



Windows 10 Overview and Installation

# Overview of Windows 10

## *Operating System*

- ❖ An *operating system* is a collection of programs that manage the internal workings of a computer system. It is considered the backbone of a computer.
- ❖ An operating system is a program designed to manage and run hardware & other applications, programs on a Computer.

*operating system*

- ❖ OS does CPU Management
- ❖ OS does Memory Management
- ❖ OS does Hardware Management
- ❖ OS does data & disk Management
- ❖ OS does Task Management
- ❖ OS does Internet Management
- ❖ OS does Programs / Application Management
- ❖ OS does users & groups management
- ❖ OS gives intelligence to Computer
- ❖ Without OS Computer is a Dead Machine

*operating system*

- CUI & GUI
- Client OS & Server OS

## Windows 10

- Windows 10 is the most recent version of the operating system from Microsoft. Officially it was released in 2015 and was initially offered free of charge to legitimate users of Windows 7 and Windows 8.1.
- Win 10 combines features from those two previous editions ( Win7 + Win 8.1) to suit the users in a better way for both desktop/laptop computers as well as mobile devices.

## WaaS model and Windows update for Business

- The Windows 10 operating system introduces a new way to build, deploy, and service Windows: **Windows as a service (WASS)**.
- Windows as a service is the approach Microsoft introduced with Windows 10 to deploy, update and service the operating system.

- Instead of releasing a new version of Windows every three to five years, as the company did with past iterations of the operating system,
  - Microsoft will continually update Windows 10.
  - The updates are categorized in two ways: feature updates and quality updates.
- 
- Feature updates occur about twice a year, roughly scheduled for March and September. They contain new functionalities for the operating system (OS).

- Quality updates are cumulative updates that come out at least once a month and contain security patches and other fixes to make the OS more reliable.
- Because they are cumulative, the latest update carries all of the updates that came before it and trumps any previous updates.
- Each feature update continues to receive quality updates for 18 months after its initial release.

## Windows 10 SKU, Requirements, and Licensing

- Microsoft has announced the official **list of all Windows 10 editions as SKUs (Stock Keeping Unit)**.
- Windows 10 Home
- Windows 10 Pro
- Windows 10 Mobile
- Windows 10 Enterprise
- Windows 10 Mobile Enterprise
- Windows 10 Education

## Requirements

**Microsoft lists the Windows 10 minimum hardware requirements as:**

- Processor: 1 gigahertz (GHz) or faster processor or SoC.
- RAM: 1 gigabyte (GB) for 32-bit or 2 GB for 64-bit.
- Hard disk space: 16 GB for 32-bit OS 20 GB for 64-bit OS.
- Graphics card: DirectX 9 or later with WDDM 1.0 driver.
- Display: 800x600.

## Licensing

- Activation in Windows 10
- Activation helps verify that your copy of Windows is genuine and hasn't been used on more devices than the Microsoft Software License Terms allow.

## Licensing

- Depending on how you got your copy of Windows 10, you'll need either a 25-character product key or a digital license to activate it.
- Without one of these, you won't be able to activate your device.
- The product key or digital license can't be substituted for one another.

## Licensing

- A Windows product key is a 25-character code used to activate Windows. It looks like this:
- PRODUCT KEY: XXXXX-XXXXX-XXXXX-XXXXX-XXXXX
- During installation, you'll be prompted to enter a product key. If you have a digital license, select the option to continue without entering a product key.

## Windows 10 - Installation

- There are two approaches you can take for installing Windows 10 in your computer: **Upgrade or a Clean Install**.
- Typically, when you upgrade your operating system, all your documents and applications remain unchanged,
- whereas with a clean install you would be starting again from scratch.
- But one important thing to verify first is if your computer has the necessary hardware to support Windows 10.

## Windows 10

- The main hardware requirements are –
  - ❖ A processor (CPU) with a clock rate of at least 1GHz.
  - ❖ At least 1 to 2GB of memory (RAM), but Microsoft recommends 4GB.
  - ❖ At least 16GB space in your hard disk.
- One important thing to note is that the installation process itself will verify your computer hardware and let you know if it qualifies for a Windows 10 upgrade or not.

## Windows 10 Upgrade

- If your computer qualifies for a Windows 10 upgrade, then you can follow these steps to perform the upgrade –
- Look for the Windows 10 notification in the lower-right corner of the screen. This is a one-year-only offer that Microsoft is extending to valid users of Windows 7 and Windows 8.1.



## Windows 10 Clean Install

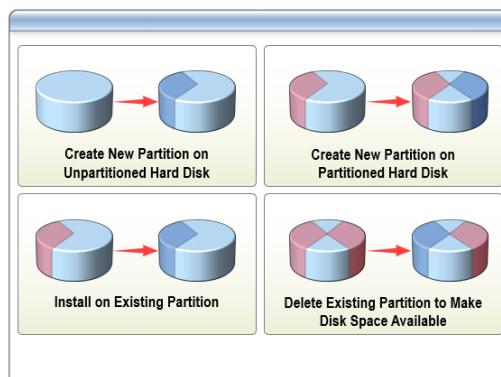
- If your computer has an older operating system like Windows XP or Vista, you won't be able to upgrade for free.
- In these cases, you'll need to buy a boxed copy of Windows 10 to have a valid license for the installation.

## Windows 10 Clean Install

- Checking System Requirements
- Checking Hardware and Software Compatibility
- Determining Disk Partitioning Options
- Choosing the Appropriate File System: FAT, FAT32, or the NTFS File System
- Deciding on a Workgroup or Domain Installation
- Completing a Pre-Installation Checklist

## Windows 10 Clean Install

### Determining Disk Partitioning Options



## Windows 10 Clean Install

- What Is A File System?
- A file system is basically a set of rules used to decide how data is stored and fetched in a storage device, be it a hard drive, flash drive, or something else.
- Windows 10 uses the default file system **NTFS**, as does Windows 8 and 8.1.

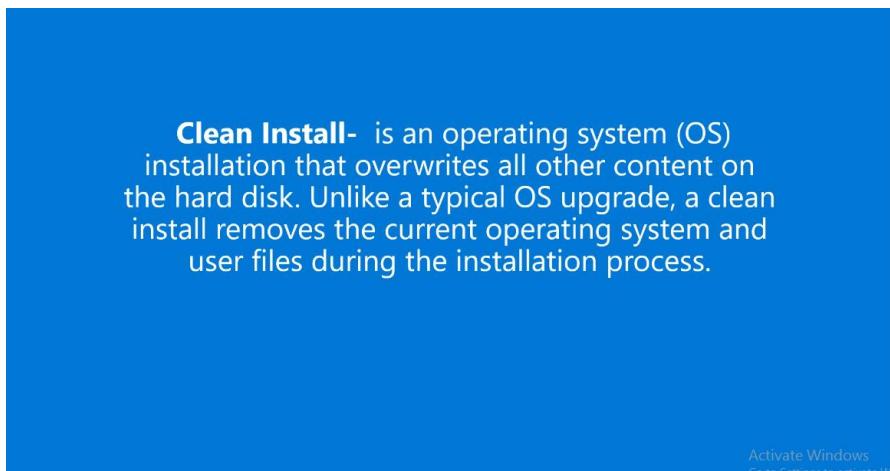
## Windows 10 Clean Install



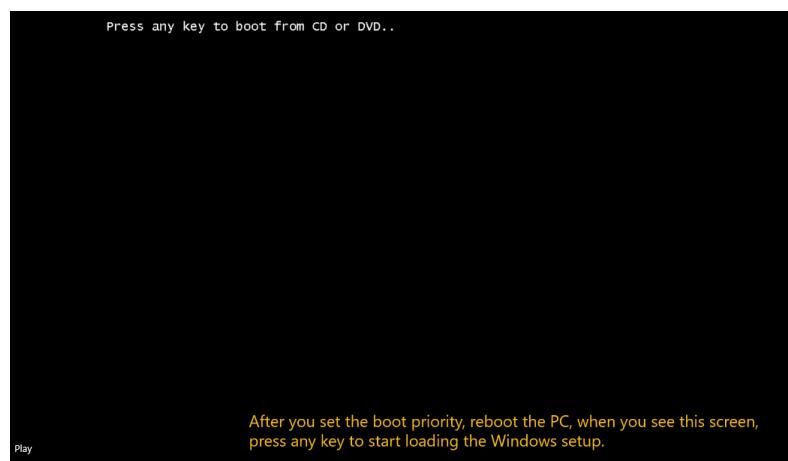
If you choose this type of an installation, just insert the disc in your computer and turn it on.

Most computers will ask you to press a specific key to boot from the CD/DVD, but most systems use the F12 key.

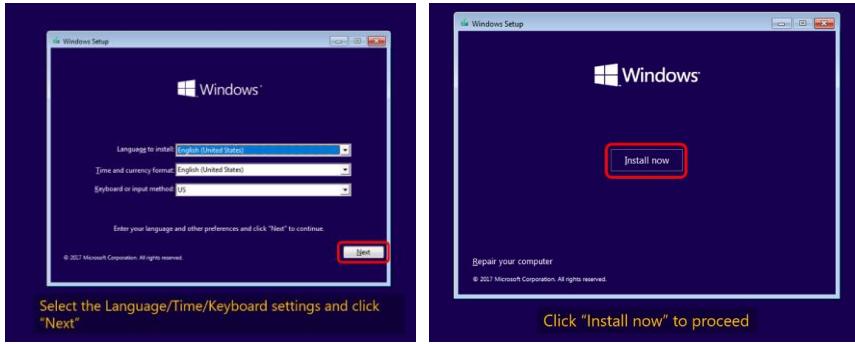
## Windows 10 Installation



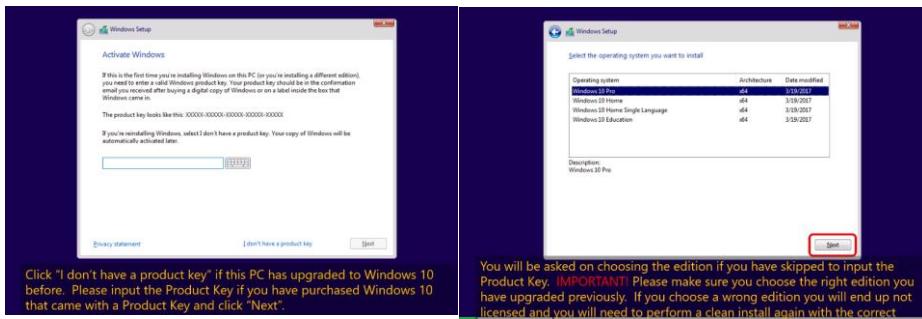
## Windows 10 Installation



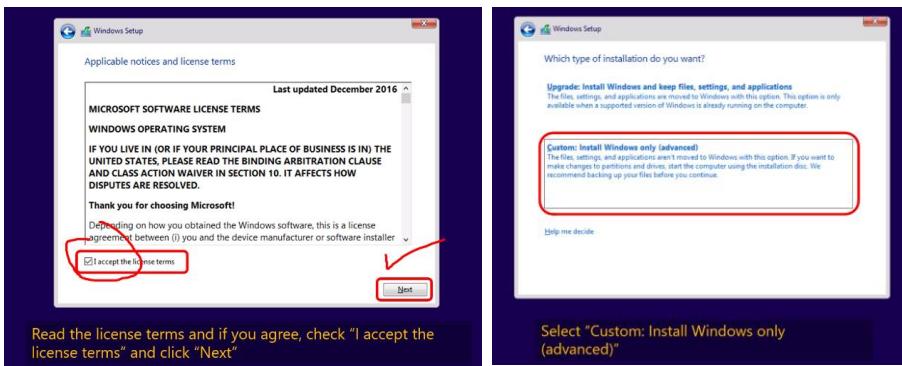
## Windows 10 Installation



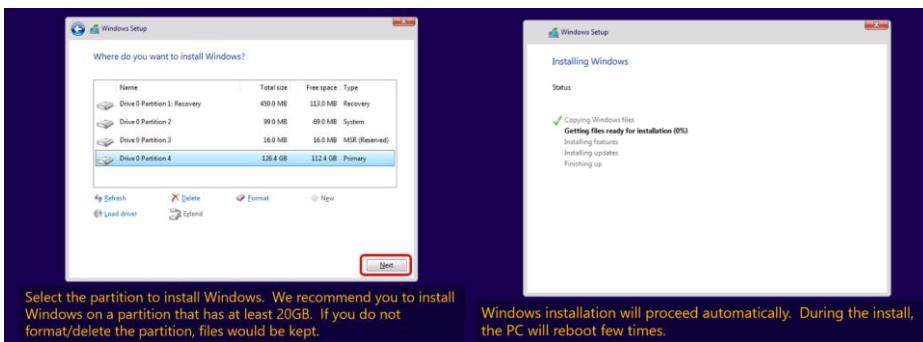
## Windows 10 Installation



# Windows 10 Installation



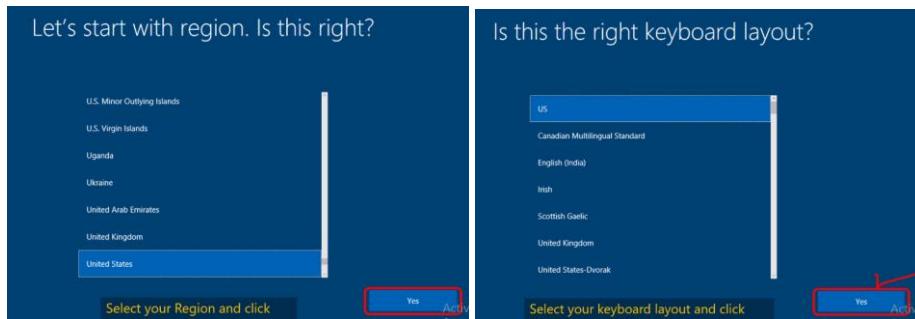
# Windows 10 Installation



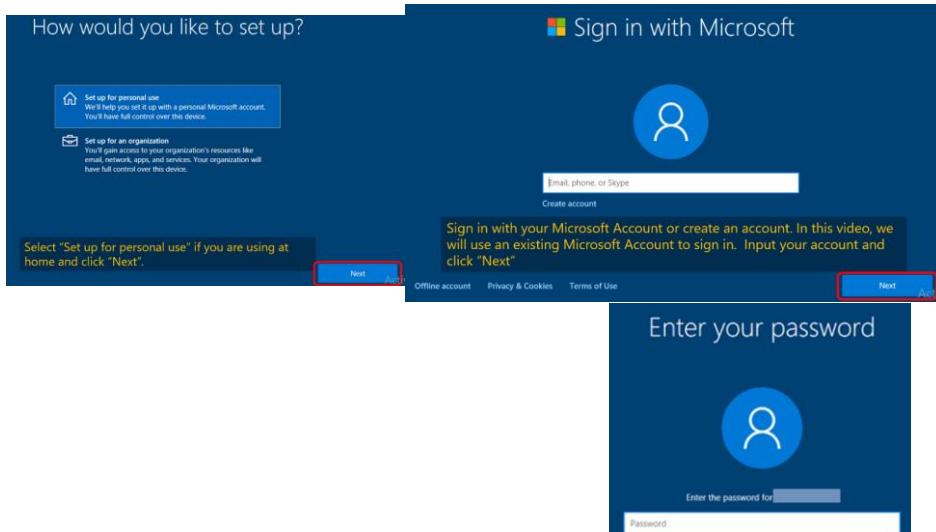
## Windows 10 Clean Install

VOLUME SIZE	FAT16	FAT32	NTFS
	CLUSTER SIZE	CLUSTER SIZE	CLUSTER SIZE
7MB – 16MB	2KB	Not supported	512 bytes
17MB – 32MB	512 bytes	Not supported	512 bytes
33MB – 64MB	1KB	512 bytes	512 bytes
65MB – 128MB	2KB	1KB	512 bytes
129MB – 256MB	4KB	2KB	512 bytes
257MB – 512MB	8KB	4KB	512 bytes
513MB – 1GB	16KB	4KB	1KB
1GB – 2GB	32KB	4KB	2KB
2GB – 4GB	64KB	4KB	4KB
4GB – 8GB	Not supported	4KB	4KB
8GB – 16GB	Not supported	8KB	4KB
16GB – 32GB	Not supported	16KB	4KB
32GB – 2TB	Not supported	Not supported	4KB

