and must required less operating time. This paper provide a survey of various operating system designed by the Microsoft Cooperation. The main goal is to determine the new feature, system requirements, disk management operating system, kernel and graphical user interface provided by the Microsoft windows operating systems.**

Keywords: kernel, Window operating System, Graphical user interface, disk management

I. INTRODUCTION

An operating system is one whose correctness involves both the logical correctness of output and their timeless. It must satisfy response time constraints or risk severe consequences including failures.

An Operating system is responsible for the management and coordination of activities and the sharing of the resources of the computer. Operating systems offer a number of services to application programs, hardware and users. Users interact with the operating system with some kind of software user interface (SUI).Like typing commands by using command line interface or using a graphical user interface. However Microsoft windows provide a Graphical user interface as well as Command line interface.[10]
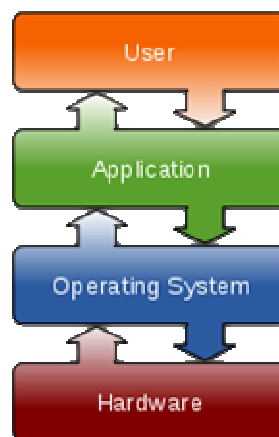
Common contemporary operating system families include BSD, Darwin (Mac OS X), GNU/Linux, SunOS (Solaris/OpenSolaris), and Windows NT (XP/Vista/7). While servers generally run Unix or some Unix-like operating system, embedded system markets are split amongst several operating systems [1] [2]

Figure 1 Mac OS X "Snow Leopard" Interface [35]

Microsoft Windows is a family of proprietary operating systems that originated as an add-on to the older MS-DOS operating system for the IBM PC. Modern versions are based on the newer Windows NT kernel that was originally intended for OS/2. [9] Windows runs on x86,

x86-64 and Itanium processors. Earlier versions also ran on the DEC Alpha, MIPS, and Fairchild (later Intergraph) Clipper and PowerPC architectures. The most widely used version of the Microsoft Windows family is Windows XP, released on October 25, 2001. [8]

Figure 2 Operating System Placements [34]

This paper is organized as follows: Section 2 Present the overview of the Microsoft Windows Operating System. Section 3 present the System requirement of the Windows Operating System Section 4 present the system detail of feature available is different windows operating system and finally we conclusion are given in Section 5.

II. OVERVIEW OF WINDOWS OPERATING SYSTEM

Microsoft Windows is a series of software operating systems and graphical user interfaces produced by Microsoft. Microsoft first introduced an operating environment named Windows in November 1985 as an-add on to MS-DOS in response to the growing interest in graphical user interfaces (GUIs). [17] Microsoft Windows came to dominate the world's personal computer market, overtaking Mac OS, which had been introduced previously. As of July 2009, Windows had approximately 93% of the market share of the client operating systems for usage on the Internet [18]

This section provides an overview of the different version Windows Operating System.

Figure 3 Screenshot of Windows 98 [5]

Windows 98 (codenamed *Memphis*) is a graphical operating system released on 25 June 1998 by Microsoft and the successor to Windows 95. Like its predecessor, it is a hybrid 16-bit/32-bit monolithic product based on MS-DOS. [3]

Figure 4 Microsoft Windows 98 Logo [5]

Windows 98 Second Edition [5] is an updated release of Windows 98, released on 5 May 1999. It includes fixes for many minor issues, improved USB support, and the replacement of Internet Explorer 4.0 with Internet Explorer 5.0. Also included is Internet Connection Sharing, which allows multiple computers on a LAN to share a single Internet connection through Network Address Translation. Other features in the update include Microsoft NetMeeting 3.0 and integrated support for DVD-ROM drives. A memory overflow issue was resolved which in the older version of Windows 98 would crash most systems if left running for 50 days [4] Windows 98 was the first operating system to use the Windows Driver Model (WDM). This fact was not well published when Windows 98 was released and most hardware producers continued to develop drivers for the older driver standard, VxD [6]

B. Windows Millennium Edition

Figure 5 Screenshot of Windows 2000 [32]

Windows ME is a hybrid 16-bit/32-bit graphical operating system released on September 14, 2000 by

Windows 98 and, just like Windows 98, was targeted specifically at home PC users. [12] It included Internet Explorer 5.5, Windows Media Player 7, and the new Windows Movie Maker software, which provided basic video editing and was designed to be easy for home users. Microsoft also updated the graphical user interface and the shell features and Windows Explorer in Windows Me with some of those first introduced in Windows 2000, which had been released as a business oriented operating system seven months earlier.

