

Windows Configuration

Recycle Bin Location

- Open Explorer.
- In the location bar enter `C:\$Recycle.Bin` and press Enter.
- Click Organize.
- Select Folder and Search Options.
- Select the View tab.
- Select Show hidden files, folders, and drives.
- Untick Hide protected operating system files.
- Click OK.

Microsoft GUI

- Task Manager
 - All windows versions include it
 - Shutdown non-responsive applications
 - Ctrl+Alt+Delete and click Task Manager
 - Right click empty spot in the taskbar

Task Manager Cont.

- Details
 - Running and not responding
 - Can change the columns
 - Right Click on column name for options
 - Can change priority of tasks by right clicking and using set priority

Microsoft Management Console

- Computer Management
 - Task Scheduler – taskschd.msc
 - Event Viewer – eventvwr.msc
 - Shared Folders
 - Local Users and Groups – lusrmgr.msc
 - Performance – perfmon.msc
 - Good for troubleshooting
 - <https://www.youtube.com/watch?v=591kfPROYbs>

Microsoft Management Console

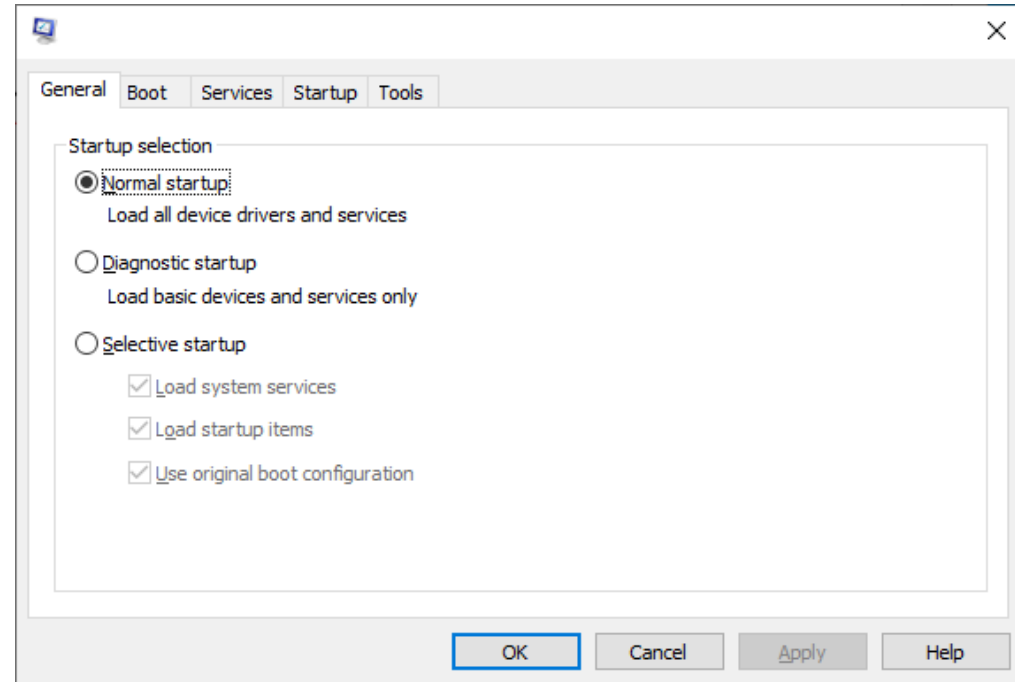
- Computer Management
 - Device Manager – devmgmt.msc
 - Storage – diskmgmt.msc
 - Services and Applications
 - Certificate Manager – certmgr.msc

Windows Administration

- Group Policy Editor
 - gpedit.msc
 - Allows administration to set various settings

msconfig

- Functionality varies between versions of windows
- Boot tab
 - Configure next boot to be safe
- Services Tab
 - See all services installed and their state
- Start Up Tab
 - Configure programs to run at start up
- Tools Tab
 - Allows launching of admin tools



System Information Tool

- msinfo32.exe
 - Lists settings
 - Cannot change values
 - Search
 - Export

More tools

- Resource Monitor
 - resmon.exe
 - Task manager enhanced
- Disk Cleanup
 - cleanmgr.exe

Control Panel

- Most common configuration utility
- Allows customisation of environment
- Experiment with settings (not in college!)
- Default Category View
 - Classic View (Before Win 7)
 - Small / Large Icons (Win 7 onwards)