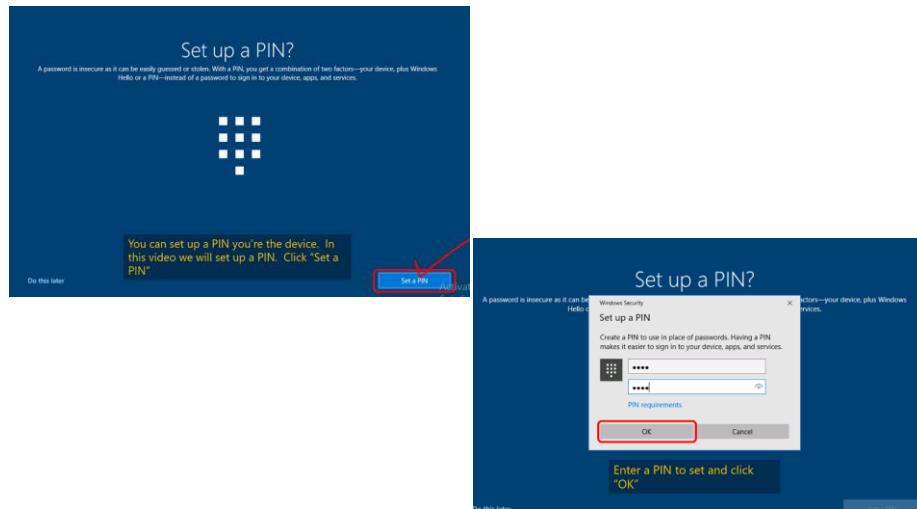
## Windows 10 Installation



# Windows 10 Installation



# Windows 10 Installation



# Windows 10 Installation



# Windows 10 Installation



# Windows 10 Installation



## Windows 10

- Windows 10 - Getting Started
- After you have installed or upgraded your Windows, you will get a Welcome Screen with the time and date. Just click anywhere to go to the User Accounts Screen.



# User Interface

## Out of Box Experience

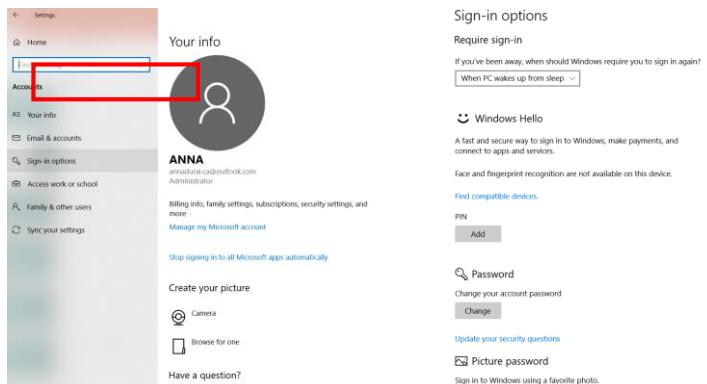
- When customers turn on their Windows PCs for the first time, they will see the Windows Out of Box Experience (OOBE). OOBE consists of a series of screens that require customers to accept the license agreement, connect to the internet, log in with, or sign up for a Microsoft Account, and share information with the OEM etc..

## Out of Box Experience

- For software, this often means easy installation and "Welcome" or "Initial Configuration" wizard screens that simplify elaborate set-up. The OOSE can also include the complete lack of such wizards.

## Different ways of Sign in options

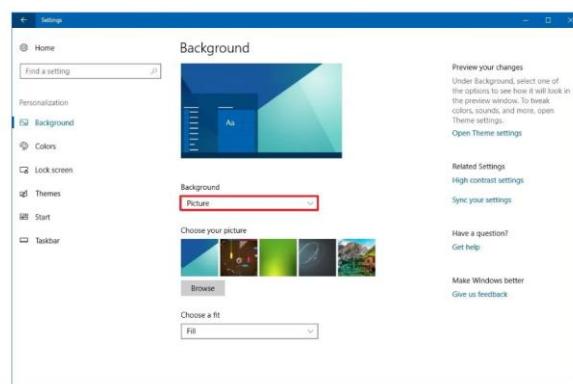
- How to Change Sign-in Options on Windows 10**
- Regularly **changing sign-in options** (i.e. PIN, user password and picture password) makes sense in terms of password protection and data safety.



# Interface Changes - Start Screen Layout / Tiles changes

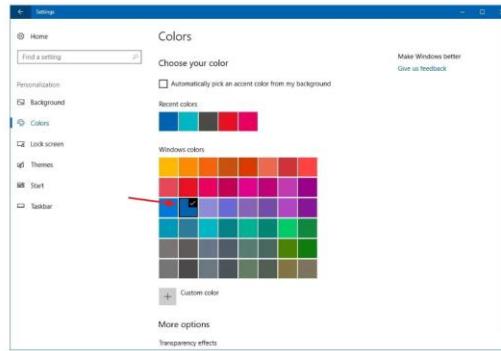
## Background Changing

1. Open Settings.
2. Click on Personalization.
3. Click on Background.
4. Using the "Background" drop-down menu, select the Picture option.



# Color Changing

1. Open Settings.
2. Click on Personalization.
3. Click on Colors.
4. Select the color accent you want to use through the experience.



# How to apply theme

## How to apply a theme

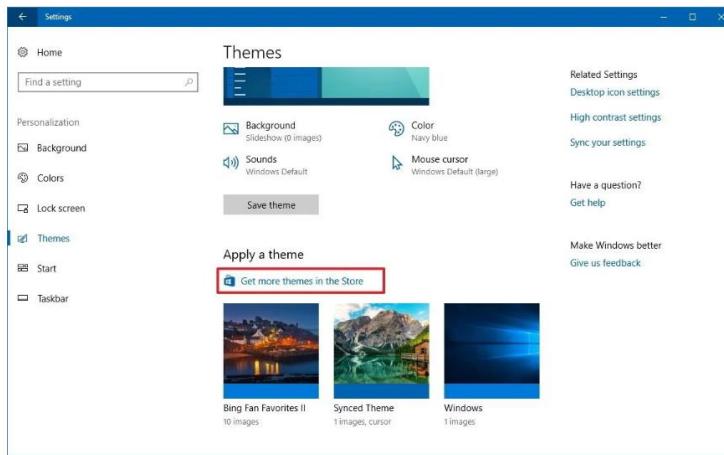
Although Windows 10 includes many ways to personalize your experience, the quickest way to change the look and feel is to use a theme.

A theme is just a package that can contain one or more background images, color accent, and sounds, and they're quickly acquirable from the Microsoft Store.

To get and apply a new theme on Windows 10, do the following:

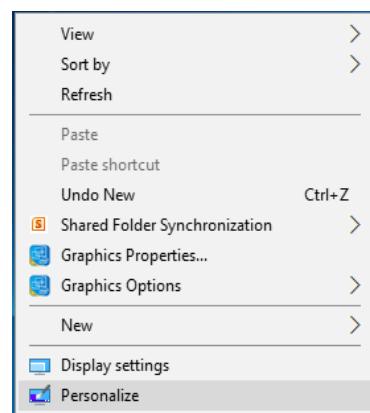
1. Open Settings.
2. Click on Personalization.
3. Click on Themes.
4. Click the Get more themes in the Store link.

## Themes

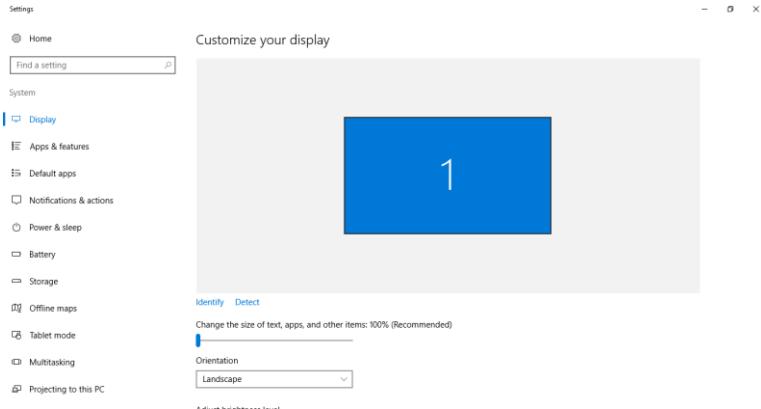


## Desktop Background

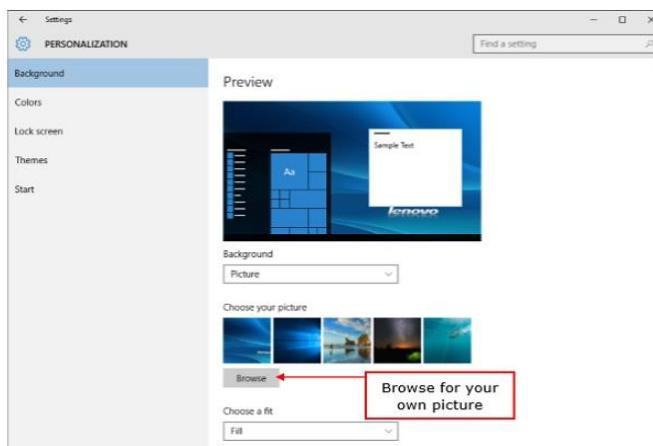
- Another component of your Desktop is the Background.
- This is simply an image that appears at the back of your screen. Most computers come with a pre-selected background, but you can change it to any image you want.



## Display Settings



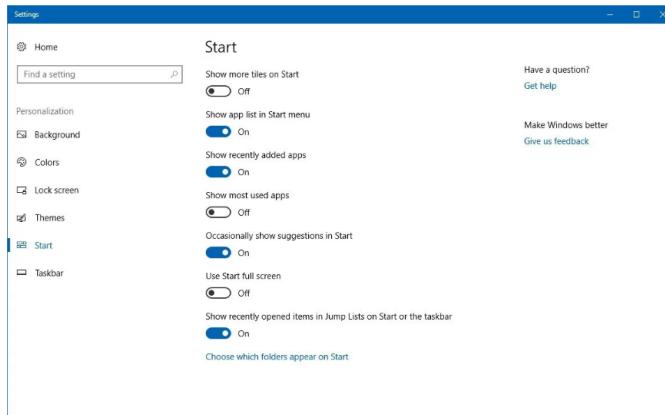
## Personalize



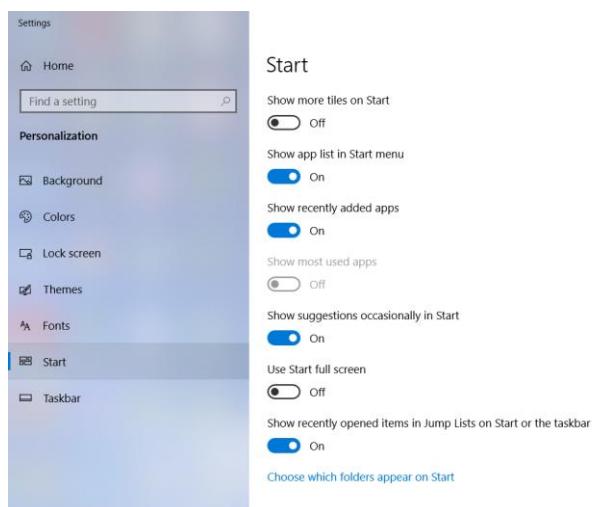
## Changing basic Start menu settings

You can customize almost everything you see on the menu with the options available through the Start page in the Settings app using these steps:

1. Open Settings.
2. Click on Personalization.
3. Click on Start.



## Start Screen Layout



## Windows 10 Start Menu

- The most notable change in Windows 10 is that Microsoft replaced the Start screen tiles from Windows 8, and brought back the Start Menu.
- These changes make this Windows version easier to use for users of both desktop/laptops and mobile devices.



## Windows 10 Start Menu

### Windows 10 - Navigation

To navigate your Windows, you can simply type what you are looking for on the Taskbar search. It can be the name of a document or application, or just any information you are looking for.

### Start Menu

If you are looking for a specific application, you can also open the Start Menu and click "All Applications". This will open an alphabetical list of all the applications installed on your computer.

## Windows 10 Start Menu



The left pane resembles the traditional Start Menu from Windows 7 and earlier, while the right pane features live tiles that were used in Windows 8.

### Left Pane

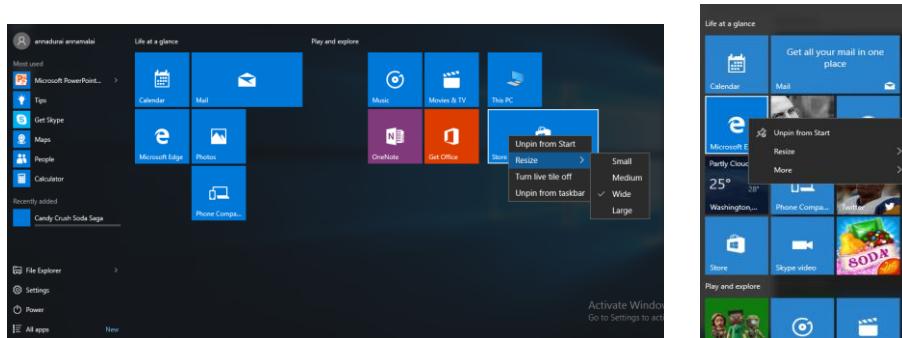
- Among the things you can do in the left pane are –
- Click the username at the top of the menu to change account settings or log in with another user.
- Access the applications you use more frequently.
- A small arrow next to an application will open a sub-menu with a list of recent documents opened with that application.
- Open the “File Explorer” to navigate your folders and files.
- Change the settings of your computer like your Internet connection or changing your background.
- See different options to shut down your computer.
- See a list of all the applications installed in your computer.

