

A Short History of OS/2

Taken from the [DataBook For OS/2](#), by David Both.

DataBook for OS/2 Warp

Chapter: Chapter 01 - What is an Operating System and Why is it Important?

Subsection: 02. What is OS/2 Warp?

Document Number: 05

Topic: A Short History of OS/2

Date Composed: 12-19-96 03:19:27 PM **Date Modified:** 12-18-2002 08:00:20 PM

It is important to understand a little of the history of OS/2 to understand where we are today in the operating system arena. A historical perspective is also prerequisite to understanding the differences between and similarities among the operating systems and environments available today.

In the Beginning DOS - 1981

In 1981 when the original IBM Personal Computer was announced, IBM released three operating systems for it. How many of you remember that? Since I wrote the first IBM course on how to fix this original PC, I had to know at least a little about all three of them.

IBM decided early in the development process of the PC that they did not want to hire a bunch of programmers to write software for it - especially an operating system. IBM wanted the hardware business and did not care about the software. Since there was no clear-cut contender for an operating system at the time, IBM approached three organizations about writing one for the PC.

IBM first approached Digital Research and asked them to create a version of CP/M (Control Program/Microcomputer). The owner of DR - Gary Kildall - snubbed the IBM lawyers and went flying or golfing (depending upon whose story you hear) instead. My latest information indicates that he was flying and did not golf.

IBM then turned to Microsoft. Bill Gates was very receptive to the IBM overture and also had information about an operating system which had already been written that would fill IBM's need very nicely. Gates said yes to IBM, bought the operating system called DOS for a relatively trivial amount of money, \$20,000 to \$80,000, again depending upon who is telling the story, and modified it somewhat to run on the IBM PC.

For you trivia buffs, the other OS delivered with the original PC was the UCSD P-System (University of California at San Diego Pseudo code System). I will permit those who make a living from documenting the history of computers to describe that operating system elsewhere.

Incorrect Assumptions

I suppose we all know what assumptions can do for us. IBM made some interesting assumptions about the original PC in 1981; or rather, Don Estridge and his very autonomous development team did.

I was in a meeting with Estridge and a number of other people in April of 1981, when I first was assigned to write the IBM education for the PC. It was stated at this meeting that IBM expected to sell about 275,000 Personal Computers - over a five year product life. In fact, IBM sold almost that many on August 11, the day before the official announcement. IBM held a preannouncement showing of the PC in Toronto at the annual

ComputerLand Dealers of North America conference. ComputerLand dealers placed orders for nearly 250,000 computers that day. On August 12, IBM took orders for almost 250,000 more Personal Computers. IBM's planners have not been correct since.

At the same meeting the target environment for the PC was described. Here are some of the assumptions made then.

- Small business would buy most PCs.
- Large business would stick with mainframes and dumb terminals.
- A few departments in large businesses would use PCs for local, non-connected work.
- The PC would be used for one task only. Not just one task at a time, but a single task all day long. This might be a spreadsheet, or word processing, or accounting, but no more than one task would be performed all day.

Based on these assumptions, the operating system was specified to be single tasking. Besides, although the hardware was far more powerful than anything else available in the microcomputer market at the time, it just was not powerful enough to warrant the extra load that multitasking would place on it.

As we all know, DOS became the OS of choice for the Personal Computer. In part, this was due to its significantly lower price when compared to the other operating system choices then available for the PC.

The Problem

As soon as I bought my original PC (\$5,000 for Intel 8088, 4.77 MHz, 96 KB RAM, monochrome display adapter and display, 80 CPS dot matrix printer) I ran into The Problem.

I was writing a letter in EasyWriter and needed to make a calculation so I could use the result in the letter. Why should I get out a \$10 calculator when I have a \$5000 one sitting here? Of course in order to use it as a calculator, I have to save my document, close EasyWriter, reboot to another diskette with the calculator program on it (which I wrote myself in BASIC), do the calculation, write down the answer, reboot to the diskette with EasyWriter, load the document, and type in the figure from the paper.

We needed multitasking already.