Figure 6 Microsoft Windows ME Logo [32]

Windows Me could be upgraded to Internet Explorer 6 SP1, but not to SP2 (SV1) or Internet Explorer 7, and Windows Media Player 9 Series. Microsoft .NET Framework up to and including version 2.0 is supported.

C. Microsoft Windows 2000

Figure 7 Screenshot of Windows 2000 [32]

Windows 2000 is a line of operating systems produced by Microsoft for use on business desktops, notebook computers, and servers. Released on February 17, 2000, [13] it was the successor to Windows NT 4.0, and is the final release of Microsoft Windows to display the "Windows NT" designation. It was succeeded by Windows XP for desktop systems in October 2001 and Windows Server 2003 for servers in April 2003[14]

Figure 8 Microsoft Windows 2000 Logo [32]

Four editions of Windows 2000 were released: Professional, Server, Advanced Server, and Datacenter Server.[15] Additionally, Microsoft sold Windows 2000 Advanced Server Limited Edition and Windows 2000 Datacenter Server Limited Edition, which were released in 2001 and run on 64-bit Intel Itanium microprocessors.[16] While each edition of Windows 2000 was targeted to a different market, they share a core set of features, including many system utilities such as the Microsoft

Management Console and standard system administration applications.

D. Editions

- Windows 2000 Professional
- Windows 2000 Server
- Windows 2000 Datacenter Server
- Windows 2000 Advanced Server

E. Windows XP

Figure 9 Screen shot of windows XP [33]

Windows XP is a line of operating systems produced by Microsoft for use on personal computers, including home and business desktops, laptops, and media centers. The name "XP" is short for "experience".[24] Windows XP is the successor to both Windows 2000 Professional and Windows Me, and is the first consumer oriented operating system produced by Microsoft to be built on the Windows NT kernel and architecture. Windows XP was first released on October 25, 2001, and over 400 million copies were in use in January 2006, according to an estimate in that month by an IDC analyst. [25] It was succeeded by Windows Vista, which was released to volume license customers on November 8, 2006 and worldwide to the general public on January 30, 2007. Direct OEM and retail sales of Windows XP ceased on June 30, 2008. Microsoft continued to sell XP through their Custom built PC (smaller OEMs who sell assembled computers) until January 31, 2009. [26][27].

F. Windows Vista

Figure 10 Screen shot of Windows Vista [33]

Windows Vista is a line of operating systems developed by Microsoft for use on personal computers, including home and business desktops, laptops, tablet PCs, and media center PCs. Prior to its announcement on July 22, 2005, Windows Vista was known by its codename "Longhorn."[28] Development was completed on November 8, 2006; over the following three months it was released in stages to computer hardware and software manufacturers, business customers, and retail channels. On January 30, 2007, it was released worldwide,[29] and was made available for purchase and download from Microsoft's website.[30] The release of Windows Vista came more than five years after the introduction of its predecessor, Windows XP, the longest time span between successive releases of Microsoft Windows desktop operating systems.

Windows Vista contains many changes and new features, including an updated graphical user interface and visual style dubbed Windows Aero, a redesigned search function, multimedia tools including Windows DVD Maker, and redesigned networking, audio, print, and display sub-systems. Vista aims to increase the level of communication between machines on a home network, using peer-to-peer technology to simplify sharing files and digital media between computers and devices. Windows Vista includes version 3.0 of the .NET Framework, allowing software developers to write applications without traditional Windows APIs.

III. SYSTEM REQUIREMENTS

In this section I presented the system requirements of the different version of the windows.

A. Windows 98

Following are the system requirements of the Windows 98 [19]

- 486DX-2/66 MHz or higher processor (Pentium processor recommended)
- 16 MB of RAM (24 MB recommended, it's possible to run on 8 MB machines with /im option used during the installation process)
- At least 500 MB of space available on HDD. The amount of space required depends on the installation method and the components selected, but virtual memory and system utilities as well as drivers should be taken into consideration.
- VGA or higher resolution monitor
- CD-ROM or DVD-ROM drive
- Microsoft Mouse or compatible pointing device (optional)

B. Windows ME

Following are the system requirements of the Windows ME [20]

1) *Minimum system specifications*
   - Processor: Pentium 150MHz
   - Hard drive space: 320MB
   - RAM: 32MB

2) *Recommended system specifications*
   - Processor: Pentium II 300MHz
   - Hard drive space: 2GB
   - RAM: 64MB

1) *Technology Support Center suggested system requirements for Windows 2000*
- 350 MHz or higher Pentium compatible CPU.
- 96 to 128 megabytes (MB) of RAM recommended minimum
- 4GB hard disk with a minimum of 1GB of free space.

