# Microsoft Operating System Versions

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History of Microsoft Operating Systems

MS-DOS and DOS-compatible operating systems

- 1981 – MS-DOS
  - 16-bit OS with text-based interface
  - Applications directly control hardware
  - Last release (6.22) Nov. 1993
- 1985 – Windows Operating Environment
  - Not a true OS; GUI-based shell ran on top of MS-DOS
  - Last release Windows for Workgroups Nov. 1993
- 1995 – Windows 95 / 98 / ME
  - Natively boots in Windows OS
  - 32-bit OS
  - Full MS-DOS backward compatibility
  - Last release Windows ME Sept. 2000
- **This train no longer supported**

**004 So, let’s go back and take a quick historical tour for where Microsoft’s operating systems evolved from. The first operating system from Microsoft was MS-DOS. And the MS-DOS system came up in 1981. It was actually a contract that Bill Gates and Microsoft had with the IBM Corporation.

It was a sixteen bit operating system. It means it ran sixteen bit processors of the day, which were like 80286 processors. Applications directly controlled the hardware. And what that means is if you wanted to print in that system, you’d actually have to write a print driver into your
application. I can still remember
Word Perfect at that time had three
print drivers written into the
application. And it’s because Word
Perfect was printing directly to the
printers. So, the last release of that
was in 1993 and DOS 6.22.

Following that was Microsoft
Windows. And the original Microsoft
Windows actually wasn’t an operating
system. It was an operating
environment, which means it was a
program that ran on top of DOS. So,
when you were installing Windows,
Windows 2, Windows 3, Windows
3.11, you installed DOS first, and
then you booted Windows on top of
DOS. And all Windows did was
provide a graphical interface to
manipulate DOS.

Windows for Workgroups in
November 1993 was the last version
of that train of Windows. And that
version was the first version that had
networking where two or more
computers could talk to each other.
Following that development was the
first true, from the ground up GUI
operating system that Microsoft put
out. And that was Microsoft Windows
95. It came out in August of’95. It
natively booted into Windows. There
was no DOS any more underneath.
And it was a thirty-two bit operating
system, which meant it talked to the
Pentium processors that had just
come out in that era.

It was fully backward compatible with
MS-DOS because most of the
programs of that day were still
written for DOS. And you needed to have DOS compatibility. That went through '95.

And then Windows 98 came out, and then Windows ME came out. And in September 2000, that was the last release of DOS compatible applications-- DOS compatible operating systems.

History of Microsoft Operating Systems

History of Microsoft Operating Systems

Non-'DOS-based’ systems

- 1993– Windows NT
  - First MS OS to have separate workstation and server versions
  - 32-bit OS
  - Evolved from OS/2 OS
  - Applications access hardware through a Hardware Abstraction Layer
  - Introduced NTFS file system
  - Introduced user-based security
  - Introduced enterprise security model (domains)
  - Last release (NT 4.0 / SP6a) Aug. 1996 / Nov. 1999
- **This train no longer supported**

**005 Microsoft, at the same time, was working on a parallel group of operating systems called Windows NT. Windows NT was actually evolved from another IBM contract where IBM had built a thirty-two bit operating system called OS 2. And
Microsoft was building that project with IBM. Microsoft spun that project off into Windows NT.

The applications access hardware through something called a hardware abstraction layer. And that’s common today. But we don’t think of it because we haven’t been involved in it.

What it means is you install a printer today, your printer gets installed into the print application in the operating system. And when Word or Internet Explorer or something else wants to print, it prints to the print application in the operating system. So, the print application in the operating system gets input from the application, makes a connection to the printer, and passes in between as a hardware abstraction. That way you can be sure that somebody who writes bad code can’t crash your operating system because they can’t make a mistake in memory assignments or other things in the computer.

It also introduced the NT file system, NTFS. And NTFS was the first truly rugged reliable file system that Microsoft had put out. The FAT or FAT16 was a good operating system, but it had no security and didn’t have any redundant layers in it. And NTFS does.

When NT came out, one of the other things they did was they developed the first servers. And the NT 3 and NT 4 servers were the first time there was actually server operating
systems separate from a user operating system. The last release of NT was NT 4.0 service pack 6A in November of 1999, and shortly after that came out--

**006 The Windows 2000 family.** Everything we now have from Microsoft in operating systems is spun off of the Windows 2000 series. They have separate workstation and server versions.