# Start Menu



## Right Pane

- The right pane features a varied array of tiles, similar to the ones that were seen on the Start Screen of Windows 8.
- These tiles can be moved and dragged to different places by holding the mouse button.

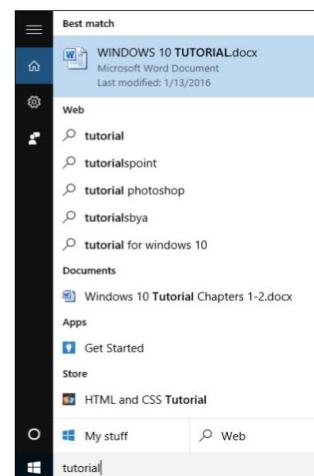


## Win 10 - Desktop



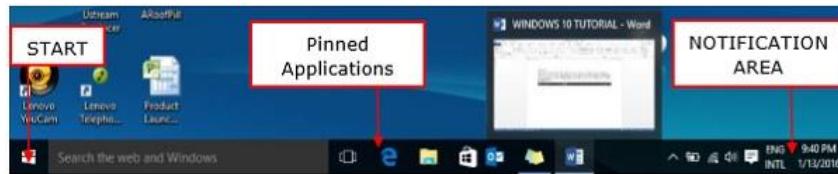
## Search Box

- The “Search box” on the Taskbar will allow you to search within your documents and files or on the Web for anything you write. The initial results will appear within the Start Menu itself.
- The results will be grouped according to the closest match (or matches) labeled “**Best match**” at the top of the list.



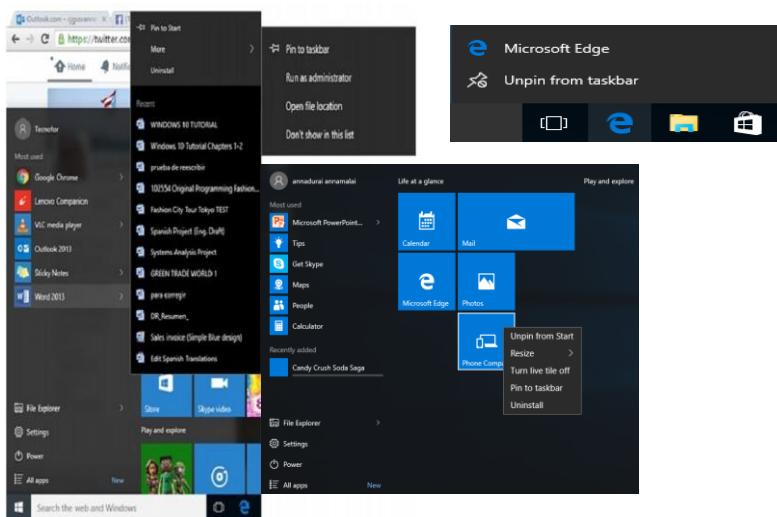
## Windows 10 - Taskbar

The Windows 10 taskbar sits at the bottom of the screen giving the user access to the Start Menu, as well as the icons of frequently used applications.

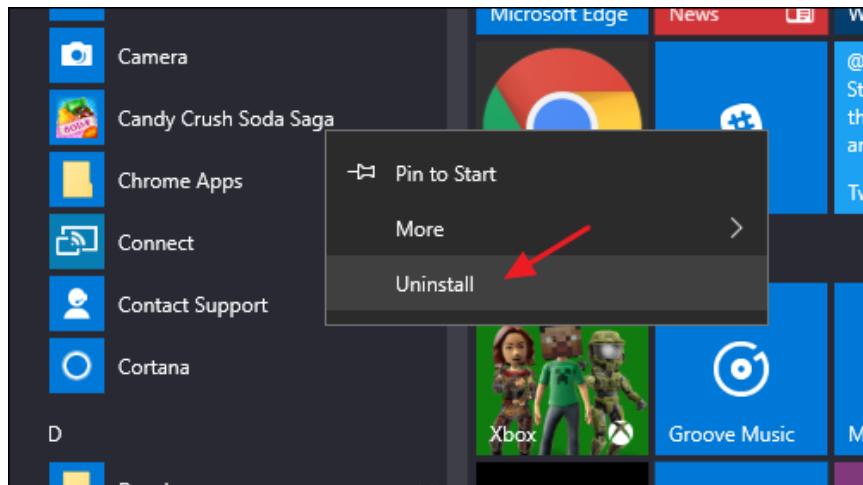


The icons in the middle of the Taskbar are “pinned” applications, which is a way to have a quick access to applications you use frequently. “Pinned” applications will stay in the Taskbar until you “unpin” them.

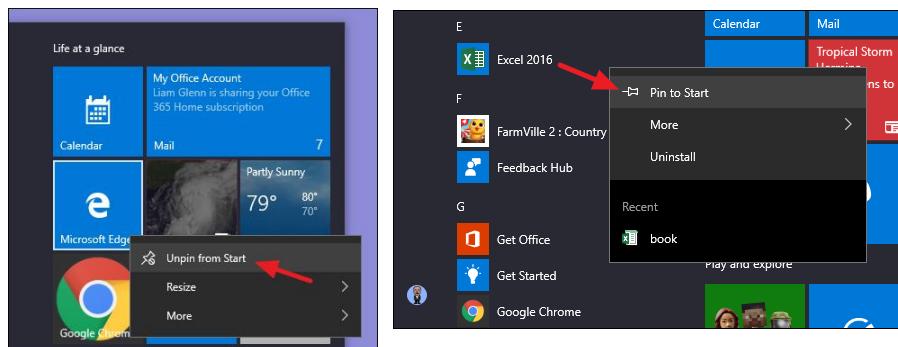
### Unpin an Application from the Taskbar



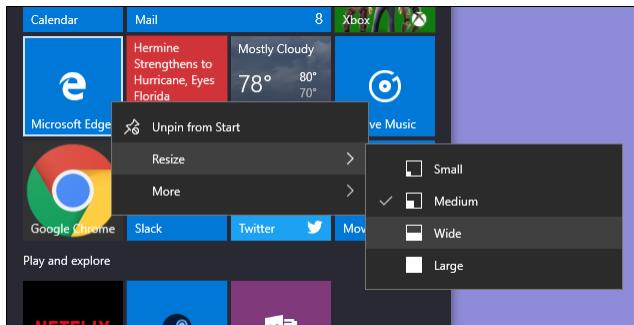
## Tiles Changing



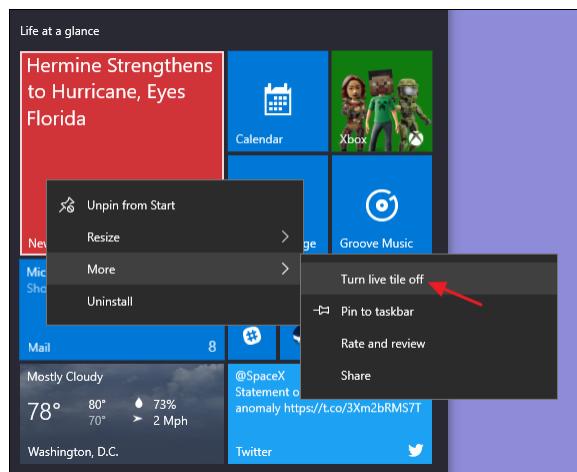
## Tiles Changing



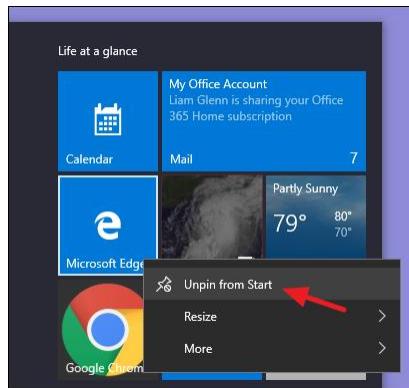
## Tiles Changing



## Tiles Changing



## Tiles Changing



## Continuum

- Continuum is designed to simplify the transition from keyboard and mouse systems(PC) to touch screen tablet mode on convertible devices.



## Windows 10 - Continuum

- The Tablet Mode is a new feature in Windows 10, which allows the user to switch the system interface, whenever a tablet is detached from a base or dock.
- When the Tablet Mode activates, the Start Menu goes full-screen. During Tablet Mode, many other windows like the File Explorer or the Settings window also open at full screen.

## Continuum

- Use your phone like a PC to get incredible productivity that fits in your pocket. Connect a monitor, keyboard and mouse\* or use your phone screen as your virtual trackpad and keyboard. You're all set to touch down and get right into email, browsing and working with apps like Office.



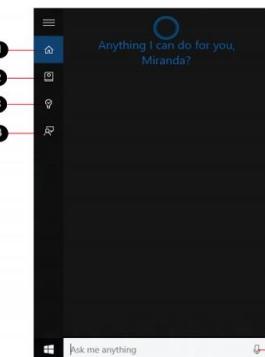
# Cortana



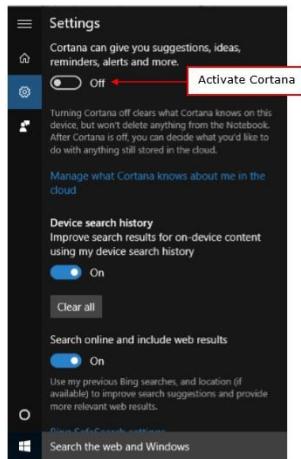
- Windows 10 will bring Microsoft's **voice controlled digital assistant** Cortana, to make it easier for you to interact with your device without lifting a finger.
- We will be able to search your **hard drive** for specific folders and files.
- Cortana is able to **send emails** while you're working on a spreadsheet making multi-tasking much easier.

## Cortana

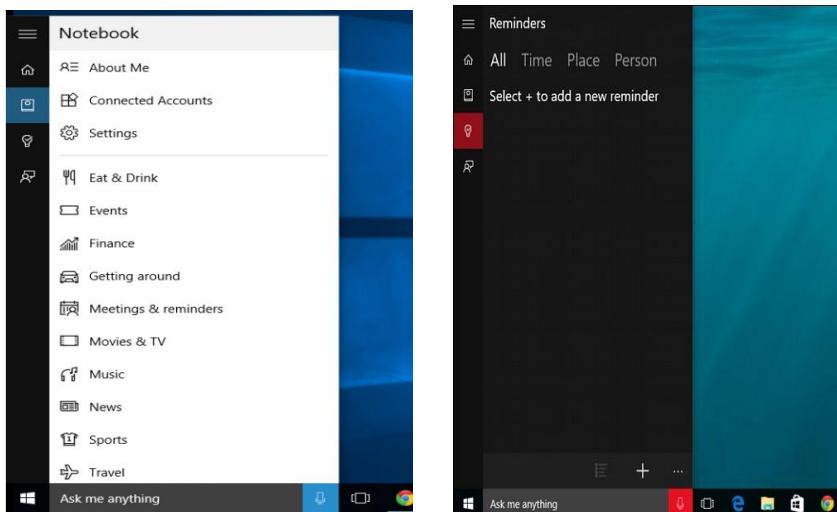
- Cortana is now the search tool from within Windows 10. It will search both your computer and the internet using Bing.
- You can either type in the box or use a microphone if you have one.
- The icons on the left-side are for –
  - Home
  - Notebook
  - Reminders
  - Feedback



# Cortana

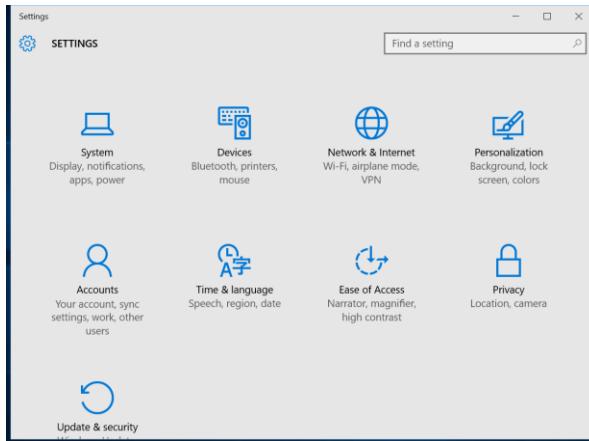


# Cortana



# PC Settings & Customizations

Settings is replacement for Control Panel



Universal Modern Apps & Windows Store

## Universal Modern Apps & Windows Store

- At this very moment, millions of mobile devices are accessing millions of Web sites and mobile apps.
- Web sites and apps absolutely must support multiple devices and form factors nowadays.
- According to Research and other statisticians, more than 55 percent of Americans use a smartphone to access the Internet, and 30 percent of Americans use only a phone to access the Internet.
- These numbers are growing, as phones become cheaper and easier to use.

## Universal Modern Apps

- Users can have the best experience on all devices—from desktops to phones—when a Web site or app is designed with mobility first.
- It's difficult to scale down from a large screen to a tiny one. Instead the reverse is very easy (small to bigger size)

## Universal Windows Platform

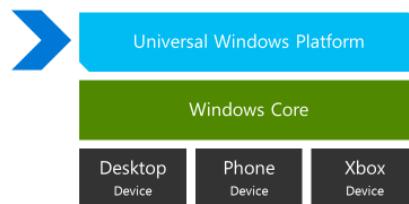
- Windows 10 is the true universal Windows OS family. Now you can build and maintain one code base, one package and one-submission-to-one-store for all Windows 10 devices.
- That means everything from phones, tablets and laptops to desktops, ultrabooks and servers. You name it, UWP apps can run on it.

Universal Windows Platform

A single API surface

A guaranteed API surface

The same on all devices



## Modern App

- Unlike traditional Desktop (or classic) apps, a Modern app has a single, chromeless (i.e., no outside frame) window that fills the entire screen by default.



|

## Microsoft Store

- The Microsoft Store is a digital storefront for Windows users. It offers all sorts of digital content for download in one place, some free and some paid.
- You can think of it as a similar offering to Google Play for Android users and Apple's App Store.

## Microsoft Store

- Microsoft Store (formerly known as Windows Store) is a digital distribution platform sponsored by Microsoft.
- It started as an app store as the primary means of distributing Universal Windows Platform (UWP) apps.

## Microsoft Store

- With Windows 10, Microsoft merged its other distribution platforms (Windows Marketplace, Windows Phone Store, Xbox Video and Xbox Music and eventually Xbox Store) into Microsoft Store,
- making it a unified distribution point for apps, digital videos, digital music, console games, and e-books.
- As of 2015, there were over 669,000 apps available on the store.

## Microsoft Store for Business

- The Microsoft Store for Business gives you a place to find and **purchase** apps for your organization, individually, or in volume.