A couple smart companies like Borland came out with Terminate and Stay Resident (TSR) programs like Sidekick which allowed you to switch to them by pressing a special key combination. Sidekick had the calculator as well as a calendar, notepad, schedule, and other little utilities which we all needed.

The TSR became a circumvention for the lack of intrinsic multitasking in DOS and the PC.

The PC AT - 1984

In 1984, IBM introduced the PC-AT which was the first (IBM) PC to use the new Intel 80286 processor. The 80286 was designed by Intel with support for multitasking built into it. IBM made a promise to its customers that they would provide a multitasking operating system for the PC-AT. IBM keeps its promises, unlike Microsoft.

The PC-AT was supposed to be able to do multitasking, and some IBM publicity photos even showed it connected to two dumb terminals. IBM had contracted Microsoft to create the first multitasking OS for the PC, but Bill Gates really did not want to do this for the 80286 processor. He publicly called the 80286 "brain dead" and constantly attempted to turn IBM away from creating OS/2 for the 80286 and to jump instead to the 80386 which was then under development at Intel.

Most people don't know this, even many IBMers who should, but IBM has a series of internal documents called Corporate Directives. Corporate Directive number 2, signed by Thomas J. Watson Jr. in 1956, states that when IBM makes a promise to its customers it will keep that promise "... regardless of the cost." It was on this basis that IBM pressured Microsoft to continue work on OS/2 1.00.

At this time, the IBM PC was the responsibility of Entry Systems Division (ESD). ESD was also working closely with Microsoft to produce OS/2. During this time, Microsoft was also working on the first versions of Windows, and IBM was working on a product called TopView which was a DOS add-on that allowed text mode multitasking. Most people do not remember TopView, but it was a good product and I used it between 1984 and 1987 when OS/2 1.00 was released.

OS/2 1.00 - 1987

Released in December, 1987, OS/2 1.00 was the first ever operating system for the Personal Computer to provide intrinsic multitasking based on hardware support. It was text mode only and allowed only one program to be on the screen at a time, even though other programs could be running in the background. It also allowed one very limited session in which DOS programs could be run. The maximum disk size supported was 32 MB.

Note: All 1.x versions of OS/2 were designed specifically to run on 80286 systems, but they were capable of running on 80386 systems as well.

OS/2 1.10 SE - 1988

In October, 1988, IBM released OS/2 1.10 Standard Edition (SE). SE 1.10 added a graphical user interface (GUI) to OS/2. This GUI, called Presentation Manager (PM), allowed users to interact with the operating system in a more friendly manner than the command line interface provided.

Unfortunately the PM required a very large learning curve on the part of programmers. When programmers became proficient they found that PM, and the rest of the OS/2 APIs (Application Programming Interfaces), were very powerful and quite efficient.

Support for large FAT hard drives was included in this version. By dividing large physical drives into multiple logical hard drives, up to 2 GB drives could be supported.

OS/2 1.10 EE - 1989

When IBM announced OS/2 1.10 SE, they also announced OS/2 1.20 EE (Extended Edition). This product, released in early 1989 included Database Manager and Communications Manager.

Database Manager was (and is) a multitasking relational database with a great deal of power. It is now called DB2.

Communications Manager provided IBM mainframe and midrange customers with multiple 3270 and 5250 emulation sessions. It also contained a really bad asynchronous communications program.

OS/2 1.20 - 1989

Released in November 1989, OS/2 1.20 (SE and EE) offered an improved Presentation Manager. Available with OS/2 1.2 EE for the first time was the High Performance File System (HPFS) . HPFS is much more efficient and faster than FAT. HPFS also offers much greater data integrity.

REXX also appeared for the first time in OS/2 1.20 Extended Edition. REXX is a very powerful interpretive

programming language which can be used for writing a complete application or as an extended batch language. I use REXX quite frequently to write everything from quick and dirty programs to do something one time, to very large, sophisticated programs which I use constantly.

Work had also begun on two new OS/2 products. Work on OS/2 2.0 was well underway. This product would be the first true 32 bit operating system for personal computers. Designed to work on the Intel 80386 and its follow on processors which were still in development, OS/2 2.00 would no longer be compatible with the 80286 processor.