2) *Microsoft suggested system requirements:*

- 133 MHz or higher Pentium-compatible CPU.
- 64 megabytes (MB) of RAM recommended minimum; more memory generally improves responsiveness.
- 2GB hard disk with a minimum of 650MB of free space.

Windows 2000 Professional supports single and dual CPU systems.

D. *Windows Xp*
- Processor 233 MHz or higher
- Memory 64 MB RAM or higher
- Video adapter and monitor Super VGA (800 x 600) or higher resolution
- Hard drive disk free space1.5 GB or higher
- Drives CD-ROM drive or DVD drive
- Input devices   Keyboard. Microsoft Mouse or compatible pointing device
- Sound   Sound card. Speakers or headphones

E. *Windows Vista*
- Processor 800 MHz [31]
- Memory 512 MB
- Graphics card DirectX 9.0 capable
- Graphics memory 32 MB
- HDD capacity 20 GB
- HDD free space 15 GB
- Other drives DVD-ROM

IV. FEATURE

A. *New Feature of Windows 98*

Windows 98 was the first operating system to use the Windows Driver Model (WDM). This fact was not well published when Windows 98 was released and most hardware producers continued to develop drivers for the older driver standard, VxD. The WDM standard spread years after its release, mostly through Windows 2000 and Windows XP, because these systems are not compatible with the older VxD standard.[21] Today, even if hardware producers are not developing drivers optimized for Windows 98, the drivers written to WDM standards are compatible with Windows 98 based systems

B. *New Feature of Windows ME*

Improved power management and suspend/resume operations
- Compressed Folders

- A new Help and Support program
- USB mass storage drivers
- Windows Me also includes Internet Explorer 5.5 and various changes to the Windows Explorer shell, inherited from Windows 2000. For example, Search was now integrated into Windows Explorer, rather than being a stand-alone application, and IE 5.5 supported a new Print Preview feature.[22] It also shipped with the MSN Messenger Service

C. *New feature of Windows 2000*

Windows 2000 introduced many of the new features of Windows 98 and Windows 98 SE into the NT line [23]

Some of them are following
- Windows Desktop Update
- Internet Explorer 5
- Outlook Express
- NetMeeting,
- FAT32 support
- Windows Driver Model
- Internet Connection Sharing
- Windows Media Player
- WebDAV support

D. *New Feature of Windows Xp*
- Faster start-up and hibernation sequences
- The ability to discard a newer device driver in favor of the previous one (known as driver rollback), should a driver upgrade not produce desirable results
- A new, arguably more user-friendly interface, including the framework for developing themes for the desktop environment
- Fast user switching, which allows a user to save the current state and open applications of their desktop and allow another user to log on without losing that information
- The Clear Type font rendering mechanism, which is designed to improve text readability on Liquid Crystal Display (LCD) and similar monitors
- Remote Desktop functionality, which allows users to connect to a computer running Windows XP Pro from across a network or the Internet and access their applications, files, printers, and devices
- Support for most DSL modems and IEEE 802.11 connections, as well as networking over FireWire, and Bluetooth.

E. *New Feature of windows Vista*
- Windows Aero:
- Windows Shell
- Instant Search
- Windows Sidebar
- Windows Internet Explorer 7

V. CONCLUSION

My study examine that the Windows operating system is designed to take advantage of the many advances in processor technology. Although primarily run on the Intel architecture, windows was designed to be portable in order to take advantage of whatever promising technologies happened to come along. Key goals for the system included portability, security, POSIX compliance, multiprocessor support, extensibility, international support, and compatibility with MS-DOS and different version of Windows applications. Windows operating is similar to Mach in that it is a micro kernel based operating system that results in a stable base operating system and allows enhancements to be made to one part of the operating system without changing any of the other parts.

REFERENCES

[1] Paul, Ryan (2007-09-03). "Linux market share set to surpass Win 98, OS X still ahead of Vista". Arstechnica.com. http://arstechnica.com/news.ars/post/20070903-linux-marketshare-set-to-surpass-windows-98.html.

[2] "Linux server market share keeps growing". Linux-watch.com. 2007-05-2 http://www.linuxwatch.com/news/NS5369154346.html

[3] Windows 98, Windows 98 SE, and Windows Me Support ends on 11 July2006". Microsoft. http://support.microsoft.com/gp/lifean18.