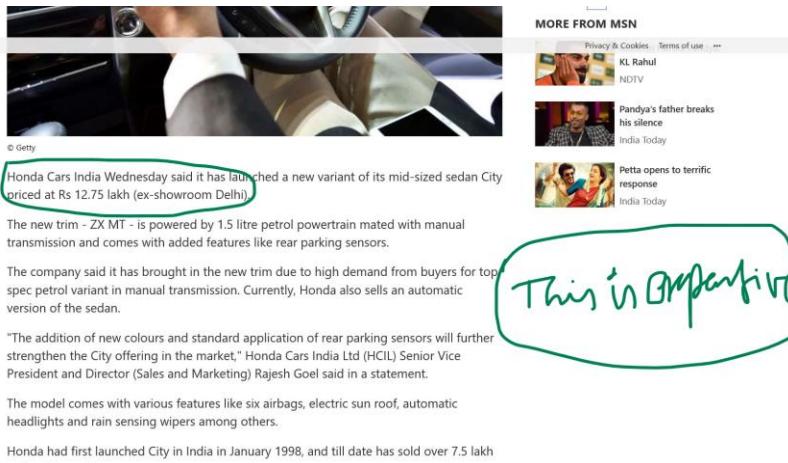
## Microsoft Edge Browser

- Edge is the Default Browser unless changed
- Faster and more secure than IE
- More closely adheres to Web standards
- Has a reading function to save a page to read later
- Allows you to mark up a web page with text, drawing or highlighting
- Uses Bing as its search engine – can be changed with difficulty

## Edge Browser

- New features include **PDF support**, a **reading mode** that improves the layout of long articles, and a **new note taking feature**.
- Edge lets you scribble on any page and **share your comments** with your friends through social networks.
- Edge Browser will feature **Cortana support** within the browser, so she can **pull contextual information from the sites**

# Microsoft Edge Browser



The screenshot shows a news article from MSN about the launch of a new variant of the Honda City sedan. The article includes a photo of the car's interior, a quote from Honda Cars India, and details about the car's features and history. A green oval highlights the first paragraph of the article. A large green circle on the right contains the handwritten note "This is important".

**MORE FROM MSN**

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-  Pandya's father breaks his silence India Today
-  Petta opens to terrific response India Today

Honda Cars India Wednesday said it has launched a new variant of its mid-sized sedan City priced at Rs 12.75 lakh (ex-showroom Delhi).

The new trim - ZX MT - is powered by 1.5 litre petrol powertrain mated with manual transmission and comes with added features like rear parking sensors.

The company said it has brought in the new trim due to high demand from buyers for top spec petrol variant in manual transmission. Currently, Honda also sells an automatic version of the sedan.

"The addition of new colours and standard application of rear parking sensors will further strengthen the City offering in the market," Honda Cars India Ltd (HCIL) Senior Vice President and Director (Sales and Marketing) Rajesh Goel said in a statement.

The model comes with various features like six airbags, electric sun roof, automatic headlights and rain sensing wipers among others.

Honda had first launched City in India in January 1998, and till date has sold over 7.5 lakh

## Some other features of Windows 10

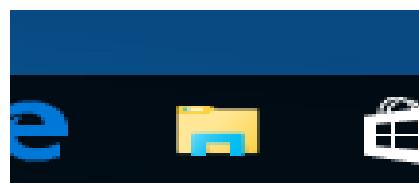
### Notification Area

- The Notification Area is located at the right side of the Taskbar. It shows different types of notifications from your computer like your Internet connection, or the volume level.
- At first, the Notification Area shows a limited amount of icons. But you can click the upward arrow on its left-side to see other icons as well.

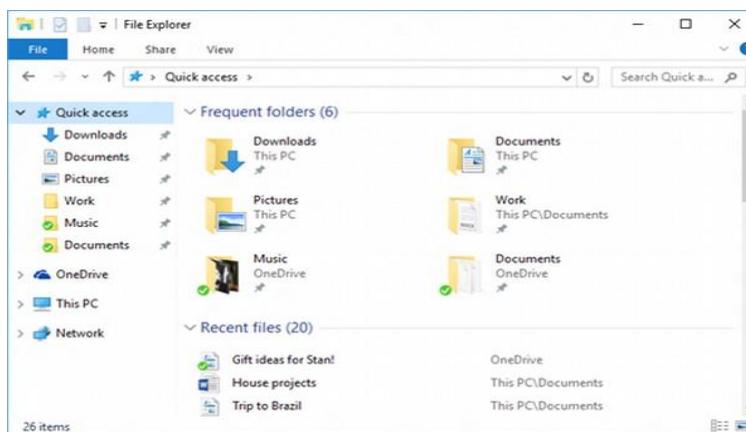


## File Explorer

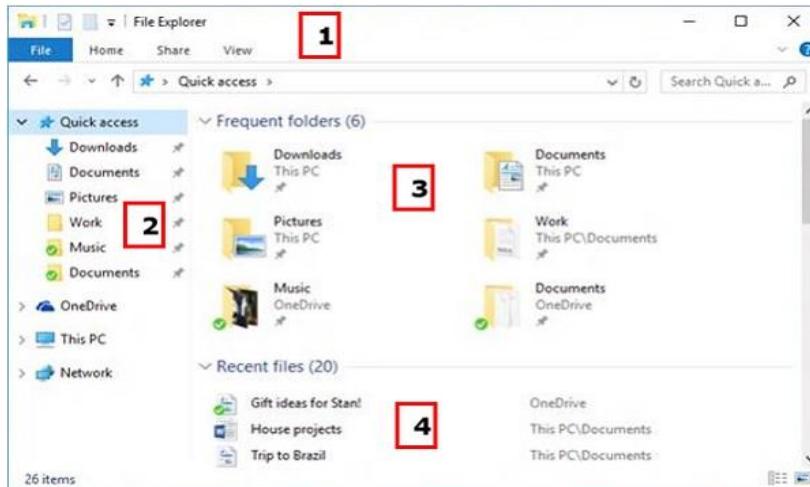
- If you are looking for a specific document, another alternative is to use the File Explorer by clicking on the Folder icon on the Taskbar.
- In the File Explorer window, you can browse all your folders and documents.



## File Explorer



## File Explorer

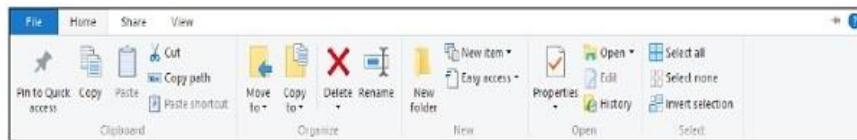


## File Explorer

- The **File Explorer ribbon**, which resembles the ribbon featured in Microsoft Office. The ribbon contains buttons for common tasks to perform with your files and folders.
- The **Navigation Pane** gives you access to your libraries of documents and pictures, as well as your storage devices. It also features frequently used folders and network devices.
- The **Frequent folders** section on the right features the folders you've worked with recently to allow for quick access to them.
- The **Recent files** section in the lower part of the window features files and documents that you've opened recently.

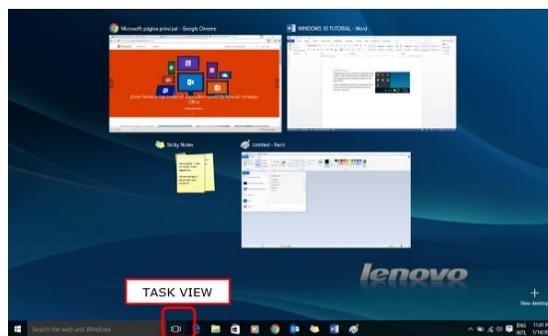
# File Explorer

- In Windows 10, the File Explorer features a new ribbon toolbar, similar to the one featured in the recent versions of Microsoft Office. This ribbon contains buttons and commands for the most common tasks.



# Virtual Desktops

- One of the new features of Windows 10 is the addition of Virtual Desktops. This allows you to have multiple desktop screens where you can keep open windows organized.



## Virtual Desktops

- Virtual desktops give you the ability to have multiple screens which you can switch between to see different programs



## Virtual Desktops



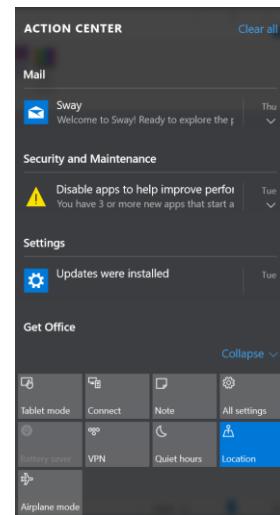
# Virtual Desktops

- Click the “New desktop” option on the lower-right corner. You can access or delete the new Desktop by clicking **Task View** again.



## Action Center

- The Action Center is a means for Windows to provide you information about your system. It is located in the notification bar.



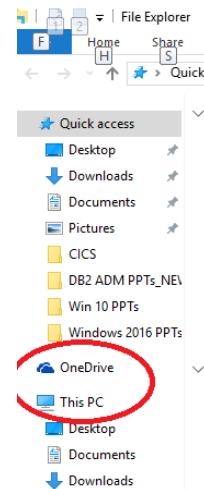
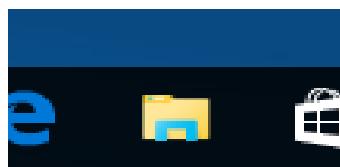
## OneDrive

- By signing in with a Microsoft or Outlook account, you have access to **OneDrive** from your Windows 10.
- OneDrive is a free storage space in the Cloud given to every user of a Microsoft account.

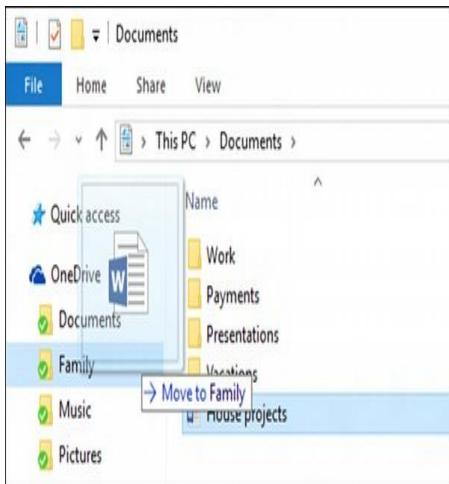
## OneDrive

➤ To access your OneDrive from Windows, simply click on the **File Explorer** icon in the Taskbar.

➤ When the File Explorer window opens, you will see the link to **OneDrive** on the left side of the screen.



## OneDrive



A green checkmark means that the document or folder is in sync with the online version.

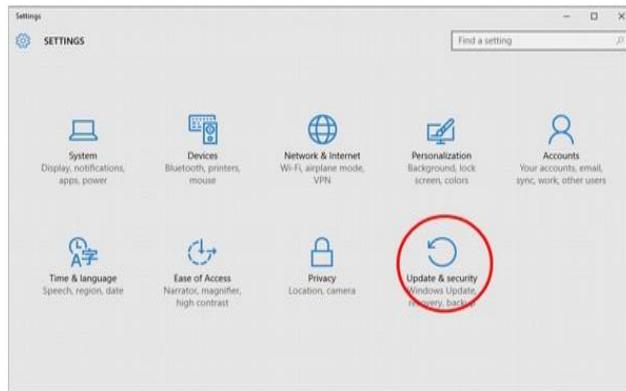
A blue double-arrow means that the document or folder is currently syncing.

A red X means that there was some issue or problem syncing the document or folder.

## Managing File & resources

## Windows Defender

- Windows Defender is an antivirus and malware protection included in your operating system. It allows you to scan your computer for malicious software, while also checking each file or program you open.

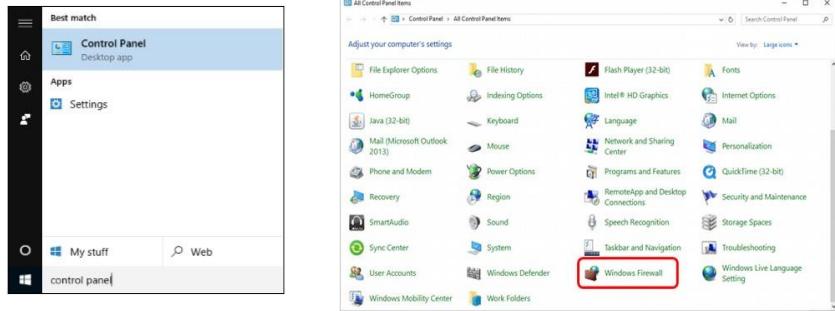


## Windows Defender

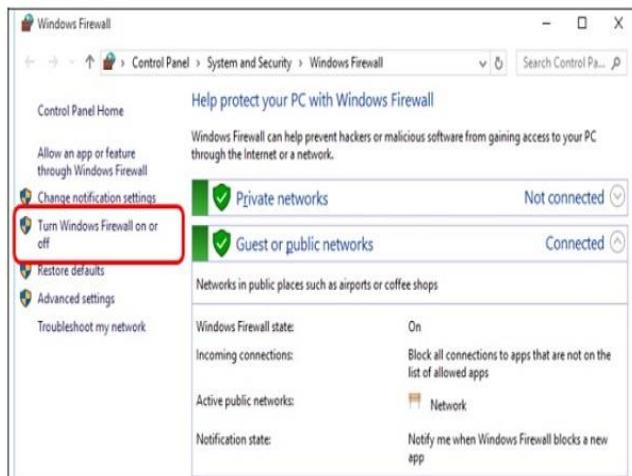


## Windows Firewall

- Windows Firewall prevents unauthorized access from outside to get into your computer. By default, it is turned on to protect your computer and your network.

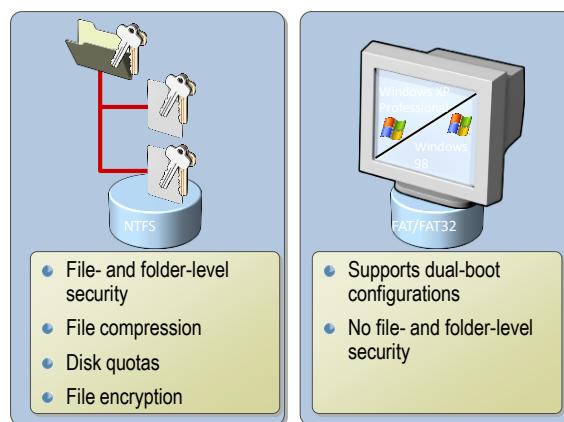


## Windows Firewall



## Configuring and managing file access

### Security Permissions(NTFS)



Choosing the Appropriate File System: FAT, FAT32, or the NTFS File System

## Security Permissions(NTFS)

NTFS Standard Permissions	
List folder content	Allows the file in a folder to be displayed
Read	Allows the file or folder to read
Read & Execute	Allows reading and application execution
Write	Write but can't delete any files
Modify	Can read, write and delete. The most common permissions assigned to end user
Full control	All of the above plus changing permissions, owner.