The server versions are actually scalable. They had more than one server version. They had enterprise versions as well as smaller workgroup versions. They had a new object base

**History of Microsoft Operating Systems**

After Windows NT: basis of current-generation OSes

  - Separate workstation and server versions
  - Scalable server versions
  - New object-based security model
  - LDAP-based enterprise security model (domains)
  - Intel processors only (support removed for RISC processors)

- **This train still current; Windows 2000 no longer supported**
security model and LDAP, lightweight directory access protocol, enterprise security for their domains. So, everything that we do today with our current operating systems, all come from this genesis.

NT and 2000 systems could run some DOS based applications. But they didn't guarantee it. It was run at your own risk.

So, this train is still current. Windows 2000, the original version, is no longer supported.
Current Microsoft Operating Systems

Windows XP:
- October 2001 – April 2014
  - 32-bit* and 64-bit supported

Windows Vista
- Nov 2006 – present
  - 32-bit* and 64-bit supported

Windows 7
- July 2009 – present
  - 32-bit and 64-bit* supported

Windows 8
- Not covered in A+ for this exam

**007 But Windows 2000 spun off Windows XP, Windows Vista, Windows 7, which are all current operating systems and the operating systems covered by this exam.

If you look at Windows XP, it came out October 2001. And April 2014 is when Microsoft is going to suspend support for that. XP was a thirty-two bit operating system and also had a sixty-four bit version that wasn’t very popular because when it came out, sixty-four bit systems were rare. But it did support sixty-four bit CPUs.

Windows Vista came out in November 2006. It was thirty-two
and sixty-four bit. And then Windows 7, July 2009 is thirty-two bit and sixty-four bit with a sixty-four bit preferred.

So, that’s kind of the transition point for Microsoft where they went from being a thirty-two bit preferred and sixty-four bit offered to being sixty-four bit preferred and thirty-two bit offered. Windows 8 has come out since Windows 7.

**WINDOWS XP**

**WINDOWS XP**

Versions and differences:

- **XP Starter Edition**
  - Sold only in some less-developed countries; incl. language support
  - Limited multitasking; no workgroups or domains; hardware-restricted
- **XP Home**
  - Not supported in domains; optimized for workgroups; no 64-bit version
  - Simplified security – (guest on; per sharing enabled, etc.)
- **XP Professional**
  - Multiple Processors; Automated System Recovery; IIS/Personal Web
  - Security (EFS, user-level file security, etc.)
  - Management (RDP, domain membership, Group Policies, WSUS, roaming profiles, enterprise installation via RIS & Sysprep, etc.)
- **Media Center Edition**
  - XP Pro w/media tools added; no domain/enterprise support; OEM only
- **XP Tablet PC Edition**
  - XP Pro upgraded with touchscreen, stylus and handwriting support

**008** So, Windows XP versions, Windows XP did have a Starter edition, a Home edition, a Professional edition, a Media Center edition, and a Tablet PC edition. And
all of them were a little bit different. The Starter edition for Windows XP, you'll see in the other operating systems, they have something similar, the Starter edition as sold in less developed countries. It included foreign language support.

But it was a stripped down version of Windows XP. It only had limited multitasking. You could only run there concurrent applications. Once you opened three windows, you couldn't open the fourth app.

It didn't support workgroups. It didn't support domains. And it was hardware restricted in terms of the maximum CPU and memory you could use. It was a low cost version to help them get into third world markets.

XP Home was the version they expected most people to use as a home machine, which was why they named it XP Home. It didn't support domains. But it was optimized for workgroups. So, you could share files between users. And it had no sixty-four bit version.

It had a simplified security package. They were trying to make it look as much as possible like the Windows 95, Windows 98 model people had been used to and been happy with. So, a simplified security included things like having guest accounts on by default, having automatic logon on by default, other things like that.
XP Professional was what you expected to see in the business world. It supported multiple processors, supported automated system recovery, which was a way to get your XP installation restarted if it had corrupted itself. It supported personal web services, supported encrypting file system, EFS. It had user level file security, so you could now control who could get into which files on the user box, and other things that made it more of a business application.

On the management side, it supported remote desktop as a remote desktop server meaning you could log into the XP Professional box from remotely. It supported domain membership, group policies, SUS, which was the local update service. It supported roaming profiles, enterprise installations, remote installation service and sysprep, and basically was their first attempt to make a truly friendly business based system.

They did make it in the last two versions, Media Center edition. Media Center editions was Microsoft's first venture into the media market. And a lot of Media Center edition actually came as appliances. You couldn't buy Media Center edition of software. The only way you could buy it was to buy it in a pre-constructed system.

And then finally XP Tablet edition, and the Tablet PC edition was essentially XP Professional upgraded with touch screen, stylus,
handwriting support, and other things you’d need to be able to run the tablet.