OS/2 3.0 was in the very early stages of development and was intended at the time to be a network server version of the operating system. It was also intended to be platform independent. Because the operating system would be built on top of a microkernel, it would not need to be aware of the type of hardware on which it was running and therefore could run on Intel processors as well as Motorola, SUN, and DEC, chips with only a change of the microkernel hardware abstraction layer.

1990 - The Schism

In 1990, IBM and Microsoft were still working together on the development of OS/2. Microsoft, however, had found that Windows 3.0 - released in May 1990 - generated more revenue for them and therefore allotted increasingly more resource to Windows and correspondingly less to OS/2.

By late 1990, Microsoft had intensified its disagreements with IBM to the point where IBM decided that it would have to take some overt action to ensure that OS/2 development continued at a reasonable pace. IBM, therefore, took over complete development responsibility for OS/2 1.x, even though it was in its dying days, and OS/2 2.00. Microsoft would continue development on Windows and OS/2 3.00. Shortly after this split, Microsoft renamed OS/2 V3 to Windows NT.

OS/2 1.30 - 1991

OS/2 1.30 (SE and EE) was the first version which was written entirely by IBM. There was still some Microsoft code in it - that would not go away for a couple years yet - but all of the new code and a good portion of the existing code for OS/2 1.30 was written by IBM. As a result, OS/2 1.30 was smaller and faster than previous versions, more stable, and there were far more device drivers available, though still not nearly enough.

It has never ceased to amaze me that Microsoft could write code for Windows which was (relative to OS/2 1.1 and 1.2) easy to use and for which there were plenty of device drivers. Take the process required to install and configure a printer. Under Windows it was a simple two step process. Under OS/2 1.2 it required the user to perform unnatural acts:

1. Install the device drivers.
2. Set up a printer queue.
3. Create a printer object.
4. Associate the device driver with the printer object.
5. Associate the print queue with the printer object.
6. Set up the COM port configuration for a serial printer.
7. Use the SPOOL command to redirect printer output to the desired port.
8. Specify optional printer settings.

No wonder people thought OS/2 was difficult! In my opinion, Microsoft was intentionally making OS/2 as difficult to use as possible - or the programmers they had assigned to write OS/2 were the stupid ones. I still have a copy of the three page article I wrote for what was then OS/2 and Windows Magazine (it later became Windows magazine and never had any relationship to the late, lamented OS/2 Magazine) describing in detail the

steps required to install and configure a printer under OS/2 1.20.

With IBM writing OS/2 1.30, the printer installation became much easier, as did much of the installation and configuration. IBM completely rewrote the Print Manager in order to achieve this. It was not great yet, but it was incomparably better than it had been.

OS/2 1.30 added some other important new or improved features.

- REXX was added to the SE version. It had previously only been available with EE.
- Adobe Type I type fonts. (It was shortly after this that Microsoft began development of TrueType fonts. Interesting!)
- New, more easily readable fonts for the command prompt sessions.
- Lazy Write was added to the HPFS file system.
- The swapping algorithm was improved considerably to enhance performance.
- Video device drivers were enhanced to include high resolutions up to 1024x768.

OS/2 2.00 - 1992

OS/2 2.00 was released in the spring of 1992. The first true 32 bit operating system for personal computers (and for years the only one) it met IBM's stated goal of being a better DOS than DOS and a better Windows than Windows. It did this through the use of Virtual DOS Machines (VDMs) which allowed OS/2 to run many DOS (and Windows) programs at the same time as though they were on completely separate computers. As far as the DOS programs were concerned, they actually were in separate computers. Windows programs run on IBM's licensed version of Windows 3.0 called Win-OS/2.

Because of this separation of DOS programs from each other, one Windows (remember - Windows is a DOS program) program which crashes can not crash any other Windows program. By placing Windows programs which do not play well together in Windows sessions in different VDMs, they can both run without interfering with each other. In addition the programs can still communicate through Dynamic Data Exchange and the clipboard.