## Configuring and managing file access

**Allow & Deny**  
Allows permissions are accumulatively  
Deny override all other permissions

**Copying and moving files**  
Moving to same volume permissions are retained  
All other combinations permissions are inherited

## Configuring and managing file access

### Explicit and Inherited Permissions

#### Explicit

Assigned directly to the file or folder

#### Inherited permissions

Assigned from the folder above

New files receive these permissions

Changes applied to hierarchy from single point

## Work Folders

- With Work Folders users can store and access work files on personal computers and devices, often referred to as bring-your-own device (BYOD), in addition to corporate PCs.
- Users gain a convenient location to store work files, and they can access them from anywhere.

## Work Folders

- Organizations maintain control over corporate data by storing the files on centrally managed file servers, and optionally specifying user device policies such as encryption and lock-screen passwords.

## Work Folders

- Work Folders can be deployed with existing deployments of Folder Redirection, Offline Files, and home folders.
- Work Folders stores user files in a folder on the server called a sync share.

## Work Folders

- Administrators can use Work Folders to provide users with access to their work files while keeping centralized storage and control over the organization's data.

## Work Folders

- Provide a single point of access to work files from a user's work and personal computers and devices
- Access work files while offline, and then sync with the central file server when the PC or device next has Internet or intranet connectivity
- Deploy with existing deployments of Folder Redirection, Offline Files, and home folders

## Device Guard

- **Device Guard** is a group of key features, designed to harden a computer system against malware. Its focus is *preventing malicious code from running* by ensuring only known good code can run.
- **Credential Guard** is a specific feature that is not part of Device Guard that aims to *isolate and harden key system and user secrets against compromise*.

## BitLocker

- BitLocker encrypts your data to protect from unauthorized access. BitLocker drives can be encrypted with 128 bit or 256 bit encryption, this is plenty strong to protect your data in the event the computer is lost or stolen. BitLocker protects your hard drive from offline attack.
- This is the type of attack where a malicious user will take the hard drive from your mobile machine and connect it to another machine so they can harvest your data.
- BitLocker also protects your data if a malicious user boots from an alternate Operating System.

## BitLocker

- With either attack method, BitLocker encrypts the hard drive so that when someone has physical access to the drive, the drive is unreadable.
- Now if you are a network admin and you need to harvest data from a hard drive when a machine fails, our tools include the functionality to prompt the admin for the recovery key so the hard drive can be accessed.
- We've done a good job at ensuring the data does not end up in the wrong hands, while making it easy for authorized users to access the data in the event of a failure.

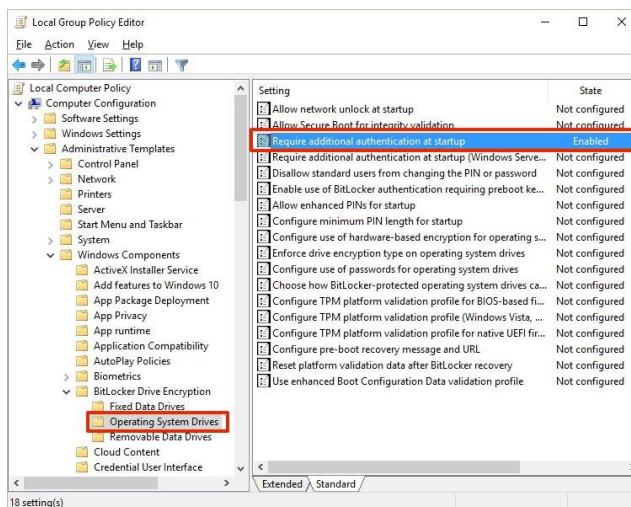
## BitLocker

- BitLocker does not protect the computer's contents while Windows is running. Again, BitLocker is built for *offline* attacks, once the operating system is up and running, the OS will protect your data from unauthorized access.

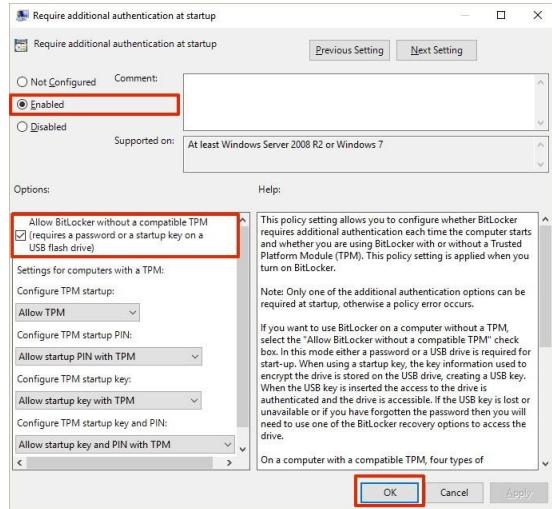
## BitLocker

1. Use the Windows key + R keyboard shortcut to open the Run command, type **gpedit.msc**, and click OK.
2. Under Computer Configuration, expand **Administrative Templates**.
3. Expand **Windows Components**.
4. Expand **BitLocker Drive Encryption and Operating System Drives**.
5. On the right side, double-click **Require additional authentication at startup**.

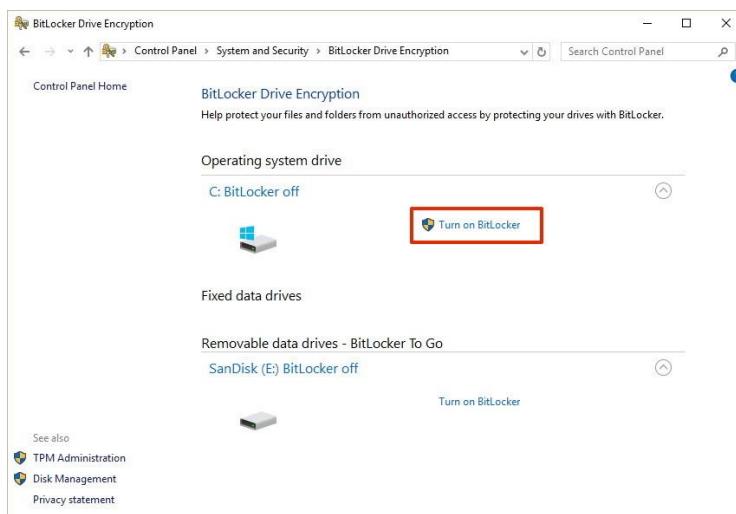
## BitLocker



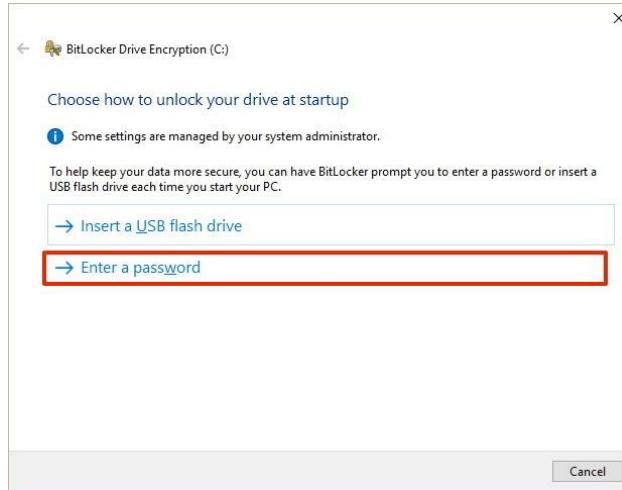
## BitLocker



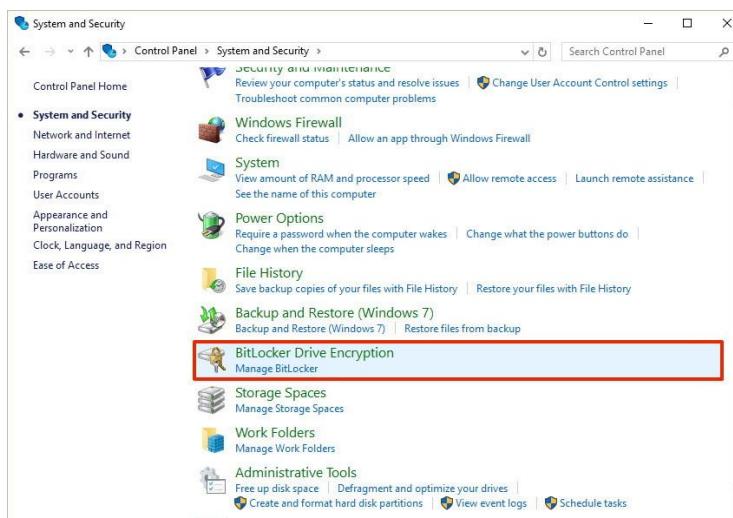
## BitLocker



# BitLocker



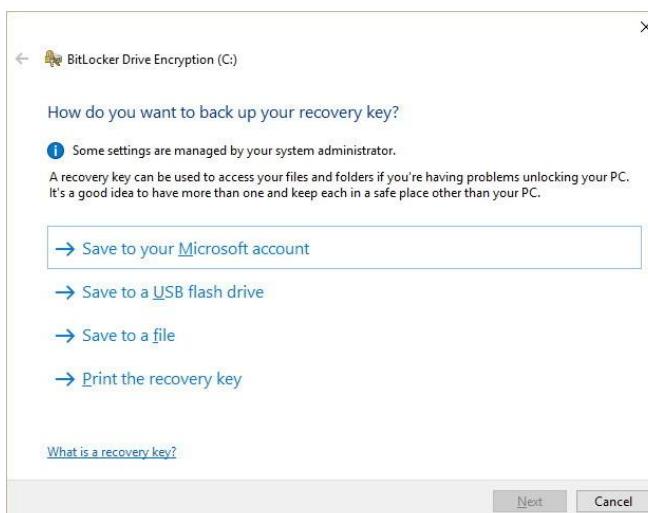
# BitLocker



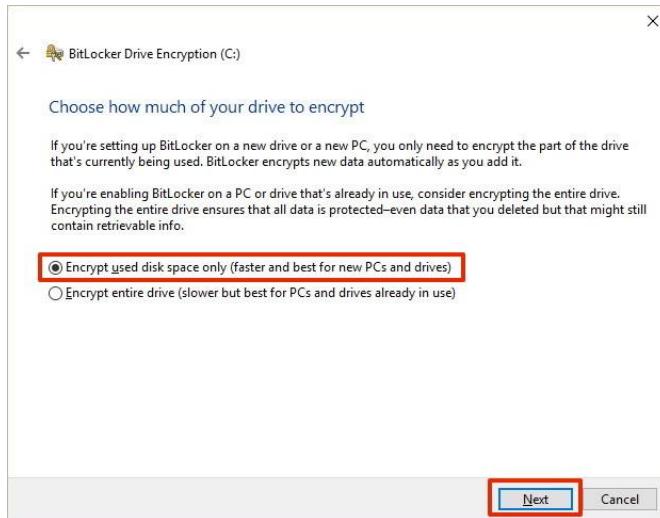
# BitLocker



# BitLocker



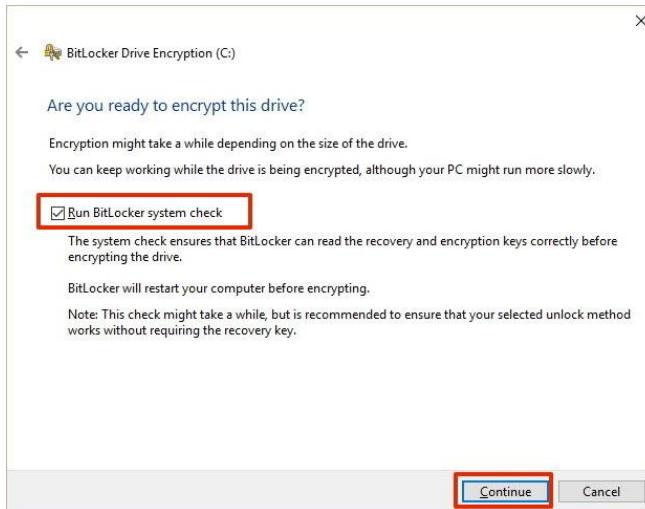
## BitLocker



## BitLocker



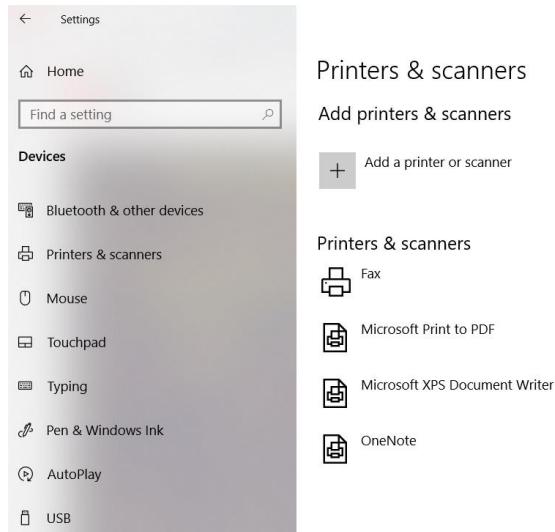
## BitLocker



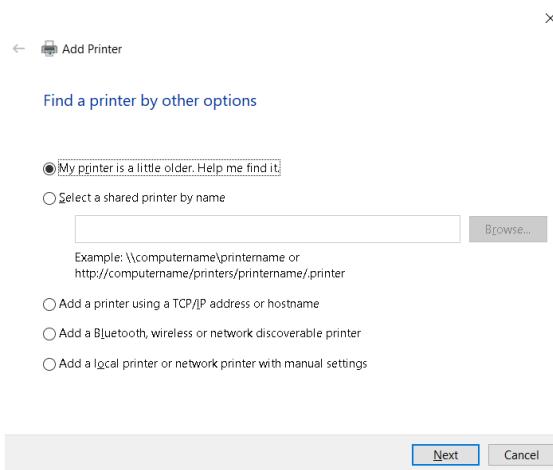
## BitLocker



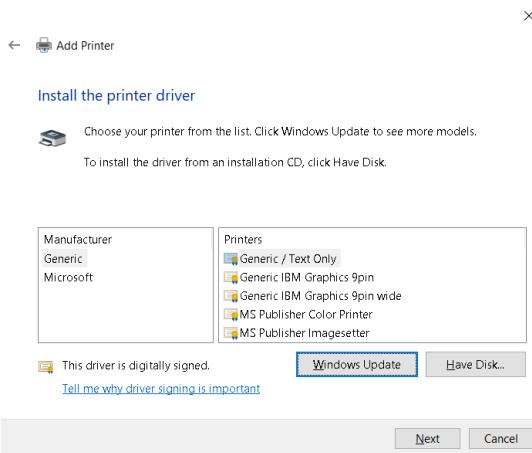
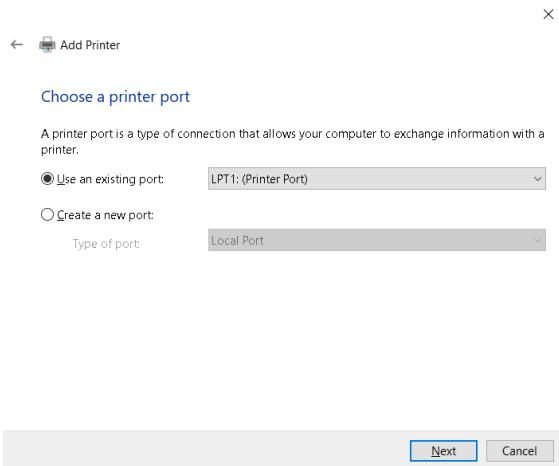
## Printer Management