**WINDOWS VISTA**

**WINDOWS VISTA**

Versions:

- **Vista Starter**
  - Sold only in less-developed countries; a subset of Vista
  - Restrictions: limited multitasking; no inbound connections; 1Gb RAM
- **Vista Home Basic**
  - Similar to XP home; no Aero; 1 CPU, Movie Maker SD only
- **Vista Home Premium**
  - Similar to XP MCE (HDTV, games, tablets, 10 SMB connections, etc.)
- **Vista Business**
  - Supports domain services; EFS; offline files; shadow copy; 2 CPUs
- **Vista Enterprise**
  - Business + multi-language; BitLocker. Software Assurance distro only
- **Vista Ultimate**

**009 Windows Vista, the follow on to Windows XP, Windows Vista was the first operating system to try to put in a whole new security model called user account control. We'll talk about that in a moment. Again, their Starter edition sold in less developed countries and had most of the same restrictions that were in the Starter version of Windows XP including a maximum of one gigabyte of RAM.**

Vista Home Basic, similar to XP Home, it had no Arrow. But we'll talk
about Arrow. Arrow is something we generally think of when we think of the glass panes that you see in Vista and in Windows 7. But Arrow was also a whole bunch of other changes in terms what happened with keystrokes and mouse clicks. They changed subtly, in subtle ways, changed how the operating system works.

Vista Home Premium, similar to XP Media Center edition, it did support HDTV, games, tablets, ten concurrent connections. That was the highest Home version of Windows Vista.

The last three versions are all for the Enterprise. Vista Business supported domain services, EFS, offline files, shadow copies. Shadow copies are real time second copies of what’s on your hard drive. That way if you have a crash or if you needed to go back for some reason and revert your files, you could.

Shadow copies are actually also the system used for automatic recovery. So, if you want to go back to an earlier installation of Windows, you’ll see a slide later on how we do that. But that’s only supported because of shadow copy.

Vista Enterprise, it was essentially Vista Business with multiple language. BitLocker was included. BitLocker is a drive level file encryption system. And the idea behind BitLocker was if you’re using a mobile device like a laptop, and you lose it at the airport, nobody else can
access your files because the entire hard drive is encrypted.

Vista Enterprise was another version of Vista, another version of their operating system you could not buy in a store. It only came with a software assurance distribution. You had to buy it as an enterprise.

And then Vista Ultimate was the best of Home Premium and Enterprise. And it was available for purchase. So, that's the one that individuals could get if they wanted to get something that was like Vista Enterprise.
Versions:

- **Windows 7 Starter**
  - Sold only pre-installed on ‘netbook computers; a subset of Windows 7
  - Restrictions: 32-bit only; similar to Vista Basic

- **Windows 7 Home Basic**
  - Restricted activation only in emerging markets; limited Aero, etc.

- **Windows 7 Home Premium**
  - Similar to Vista Home Premium; no enterprise support; 16GB RAM

- **Windows 7 Professional**
  - Supports domains; EFS; offline files; Windows XP mode; 192GB RAM

- **Windows 7 Enterprise**
  - Business + multi-language; BitLocker. Software Assurance distro only

- **Windows 7 Ultimate**
  - Purchasable; similar to Enterprise. Win7 Home Premium and Win7 Professional cab be upgraded to Ultimate

**010 Windows 7, Windows 7 also had the Starter edition, sold preinstalled on network computers. You could not buy Windows 7 Starter by itself. And it was thirty-two bit only and similar to Vista Basic.

Windows 7 Home Basic was restricted activation only in emerging markets. It has unlimited support for the Arrow features. If you want full Arrow functionality, you had to go up to Windows 7 Home Premium.

Windows Home Premium, much like Vista Home Premium, no enterprise support, but other than that had all the features you’d expect to see in a home user operating system.
Jumping up one more to Windows 7 Professional, much like XP Professional, that was the entry level version of the operating system for enterprise use. It supports domains. It supports DFF, offline files. It also had something called Windows XP mode where you could actually run essentially a shell of Windows XP so the-- excuse me, so that files and applications that wouldn't run in Windows 7 could be run in this Windows XP shell. And it supports a hundred and ninety-two gigabytes of RAM if you're in the sixty-four bit version.

Windows 7 Enterprise, same thing as Windows Vista Enterprise, they added the Multilanguage. They added the BitLocker. And it was only available via software assurance meaning you couldn't buy it in a store.

Windows 7 Ultimate, similar to the Enterprise, it had Windows 7 Home Premium and Windows 7 Professional and can be upgraded from Windows Home Premium or Windows 7 Professional into Windows Ultimate. So, Windows Ultimate was the purchasable option that looked very similar to Windows Enterprise.
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