The Workplace Shell (WPS) was also introduced in OS/2 2.00. The Workplace Shell is an object oriented user interface (OOUI). The IBM WPS takes the GUI to the next generation by integrating it much more fully with the rest of the operating system, including the file system.

OS/2 2.10 - 1993

In May of 1993, IBM released OS/2 2.10. This version sported a new, faster, fully 32 bit graphics subsystem, TrueType fonts for Win-OS/2 sessions, and Multimedia Presentation Manager (MMPM/2) which provided sound and video multimedia capabilities. Windows support was upgraded from 3.0 to 3.1.

PCMCIA support for laptop computers also made its debut with OS/2 2.10, along with Advanced Power Management (APM). OS/2 could work with laptop computers with an APM BIOS to reduce power consumption and extend battery life. PCMCIA support was crude and supported only a very few computers and PCMCIA credit card adapters.

To reduce the price of OS/2 for users who already had Windows on their computers, IBM released OS/2 2.11 for Windows in late 1993. This version of OS/2 did not have Win-OS/2 and, instead, relied upon the copy of Windows 3.1 already installed on the computer to allow OS/2 to run Windows programs. It did this by making some minor modifications to the Windows SYSTEM.INI and WIN.INI files, and hooking the Windows 3.1 code once it was loaded into memory so that OS/2 could control the Windows 3.1 code in the VDM.

OS/2 Warp - 1994

OS/2 Warp Version 3 made its debut in October 1994 as OS/2 Warp for Windows. Like OS/2 2.11 for Windows, it did not contain IBM's Win-OS/2 code and relied on Windows 3.1 to run Windows programs. OS/2 Warp 3 with full Win-OS/2 support became available a short time later.

Warp 3 was designed to install and run on a computer with only 4 MB of RAM and it did. Performance was tolerable, but adding more RAM improved performance considerably. Additional device drivers made Warp 3 capable of running with the vast majority of personal computers and peripherals on the market. The Workplace Shell was improved significantly in terms of both its functionality and performance. Print performance, PCMCIA support, and multimedia support were all enhanced significantly.

TCP/IP and Internet communications were also added to Warp 3. The Internet Access Kit (IAK) provided a complete package to enable Warp users to log on and surf the net. The Web Explorer allowed users access to the World Wide Web, although it was neither as feature rich nor as flexible as the industry leader, NetScape. Text mode and graphical FTP applications allowed file transfer. Ultimail Lite gave users e-mail, but Ultimail is cumbersome, slow, and very difficult to configure.

Unlike previous versions of OS/2, Warp shipped with a BonusPak CD-ROM which contained several OS/2 applications. IBM Works is a set of integrated applications including a spreadsheet, word processor, database, report generator, and charting program.

Warp Connect

Released in 1995, Warp Connect combines all of the features of Warp 3 with network connectivity and tools. Warp Connect Peer functions allow client workstations to share resources such as files, printers, and modems with other users on a network. LAN Server 4.0 and Netware requesters allow access to the most popular network server environments.

Warp Server

In early 1996 IBM released Warp Server. This landmark product combines the power and functionality of Warp 3 with the network server capabilities of IBM's LAN Server 4.0 product. With some relatively minor fixes to the LAN Server product, and the addition of many previously separate products, Warp Server is the leading server environment.

Warp Server includes many features which would cost extra with other server operating systems. OS/2 Warp Server delivers an integrated platform for the emerging application server environment as well as a complete set of traditional file and print services. Warp Server provides an integrated packaging of OS/2 Warp, LAN Server 4.0 (with some enhancements and fixes), SystemView for OS/2, remote access, advanced backup disaster and recovery, and a new printing capability that allows, among other things, printing postscript files on non-postscript printers.

SMP Feature for OS/2 Warp Server Advanced - 1996

IBM Introduced Warp Server SMP in Late 1996. Symmetric Multiprocessing (SMP) provides the ability for the operating system to spread the computing workload across multiple processors. The advantage of SMP as implemented in OS/2 is that it balances the processing load fairly equally between the processors.