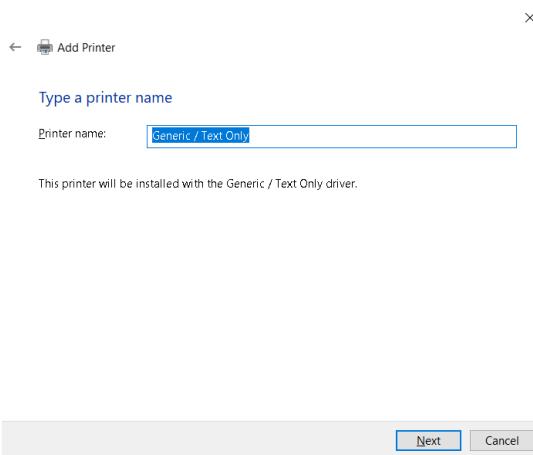
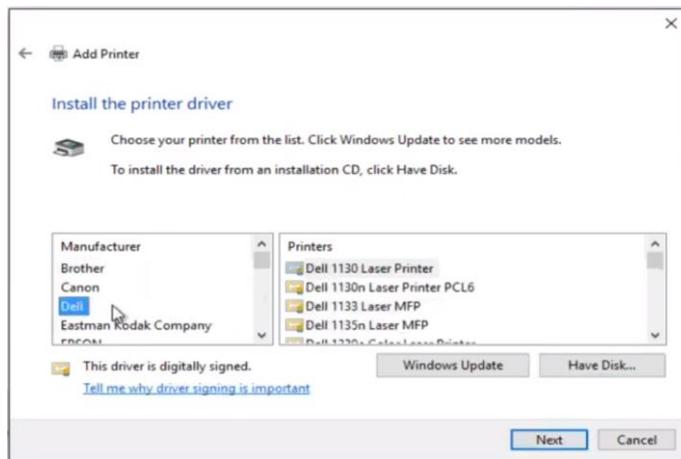


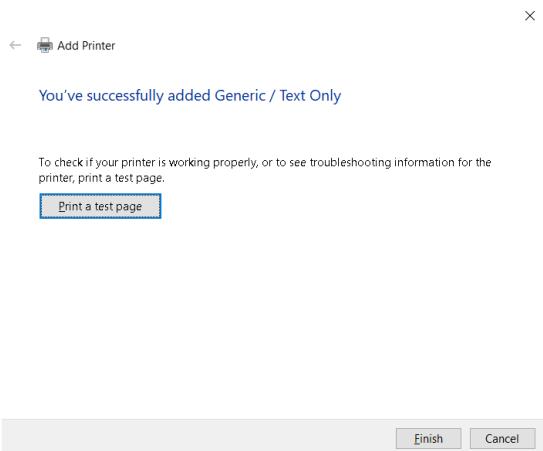
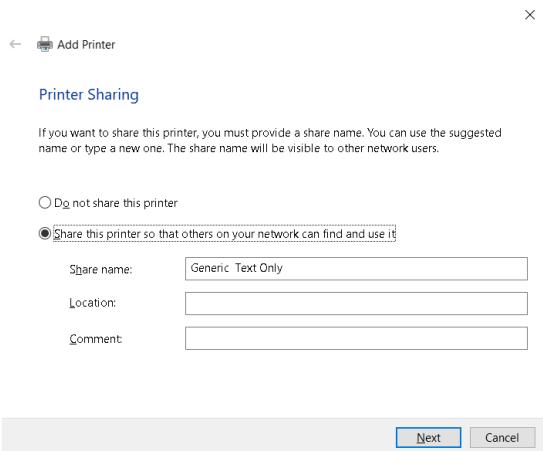
## Printer Management



# Printer Management



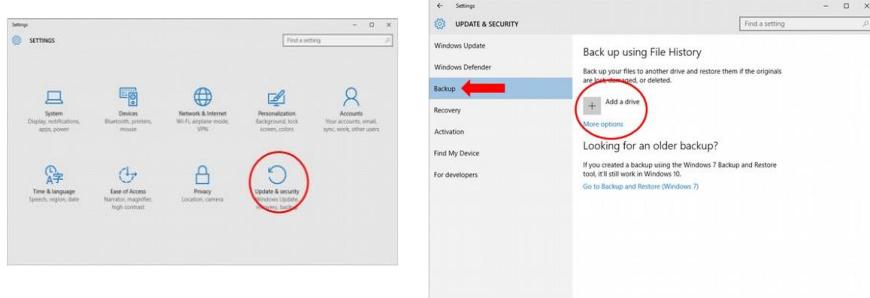




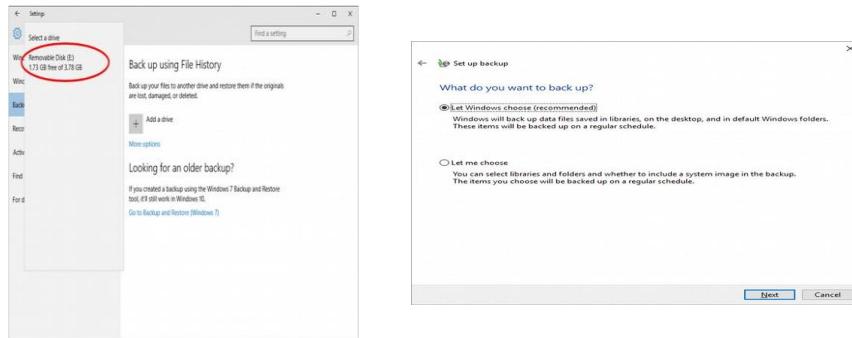
## Troubleshoot startup issues and operating system services on a Windows 10 PC

### Windows 10 - Backup & Recovery

- Windows 10 features several tools to help you perform backups of your documents. Here are some of these tools.

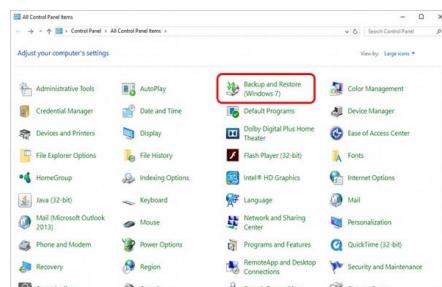


# Windows 10 - Backup & Recovery

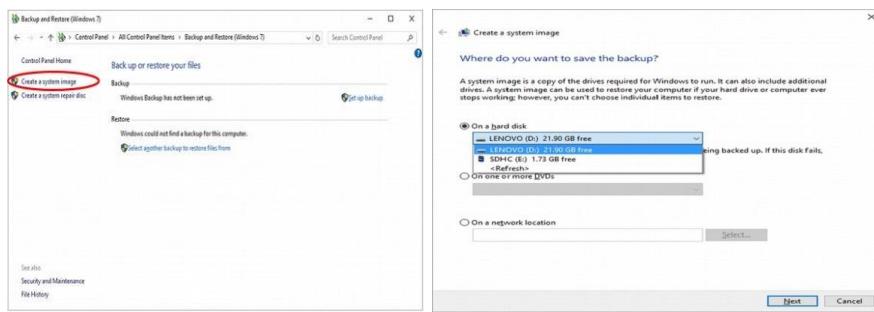


## Creating a System Image

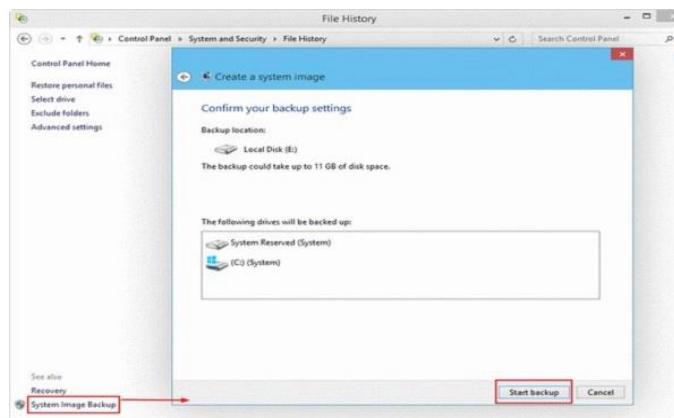
- In case your computer failing, Windows 10 offers you some alternatives to restore it to a specific state. **A system image is a copy of all your system and program files needed for your computer to run properly.**
- You can use this option to store an image of your computer at a specific moment (date & time), and use it to restore your computer to that state later.



# Creating a System Image

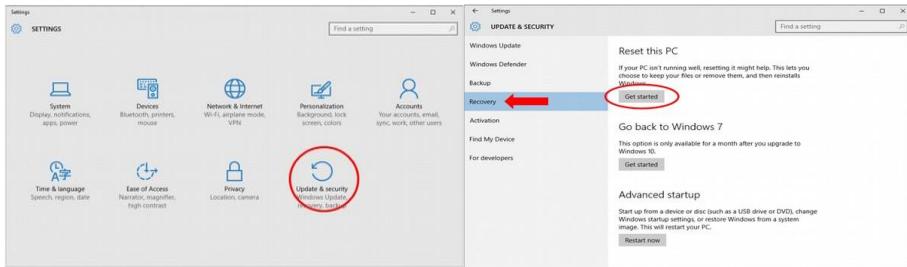


# Creating a System Image



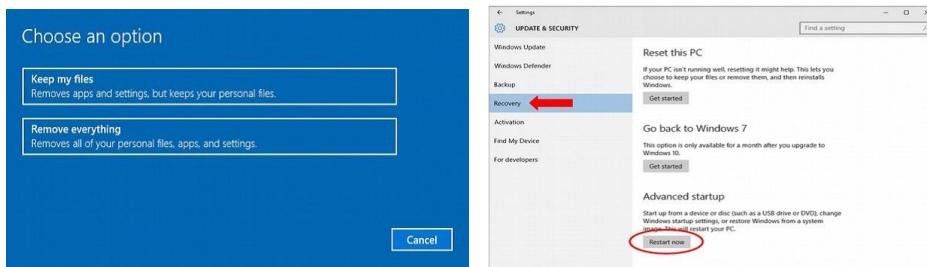
## Resetting the PC

- Another alternative Windows 10 offers you for system recovery is simply called “Reset this PC”. This option will allow you to return your computer to its default factory settings.

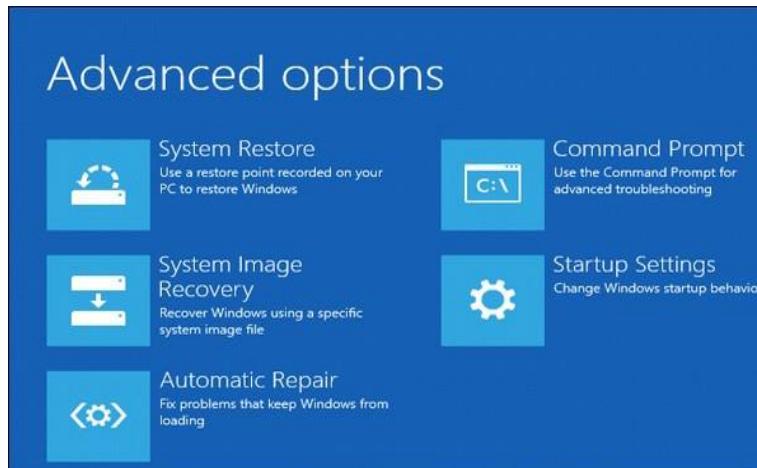


## OS Troubleshoot Options

Windows 10 features several advanced options to restore your PC. Open **Update & Security**



# OS Troubleshoot Options



## Operating system recovery Options

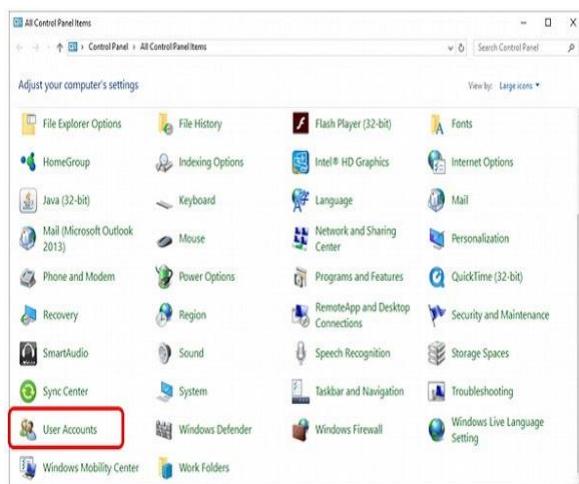
- Shows a list of system recovery tools you can use to repair startup problems, run diagnostics, or restore your system.
- **Safe Mode**
- **Safe Mode with Networking**
- **Safe Mode with Command Prompt**
- **Last Known Good Configuration (advanced).**
- **Directory Services Restore Mode.**
- **Debugging Mode**
- **Start Windows Normally.**

**END**

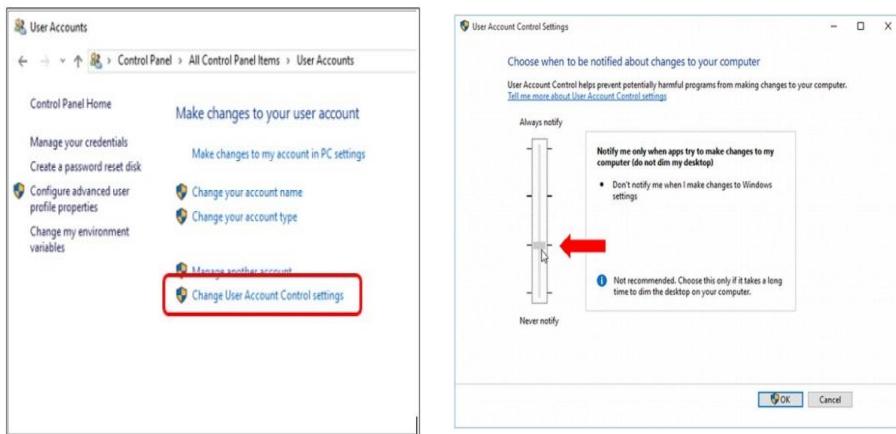
**END**

# Additional Windows 10 concepts

## User Accounts

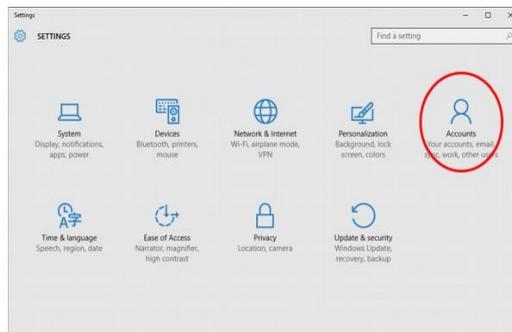


# User Accounts

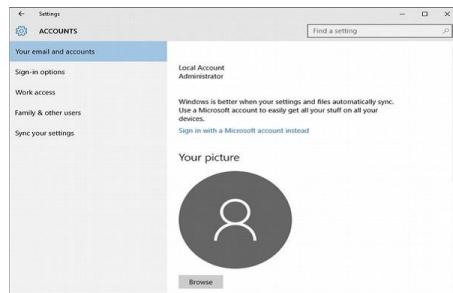


## Windows 10 – Microsoft Account

- Windows 10 allows you to sign in using an Outlook account. By doing this, Windows synchronizes your documents, contacts, and other things to the cloud.