Control Panel – Selected Applets

- Add a Device – Add and configure new hardware
- Programs and features – Changes, adds, or deletes software
- Administrative Tools – Perform administrative tasks on the PC
- Date and Time – Sets the system time and config options like Time Zone
- Display – Configures screensavers, colours, display options and monitor drivers
- Folder Options – Configure the look and feel of how folders are displayed
- Fonts – Add and remove fonts
- Internet Options – Sets internet connectivity options
- Hardware and Sound – Configure audio and video options
- Network and Internet; Network and Sharing Center – Options for connections to other computers
- Phone and Modem – Options for using phone lines to dial out to the Internet
- Power Options – Configure differing power schemes
- Devices and Printers – Configures printer settings and print defaults
- System – View and configure system elements

Applets

- List at <https://www.lifewire.com/command-line-commands-for-control-panel-applets-2626060>
- Time and Date
 - TIMEDATE.CPL
- Regional and Language Options
 - INTL.CPL
- Internet Options
 - INET.CPL
- Folder Options
 - Control Folders

System Property Applet

- Large number of important settings
 - SYSDM.CPL
- Different versions – Different Options!
- Computer Name Tab
 - Workgroup (loose associations)
 - Ideal for 10 or less workstations
 - Domain (tight associations managed by Domain Controller)
- Hardware Tab
 - Device Manager
 - Device Installation Settings
 - Always check manufacturers website for latest drivers
 - Drivers should be signed
 - <https://docs.microsoft.com/en-us/windows-hardware/drivers/install/windows-driver-signing-tutorial>

System Property Applet

- Advanced
 - Performance – important settings for configuration
 - Virtual memory
 - Processor time allocation
 - Visual Effects
 - Normally optimised so leave well alone
 - User Profiles
 - All users have a profile – Settings and preferences
 - Can copy or delete
 - Change Types
 - Start Up and Recovery
 - What to do during system start up and unexpected shutdowns
 - Boot manager options (Always allow a pause!)
 - Failure options to log and what to log

System Property Applet

- Advanced
 - Environment Variables
 - User Variables – only affecting individual users
 - System Variables – For all users using the system
 - Once were very important in early versions of DOS and Windows
- System Protection
 - System Restore Options
- Remote
 - Enable/Disable Remote Assistance (Enabled by default)
 - Remote Desktop Connection tool (helps administration by remote admins)
 - To let a remote person control the PC (Mouse and Keyboard) tick option under advanced

More Applets

- Display/Display Settings Applet
 - Win10 in Settings, not control panel
- User Accounts Applet
 - Allows you to change account details including pictures
 - UAC (User Account Control) settings
- Action Center
 - Security and Maintenance
 - Called Security Center in versions before Win10
 - WSCUI.CPL
 - Firewall (not 7 and 8)
 - Automatic Updates
 - Virus Protection
 - Internet Options (not 7 and 8)
 - Windows 7 and 8 – Performance and trouble shooting added

More Applets

- Windows Firewall
 - FIREWALL.CPL
 - Manage the firewall from the applet
- Power Options
 - POWERCFG.CPL
 - Manage the power settings for the system
 - Hibernate
 - Turns system off.
 - not normally on desktops
 - Sleep/Suspend
 - Low power state
 - Standby
 - Reduces power and turns screen off
 - Shutdown/Turn Off

More Applets

- Credential Manager
 - Stores credentials for applications – e.g. Internet
- Programs and Features
 - appwiz.cpl
- Devices and Printers
- Sound
- Network and Sharing
- Device Manager
- BitLocker
 - Drive Encryption

More Applets

- Windows Defender Firewall
 - firewall.cpl
- Mail
- Indexing Options
 - Indexes files for searching
- Ease of Access
- Administrative Tools

Settings app

- Different wording of the areas between Win10 and Win11
- Time and Language
- Update and Security
 - Can pause updates
- Backup Settings
- Recovery Settings
- For Developers

Windows Updates

- Windows 10 changed HOW updates were delivered
 - Now mandatory
- Updates can be defer for up to 8 days
- Updates can be paused for up to 35 days

The Windows Registry

- Database for windows
- Contains settings, registration info, file extension associations.
- REGEDIT
- Needs admin rights
- BE CAREFUL – BE VERY CAREFUL
- <https://www.lifewire.com/what-is-a-registry-hive-2625986>
- Exercise – visit the above link and read about the following “hives”
 - HKEY_CLASSES_ROOT
 - HKEY_CURRENT_USER
 - HKEY_LOCAL_MACHINE
 - HKEY_USERS
 - HKEY_CURRENT_CONFIG
- Last Known Good Configuration
 - Win7 and earlier
 - F8 on boot
 - uses an earlier copy of the registry