OS/2 Warp Server Advanced with SMP outperforms Microsoft Windows NT Server 3.51 by more than 25 percent in capacity. OS/2 Symmetric-multiprocessing provides support for more users by allowing software servers to exploit multiple processors with the same server software installed. The SMP feature for OS/2 Warp Server Advanced is optimized for 2-way and 4-way SMP systems, the dominant SMP hardware platforms

available today, but has the ability right now to support up to 64 processors - far more than any other SMP offering in the market. Ziff-Davis Labs observed a 90 percent improvement in throughput when adding one processor, and a 300 percent improvement when adding three processors. This scalability is significantly better than that of Windows NT. The SMP feature not only supports 32-bit SMP-enabled applications, but also offers increased performance for non-SMP applications.

OS/2 Warp 4 - 1996

Warp 4, code named Merlin, was released in September of 1996 with a significant facelift for the Workplace Shell. New features include Java, and VoiceType Navigation and Dictation.

Warp 4 is called the "Universal Client" by IBM because of its unparalleled network connectivity.

- Connect to anything, anywhere with a universal network client which allows simultaneous connectivity to LAN Server, Warp Server, Windows NT Server, Novell Netware, Netware Directory Services, PCLAN Program, IPX-SPX, LANtastic for DOS or OS/2, Warp Connect, Windows NT Workstation, Windows 95, Windows for Workgroups, TCP/IP (including DHCP, DDNS, FTP, TFTP, Telnet, SLIP, PPP, SMTP, and SNMP), SNA, NetBIOS.
- Java is built into Warp 4 so you need no additional software to run powerful and easy Java applications locally or right from the World Wide Web.
- VoiceType speech recognition makes Warp 4 the only operating system in the world to allow voice navigation and dictation with no additional software.
- WarpGuides provide intelligent self-configurable guidance for common tasks. Ideal for new users or users new to OS/2.
- Internet aware desktop allows one-click access to your favorite web sites.
- TME 10 NetFinity (SystemView) for exceptional systems management, including DMI (Desktop Management Interface) support.
- Remote Access Services (LAN Distance) for remote access capabilities which allow you to access your network from home or the road. Remote Access Services can also allow ad hoc WAN configuration for temporary or emergency use.
- Mobile Office Services allows the Road Warrior to keep files synchronized with the office.

Warp Server for e-business (Aurora) - 1999

This new version of Warp Server (Code name Aurora) called Warp Server for e-business, will become available in early 1999. It will have a number of new and very interesting features.

- Full Y2K compliance out of the box. Previous versions of Warp are Y2K compliant after installation of fixpacks.
- Support for Eurocurrency.
- A graphical interface for defining and managing National Language Support (NLS) Locales. A Locale is usually a country.
- Netscape Communicator 4.04.
- Lotus Domino Go Server for hosting web sites.
- WebSphere Application Server 1.1.
- NT Server Management. This will allow management of NT domains and servers from an OS/2 system including the ability to keep OS/2 and NT accounts synchronized. Users will be able to log on once and have access to both OS/2 and NT server resources.
- I2O support. Intelligent I/O means that so long as a device supports I2O there will be no need to wait for the vendor to provide an OS/2 version of the device driver. In fact, no operating system specific device drivers need to be written for I2O devices.
- SMP support.

- Network File System (NFS) for sharing files across networks.
- Logical Volume Management will allow users to create logical volumes that are not location dependent. For example a user can create a D: drive and weeks or months later move it to a different physical hard drive and still refer to it as D:. LVM also allows logical volumes to span multiple physical disk drives and gives users the ability to expand the size of a logical volume on the fly - without rebooting the system.
- The Journaling File System (JFS) provides faster performance, higher disk capacity, improved scalability, and faster recoverability.

Warp Server for e-business uses the object oriented user interface (OOUI) of Warp 4 for its user interface.

[DataBook For OS/2](#)

Send e-mail comments to dboth@millennium-technology.com.

Copyright (c) Millennium Technology, Inc. 1995, 2002. All rights reserved
DataBook is a registered trademark of Millennium Technology, Inc.