



AIR FORCE ASSOCIATION'S

CYBERPATRIOT

NATIONAL YOUTH CYBER EDUCATION PROGRAM

UNIT 6

Microsoft Windows Basics





Learning Objectives

- Participants will understand what the Microsoft Windows operating system is and its basic history
 - Windows OS Basics
 - Windows Version History
 - Windows-Specific Terms and Definitions





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SECTION 1

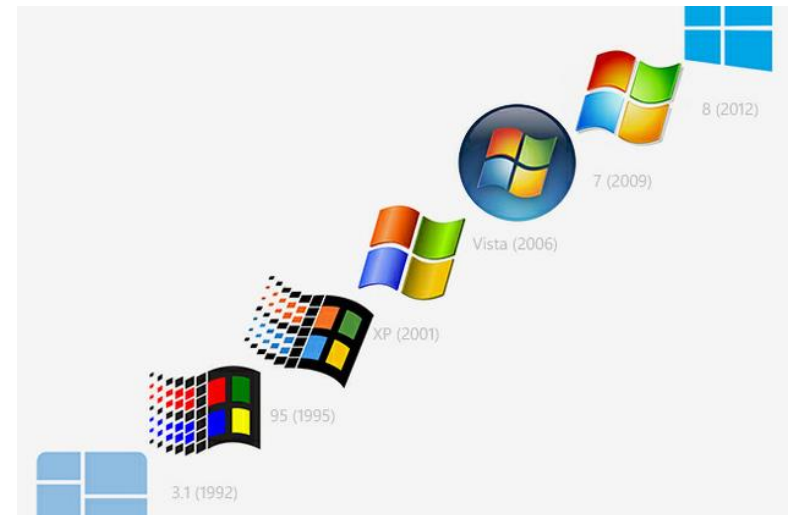
Windows Version History





Version History

- First version of Windows widely released was MS-DOS in 1981
- New workstation and server versions are often released around the same time and are closely related.
- Only OSes that have been used in the competition will be covered.
- Windows 10 and Server 2016 are not listed, though they were used in the competition.





Windows XP and Server 2003

Release Dates: 2001 (XP) and 2003 (Server 2003)

Major Features

- Lightweight – Only requires 64 MB of RAM and 1.5 GB of hard drive space
- Focus on user eXPerience – sleek graphics, simplicity, and basic features
- XP has been updated with three Service Packs and Server 2003 has two
- XP is the first version to include Remote Desktop, which allows a user to connect to a system remotely

Notable Security Concerns

- In 2014, Microsoft discontinued support and updates for Windows XP and Server 2003, meaning systems running those OSes may now be more vulnerable to attack.
- Almost 250 million people still use Windows XP
- Many systems running these OSes may also have outdated hardware and applications that also have security concerns.



Source: <https://redmondmag.com/articles/2015/04/08/windows-xp-usage.aspx>





Windows Vista and Server 2008

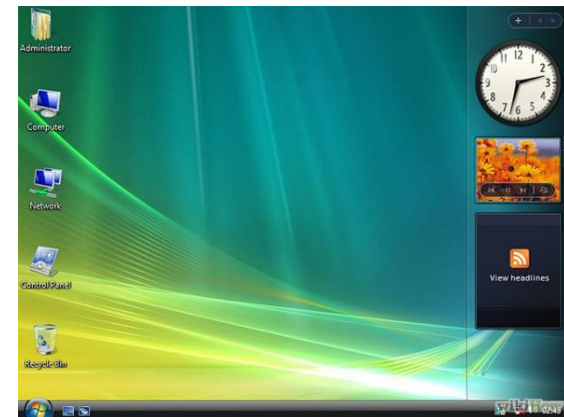
Release Dates: 2006 (Vista) and 2008 (Server 2008)

Major Features

- Updated GUI and a Windows Sidebar where users can place Desktop Gadgets, like weather and time applets
- Windows Defender – security tool featuring antispyware capabilities
- Backup and Restore Center – allows users to more efficiently back up files and create system images
- User Account Control (UAC) – informs user when a program requires administrator-level permission
- Bitlocker – Full disk encryption
- Vista and Server 2008 each have two Service Packs

Notable Security Concerns

- Vista included major architectural changes, making it significantly more secure than base Windows XP.
- While UAC is a useful security tool, it caused major usability issues for the average user.