The Windows Registry

- Last Known Good Configuration
 - Win7 and earlier
 - F8 on boot
 - uses an earlier copy of the registry
- On Win8/10/11 if two consecutive failed boot attempts, the Windows Recovery Environment (WinRE) is invoked
- Restore Points take a copy of the registry

Windows Registry

- Known as The Registry
- Central configuration Database
- Loaded at Startup
- Holds all the configuration information for the installation
- Local User information
- File extension information

More Registry

- Comprised of the following 5 files
 - C:\Windows\System32\Config
 - Default
 - SAM
 - Security
 - Software
 - System
 - Individual Entries are called Keys
 - HKEY – Handle to Registry Key

More Registry

Hive	Contents
HKEY_CURRENT_USER	User-specific configuration information for the user currently logged into Windows. e.g. colour scheme and wallpaper
HKEY_USERS	User-specific configuration information for any user who has ever logged into Windows.
HKEY_LOCAL_MACHINE	Configuration information for the PC's hardware. e.g. Network Settings (if not set in HKEY_CURRENT_USER)
HKEY_CURRENT_CONFIG	Current configuration for the PC's hardware, including Plug and Play configurations.
HKEY_CLASSES_ROOT	File association information.

Windows 10 Versions

- Use winver to see the version of Windows 10 you are using.
- Change twice a year (semi-annual)
- The number indicates the year and month of release
 - Example shown is 1909 meaning Sept 2019



Disk Management

- All disks need to be partitioned and formatted
- Partitioning
 - creates logical drives
 - One HDD can have multiple partitions
- Formatting
 - Creates and configures a partition for use

Partition Type	Description
FAT	<ul style="list-style-type: none">.Introduced in 1981.Uses 8.3 naming convention.Became FAT16.Max partition size 2GB
NTFS	<ul style="list-style-type: none">.For typical Windows installations..Can handle large disk partitions..More efficient than FAT32..File and folder compression.Can handle partitions greater than 32GB
FAT32	<ul style="list-style-type: none">.For legacy Windows installations..Less secure than NTFS..Disk partition size restrictions..Only use if absolutely necessary.Greater than 2GB then FAT32.Smaller than 2GB then FAT16.Maximum 32GB
exFAT	<ul style="list-style-type: none">.Extended FAT.Better for flash drives where NTFS cannot be used..For sharing external files between Windows and OS X computers..Provides read/write access of Windows partitions to OS X users

Partition Type	Description
CDFS	<ul style="list-style-type: none">.Compact Disc File System..Enables multiple OSs to read the same optical disc
ext2,ext3,ext4	<ul style="list-style-type: none">.For Linux installations.ext4 the latest (and now partially supported by Windows).Volumes of 1 Exbibyte (EiB) and files of 16 Tebibytes (TiB)
NFS	<ul style="list-style-type: none">.Network File System..Hosted on a server..Clients access over the network as if the files were stored locally.
VFAT	<ul style="list-style-type: none">.Virtual FAT.Introduce in Win95.Allowed 255 Character file names.Also created an 8.3 file name

Other Partition Information

- Swap Partition
 - Linux and Unix installations
 - Same as Page file in the windows system
 - Own partition type
- Formatting Partitions
 - Quick Format
 - A new File Allocation Table is created
 - Original files remain to be written over
 - Full Format
 - A new File Allocation Table is created
 - Original files are written over

Disk Management MMC

- Right Click on Start Menu
 - Select Disk Management (diskmgmt.msc)
- Windows supports three types of partition styles
 - Basic Disks
 - MBR (Master Boot Record) – standard BIOS partition table
 - 4 Primary partitions
 - Or 3 Primary Partitions and one extended partition
 - An extended partition can contain up to 26 logical partitions
 - The boot partition must be set to active, only one can be active
 - GPT
 - GUID Partition Tables
 - Used by UEFI (Unified Extensible Firmware Interface)
 - Greater than 2TB
 - Can have 128 Primary partitions (no need for logical or extended therefore)
 - Dynamic Disks
 - MS designed system
 - Up to 2000 volumes (Or partitions)
 - All will have a 1MB partitioning table database

Disk Management MMC

- Initialize Disks (Makes the disk readable to the system)
- Mount Partitions (makes it available to the system)
- Extending Partitions (allows you to grow a partitions size)
- Shrink Partitions
- Allows checking of a drives health
 - Files are not always written contiguously (all the data in one location)
 - Defragmenting allows the file system to tidy up the disk to consolidate fragmented files
 - Defragmented drives operate better
 - Do not defragment an SSD