## Windows 10 – Microsoft Account



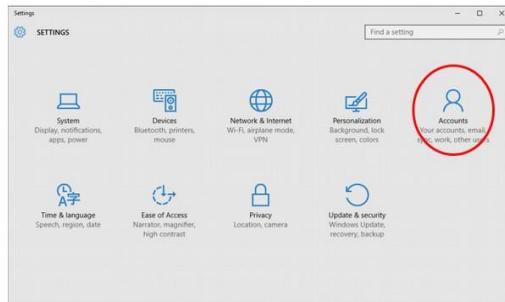
After that, Windows will ask for your username and password. If you don't have a Microsoft or Outlook account, it will also provide a link to create one. Using a Microsoft account will allow you to sync your documents and personal files to any compatible device, where you use that account.

## Windows 10 – Microsoft Account



## Windows 10 - Parental Control

- Windows 10 allows you to set up a child's account for your children. This account will allow you to establish restrictions on how the account is used and monitor what your child does.



## Windows 10 - Parental Control

The image contains four screenshots illustrating the steps to add a child account:

- Screenshot 1:** Shows the 'ACCOUNTS' section in the Windows Settings app. A red box highlights the 'Family & other users' link, and a red circle highlights the '+ Add a family member' button.
- Screenshot 2:** A pop-up window titled 'Add a child or an adult?' with the instruction 'Enter the email address of the person you want to add. If they use Windows, Office, Outlook.com, OneDrive, Skype, or Xbox, enter the email address they use to sign in.' It shows two radio button options: 'Add a child' (selected) and 'Add an adult'. Below is a text input field 'Enter their email address' and a note 'The person I want to add doesn't have an email address'.
- Screenshot 3:** A 'Let's create an account' screen. It says 'Windows, Office, Outlook.com, OneDrive, Skype, Xbox. They're all better and more personal when they sign in with their Microsoft account.' Below are two text input fields: 'Kid' (containing 'Geek') and 'ayounggeek@outlook.com'. A note below says 'ayounggeek @outlook.com is available.' There is also a link 'Use their email address instead'.
- Screenshot 4:** A 'Help us protect your child's info' screen. It says 'Your security info helps protect their account. We'll use this to help them recover their password, help keep hackers out of their account, and get in if they get blocked. We won't use it for spam.' It has a dropdown 'United States (+1)' and a text input field 'Phone number'.

## Windows 10 - Parental Control

**Your family**

You can allow family members to sign in to this PC. Adults can manage family settings online and see recent activity to help kids stay safe.

+ Add a family member

ayounggeek@outlook.com Child

Can sign in

Manage family settings online

**Recent activity**

August 4 through today

Activity reporting Email weekly reports to me

On On

Collected from MATT-DESKTOP

**Web browsing**

Block inappropriate websites  On ←

Applies to: MATT-DESKTOP

Only see websites on the allowed list

If you have younger children, you can make sure they'll only visit sites you've decided are safe.

**Always allow these**

Enter the URL of a website you want to allow:

example.com

**Always block these**

Enter the URL of a website you want to block:

example.com

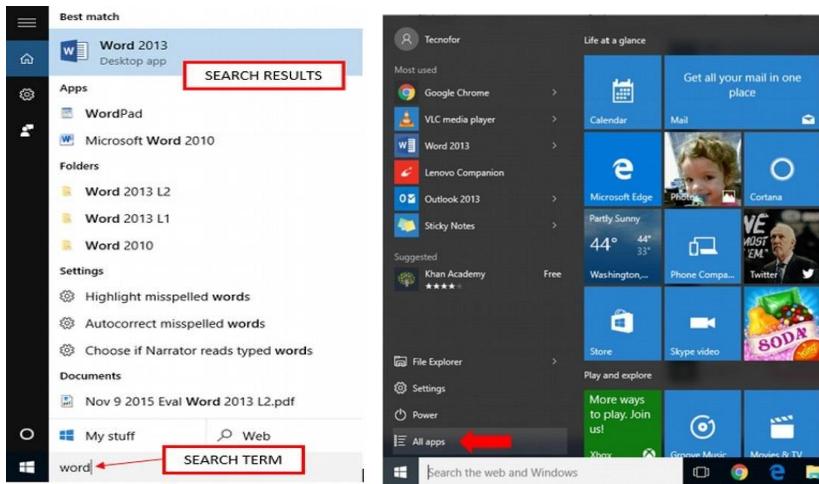
Website	Action	Website	Action
http://google.com/	Remove	http://facebook.com/	Remove
http://howtogeek.com/	Remove	http://instagram.com/	Remove
		http://pinterest.com/	Remove
		http://twitter.com/	Remove
		http://youtube.com/	Remove

## Windows 10 - Parental Control

Choose the times Kid Geek can use devices

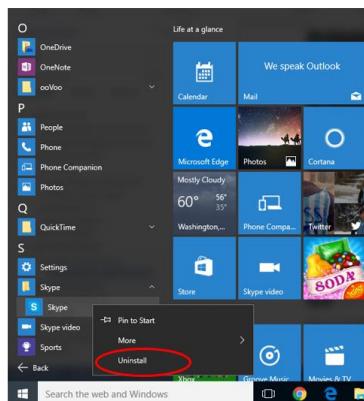
	As early as	No later than	Limit per day, on this device
Sunday	7:00 AM	9:00 PM	4 hrs
Monday	7:00 AM	9:00 PM	2 hrs
Tuesday	7:00 AM	9:00 PM	2 hrs
Wednesday	7:00 AM	9:00 PM	2 hrs
Thursday	7:00 AM	9:00 PM	2 hrs
Friday	7:00 AM	11:00 PM	4 hrs
Saturday	7:00 AM	11:00 PM	4 hrs

## Windows 10 - Applications

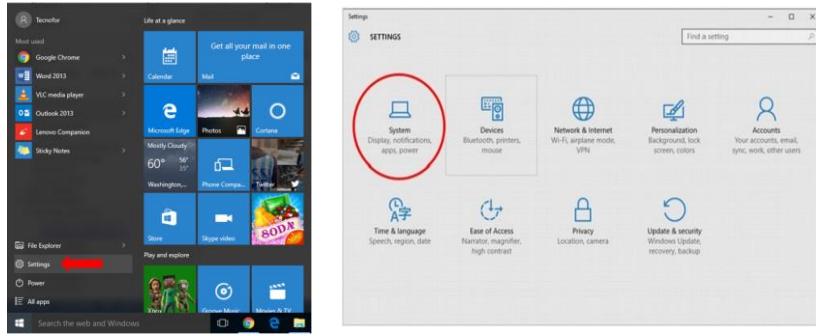


## Uninstalling an App

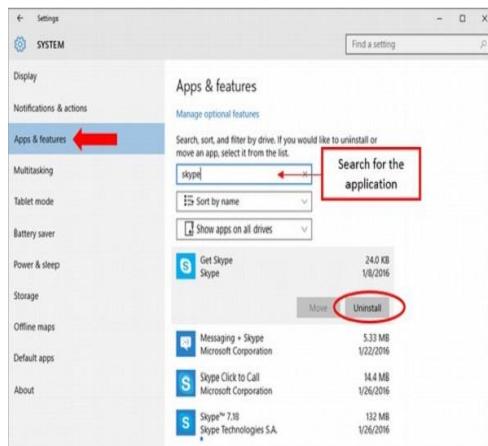
- Uninstalling an Application from the Start Menu - Perhaps the easiest way to uninstall an application is from the Start Menu.



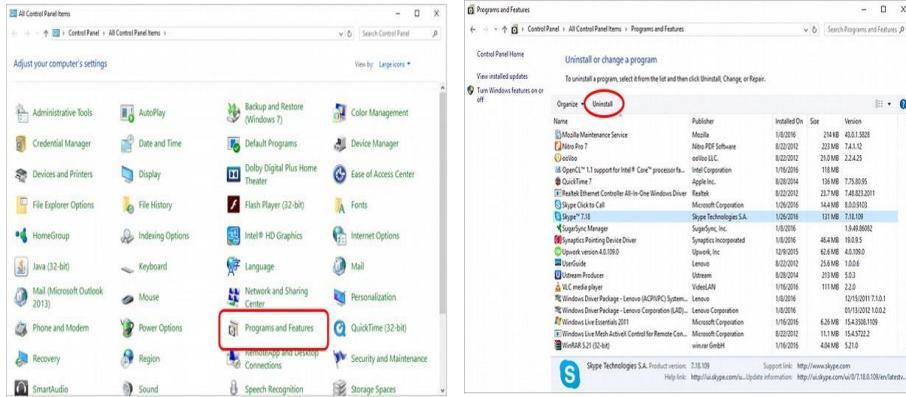
## Uninstalling an App using Settings



## Uninstalling an App using Settings

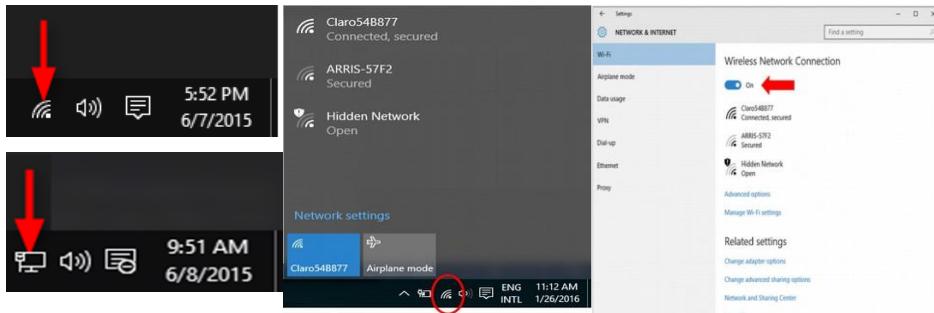


## Uninstalling an App using Settings

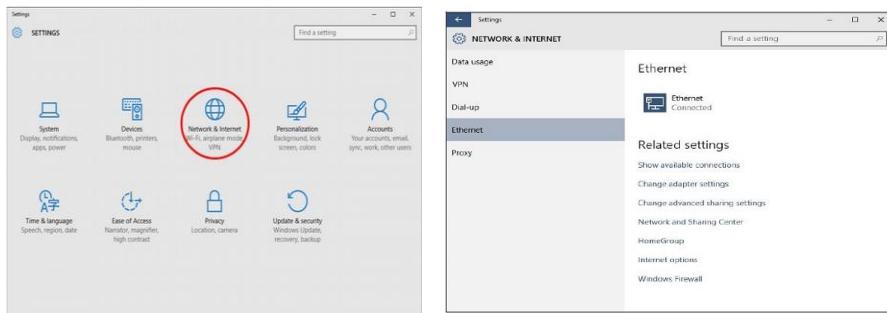


## Windows 10 - Networking

- Like previous Windows version, Windows 10 will let you know the status of your network connection in the Notification Area.



# Windows 10 - Networking



## Windows 10 - Virtualization

- One of the features that Windows 10 has included is the capacity of creating virtual machines. A virtual machine is the software emulation of a computer system.
- They are created within a real or physical computer, allowing you to create multiple separate “computers” that can run different operating systems and programs.
- These virtual machines are handled using a special software called a **Hypervisor**. In this case, Microsoft’s own Hyper-V.

## Windows 10 Virtualization

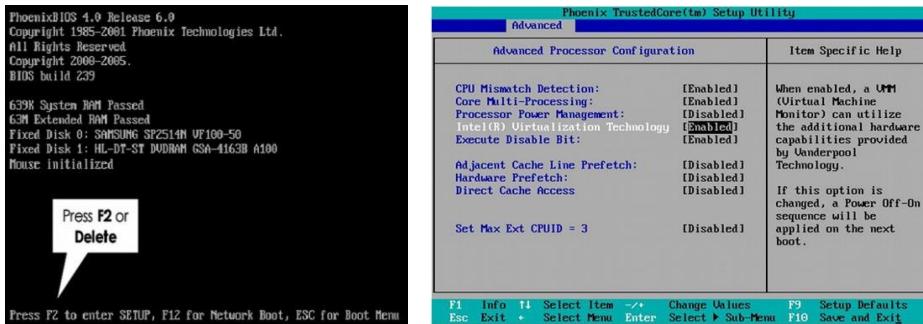
- Due to the advanced nature of virtualization, not all computers can run virtual machines. In the past, **this feature was reserved for servers**. But with operating systems like Windows 10, users can create their own virtual machines too.
- Pre-requisites in Windows 10
  - ❖ A 64-bit edition of Windows 10 Pro or Windows Enterprise. Hyper-V isn't available for Windows 10 Home edition.

## Windows 10 Virtualization

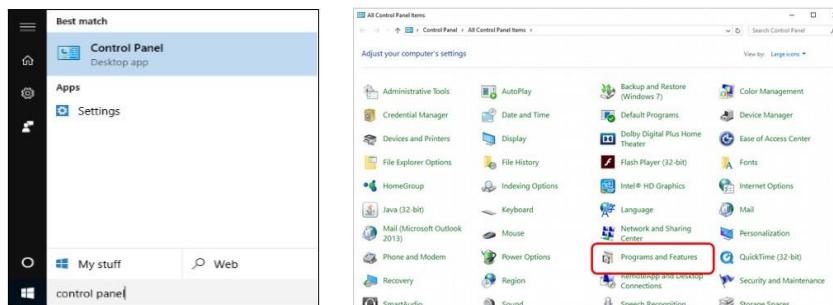
- ❖ Your computer processor needs to support virtualization, or more specifically SLAT (Secondary Level Address Translation).
- ❖ Virtualization has to be enabled in your computer's BIOS. This is a small program that handles the boot-up of your computer making sure everything is in the right place.