Windows 7 and Server 2008 R2

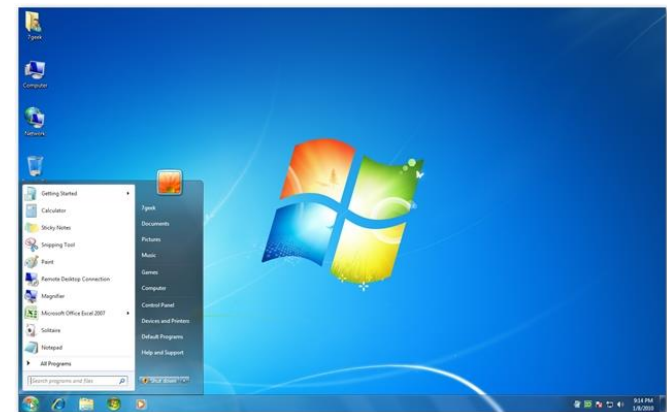
Release Date: 2009 (Both)

Major Features

- Significant speed improvements that Vista lacked due to bloated OS size
- Windows 7 and 2008 R2 each have one Service Pack
- Improved searching and more nuanced UAC, which provides the ability to slide between different security levels
- Action Center – centralized location to notify user of major security issues
- Windows now allows for biometric authentication

Notable Security Concerns

- Initial launch only had minimal security fixes over Vista.
- As the most widely used OS, Windows 7 is the most targeted by malicious users and software.





Windows 8 (8.1) and Server 2012

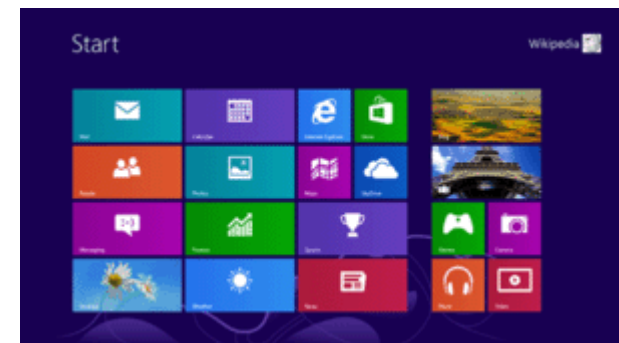
Release Dates: 2012 (Windows 8 and Server 2012) and 2013 (Windows 8.1)

Major Features

- Focus on providing an OS for tablets, including touchscreen and gesture capabilities, a tiled Start screen, Windows Store, and “hot corners”
- Windows 8.1 returned the Start button that was missing in Windows 8
- Windows Defender now includes Microsoft Security Essentials, which provides antivirus support
- Cloud Storage and Sync – users can now sync their settings and backup their data to the cloud

Notable Security Concerns

- Some applications were rewritten to maintain compatibility with the new GUI, which could lead to new security flaws.
- “Picture passwords” can be more easily cracked than traditional passwords.





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SECTION 2

Windows Basics

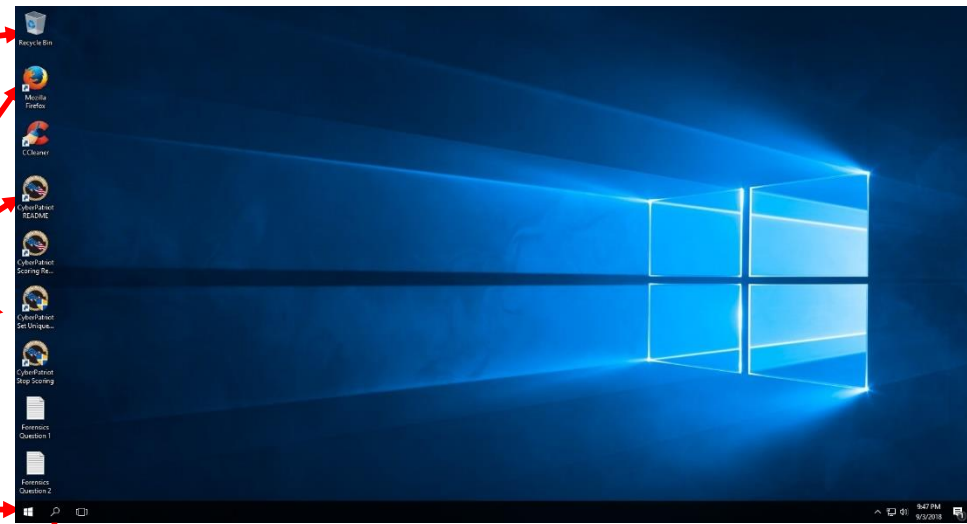




Microsoft Windows: Desktop

This is the main screen area a user sees after logging in on most Windows operating systems.