[4] Miles, Stephanie. "Windows may crash after 49.7 days - CNET News".News.cnet.com.http://news.cnet.com/2100-1040222391.html

[5] "Description of Windows 98 Second Edition". Support.microsoft.com.2007-08-24. http://support.microsoft.com/kb/234762.

[6] Davis, Fred and Kip Crosby. The Windows 98 Bible. Berkeley, California: peachpit Press, 1998. ISBN 0-201-69690-8.

[7] Deitel, Harvey M.; Deitel, Paul; Choffnes, David. Operating Systems. Pearson/Prentice Hall. ISBN 978-0-13-092641-8.

[8] Bic, Lubomur F.; Shaw, Alan C. (2003). Operating Systems.. Pearson: Prentice Hall.

[9] Stallings (2005). Operating Systems, Internals and Design Principles. Pearson: Prentice Hall.

[10] Silberschatz, Avi; Galvin, Peter; Gagne, Greg (2008). Operating Systems Concepts. John Wiley & Sons. ISBN 0-470-12872-0.

[11] Windows 98, Windows 98 SE, and Windows Me Support ends on 11 July 2006". Microsoft. http://support.microsoft.com/gp/lifean18

[12] Microsoft Announces Immediate Availability Of Windows Millennium Edition (Windows Me)". Microsoft PressPass – Information for Journalists. http://www.microsoft.com/Presspass/press/2000/sept00/availabilitypr.mspx.

[13] Gates Ushers in Next Generation of PC Computing With Launch of Windows 2000

[14] Windows Me was released after Windows 2000 and before Windows XP, but Windows Me was not intended to be, nor did it serve as the successor to Windows 2000

[15] Microsoft Unveils SQL Server 2000, Windows 2000 Integration

[16] Microsoft (12 July 2000). "Microsoft and Intel Announce Preview Release of 64-Bit Windows for Intel Itanium Processor". Press release. http://www.microsoft.com/Presspass/press/2000/jul00/itaniumpr.mspx

[17] The Unusual History of Microsoft Windows". http://inventors.about.com/od/mstartinventions/a/Windows.htm

[18] http://en.wikipedia.org/wiki/OS_Marketshare

[19] System requirements from the Microsoft Windows 98 SE manual

[20] Minimum hardware requirements to install Windows Millennium". Microsoft. http://support.microsoft.com/kb/253695.

[21] "You cannot use virtual device driver (.vxd) files common to Windows 98 or Windows 95 drivers with Windows 2000." http://support.microsoft.com/kb/244601/

[22] Paul Thurrott's SuperSite for Windows Windows Millennium Edition (Windows Me) Beta 3 Reviewed http://www.winsupersite.com/reviews/millennium_b3.asp

[23] Introducing Windows 2000 Professional http://www.microsoft.com/technet/prodtechnol/Windows2000Pro/reskit/part1/proch01.mspx

[24] "Microsoft Announces Windows XP and Office XP". Microsoft PressPass. Microsoft. 5 February 2001. http://www.microsoft.com/presspass/press/2001/feb01/02-05namingpr.mspx.

[25] Jeremy Kirk (18 January 2006). "Analyst: No effect from tardy XP service pack". ITworld.com. Http://www.itworld.com/Comp/4063/060118xpsp3/pfindex.html.

[26] System Builders Can Buy Windows XP Until January '09

[27] http://oem.microsoft.com/script/contentPage.aspx?pageid=564778

[28] "Media Alert: Microsoft Unveils Official Name for "Longhorn" and Sets Date for First Beta Targeted at Developers and IT Professionals". http://www.microsoft.com/presspass/press/2005/jul05/07-22LHMA.mspx

[29] "Microsoft Launches Windows Vista and the 2007 Office System to Consumers". press Centre. Microsoft New Zealand. 2007-01-30. http://www.microsoft.com/nz/presscentre/articles/2007/jan07_windowsvistalaunch.mspx

[30] Windows Marketplace Windows Vista Upgrade Editions: Get Started". Windows Marketplace. Microsoft. 2007-01-30. http://www.windowsmarketplace.com/content.aspx?ctId=390&tabid=1.

[31] "MsBetas' List of Vista Ready GPUs". http://www.msbetas.org/wiki/index.php/Vista_Ready_GPUs

[32] Microsoft Windows   http://www.microsoft.com

[33] Wikipedia   http://en.wikipedia.org/wiki/

[34] http://en.wikipedia.org/wiki/File:Operating_system_placement.svg

[35] Mac OS X "Snow Leopard" Interface http://en.wikipedia.org/wiki/File:Snow_Leopard_Desktop.png