- **Recycle Bin:** deleted files are sent here before being completely deleted from a computer
- **Icons/Shortcuts:** thumbnail pictures that represent folders, files, and programs on the OS
- **Start (Windows) Button**
- **Search**
- **Task Bar:** shows which files and programs are open
- **Notification Area:** area for information about computer settings



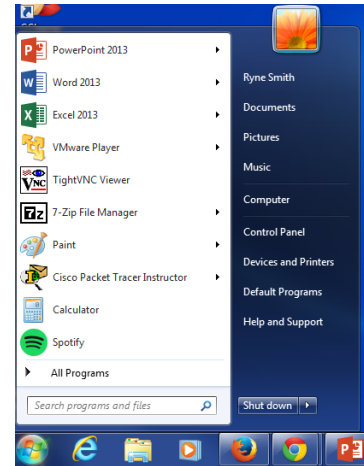
Source: <http://windows.microsoft.com/en-us/windows/desktop-overview#1TC=windows-7>



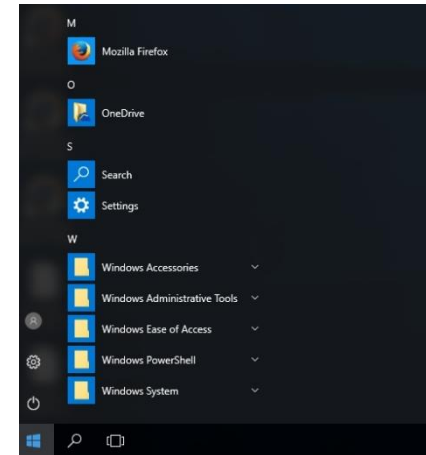


Microsoft Windows: Start Menu and Start Screen

- All Windows OSEs until Windows 8 included a Start button in the task bar
- Clicking the Start button brings up the **Start Menu**
- From the **Start Menu**, users can search their system, open files and programs, and access system tools
- Windows 8 did not have a Start button and replaced the **Start Menu** with the **Start Screen**
- Windows 8.1 brought the Start button back to take users to the **Start Screen**



Windows 7



Windows 10



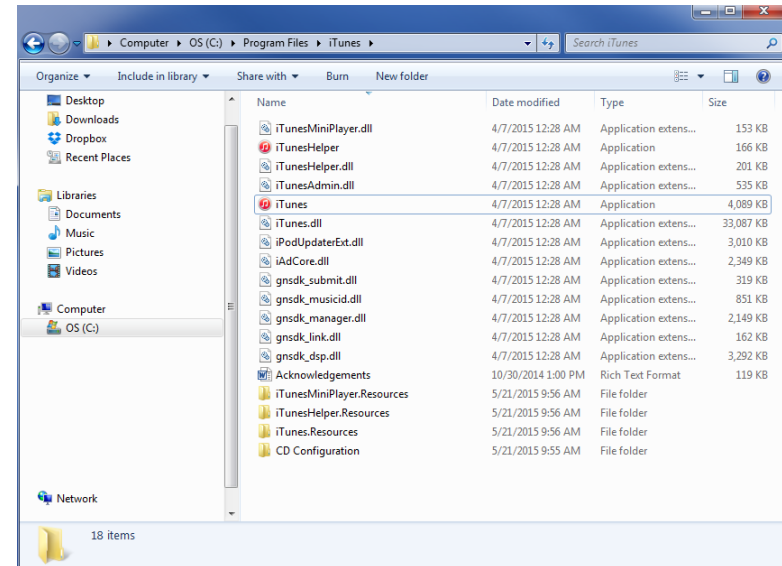
Source: <http://windows.microsoft.com/en-us/windows/using-menu-buttons-bars-boxes#1TC=windows-7>





Microsoft Windows: Directory

- Files and folders can be accessed through **Windows Explorer**
- A **file path** is where a file is located on a system
- Example file **path**:
 - C:\Program Files\iTunes\iTunes.exe
 - C: - **Drive**
 - \Program Files – **Folder**
 - \iTunes - **Folder**
 - \iTunes.exe - **File**



Source: <http://windows.microsoft.com/en-us/windows/working-with-windows#1TC=windows-7>





Microsoft Windows: File Extensions

- A group of letters occurring after a period in a file name, indicating the format of the file
- Common file extensions in Windows:
 - **.bat** – executable batch files
 - **.bmp** – Bitmap graphics files
 - **.doc** – Word documents (pre-Office 2007)
 - **.docx** – Word documents (Office 2007 and later)
 - **.exe** – executable files/programs
 - **.ppt** – PowerPoint files (pre-Office 2007)
 - **.pptx** – PowerPoint files (Office 2007 and later)
 - **.wav** – Microsoft audio file
 - **.wmv** – Windows Media Video
 - **.xls** – Excel spreadsheet (pre-Office 2007)
 - **.xlsx** – Excel spreadsheet (Office 2007 and later)