## Enabling Virtualization in the BIOS

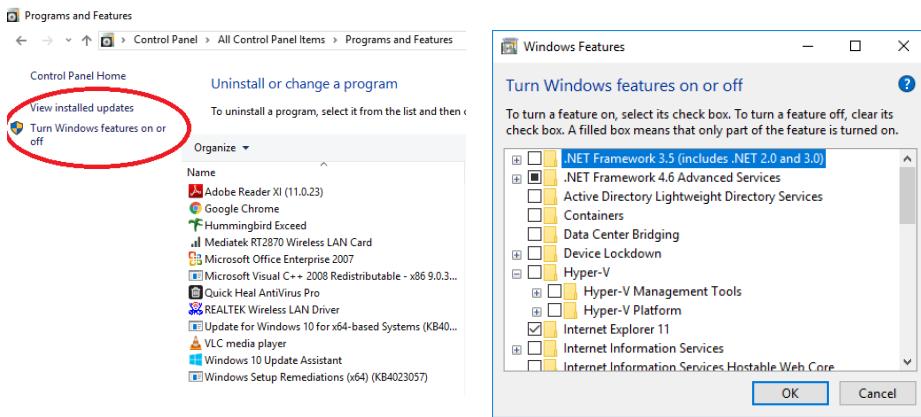
- The BIOS is a small program that runs whenever you turn on your computer. Its basic function is to help the computer boot up by making sure everything is working properly.



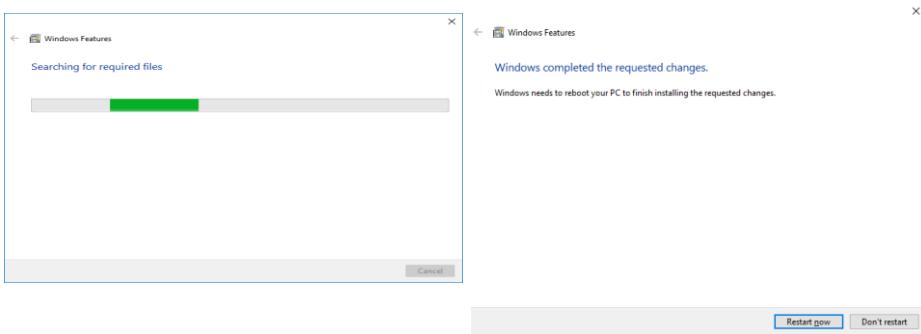
## Setting Up Hyper-V



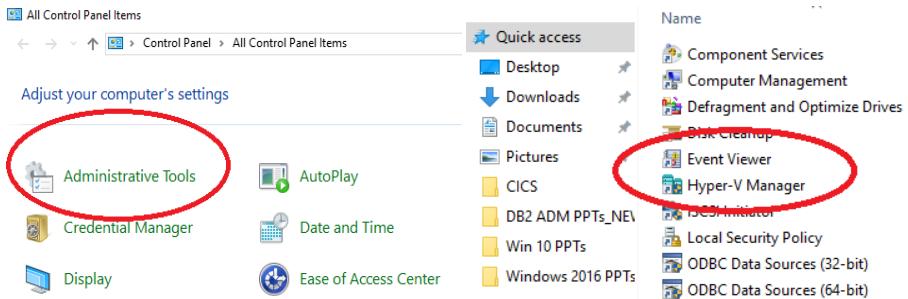
# Setting Up Hyper-V



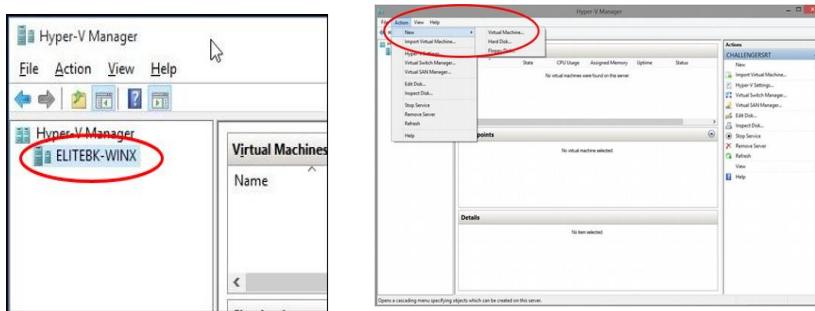
# Setting Up Hyper-V



## Setting Up Hyper-V

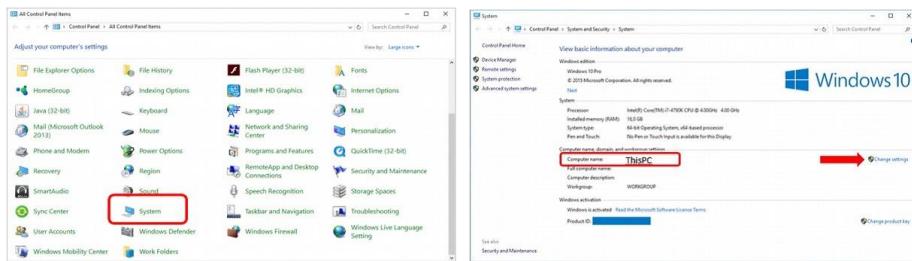


## Setting Up Hyper-V

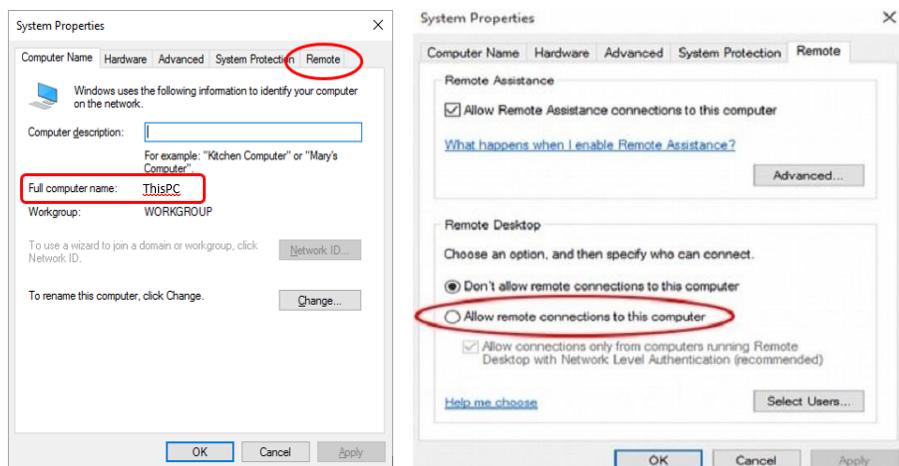


## Windows 10 - Remote Access

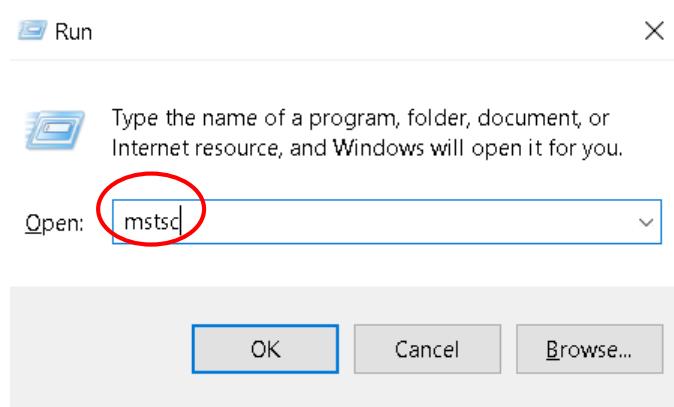
- Remote Desktop is a feature that allows you to access another computer on a remote location from your computer.



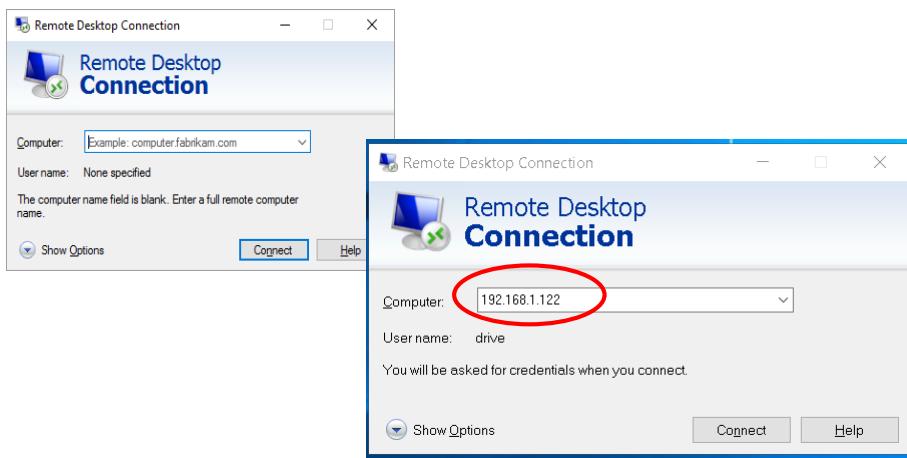
## Windows 10 - Remote Access



## Windows 10 - Remote Access



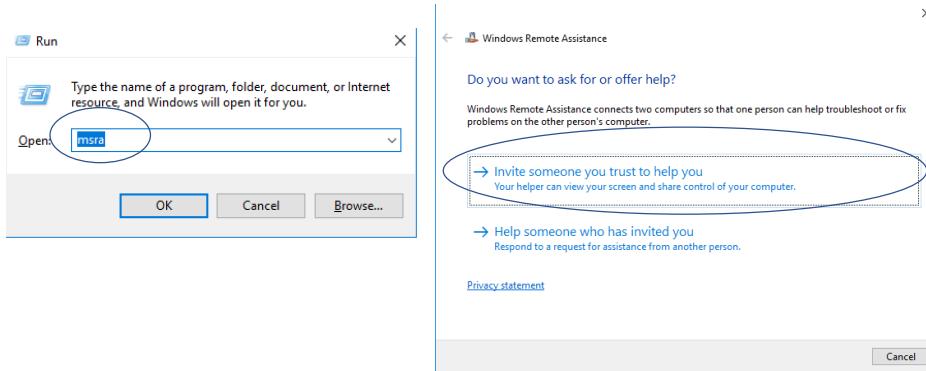
## Windows 10 - Remote Access



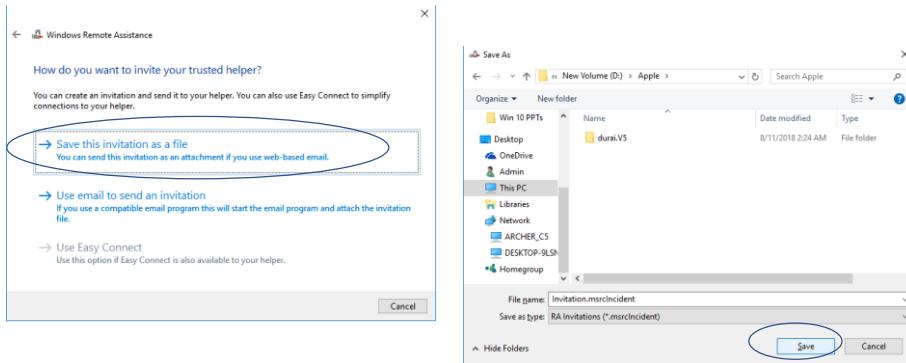
## Remote Assistance

- Getting technical assistance from expert over network from a remote computer
- Main difference between remote desktop connection and remote assistance is ; taking full administrative control over the remote system is remote desktop connection;
- remote assistance is getting technical guidance from a expert from a remote location over network.

## Remote Assistance



# Remote Assistance



# Remote Assistance

A window will open with a password. Keep this window open, otherwise the session will end.



**On Expert System open the invitation then type the password**



## Windows 10 - Keyboard Shortcuts

SHORTCUT	ACTION
Windows key	Open the Start menu
Windows key + S 	Open the Windows Search
Windows key + C	Open Cortana
Windows key + Tab	Open Task View
Windows key + D	Show or Hide the Desktop
Windows key + L	Lock your account
Windows key + A	Open the Action Center sidebar
Windows key + I	Open the Settings window
Windows key + E	Open the File Explorer window
Windows key + PrintScreen	Takes a screenshot of your whole display and stores it in Pictures > Screenshots

## Some More Shortcuts

ncpa.cpl -- NIC  
 control panel – control panel  
 win + E – My Computer  
 win + R – To open RUN  
 win + D – Desktop  
 sysdm.cpl – My computer Properties  
 mstsc -- Remote Desktop Connection  
 msra – Remote Assistance  
 taskmgr – opens Task Manager (or ctrl+shift+esc)  
 control admin tools -- to open administrative tools

perfmon.exe – to open performance monitoring  
compmgmt.msc – computer management  
services.msc – to open services  
dfrgui.exe – to open disk defragmentation  
gpedit.exe – group policy  
secpol.msc – local security policy  
cleanmgr.exe -- to run disk clean up  
appwiz.cpl – programs and features  
devmgmt.msc – device management

## Boot Process

- PWRON – BIOS – POST-MBR-NTLDR-NTBOOTDD.SYS(SCSI Disk)-  
BOOT.INI(Prompt to select OS)- NTDETECT.COM(Initialization of  
hardware)-NTOSKRNL.EXE(Kernel of OS)-HAL.DLL(Hardware Abstraction  
Layer)Communicate with Hardware)-HKEY\_LOCAL\_MACHINE(REGISTRY)-  
WINLOGON.EXE- LSASS.EXE(User authentication) - EXPLORER.EXE –
- Local Security Authority Subsystem Service (**LSASS**) is a process in  
Microsoft Windows operating systems that is responsible for enforcing  
the security policy on the system.
- It verifies users logging on to a Windows computer or server, handles  
password changes, and creates access tokens.

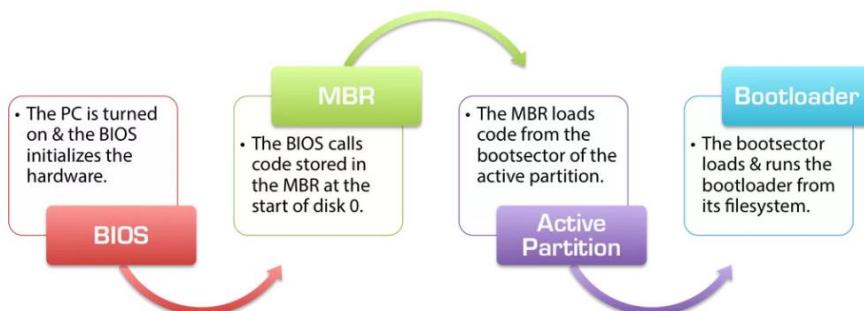
# Boot Process

- BIOS-MBR-BOOTMGR-BCD(Boot Configuration Data)-Winload.exe-NTOSKRNL.EXE-Winlogon.exe-LSASS.EXE(User authentication)-
- Local Security Authority Subsystem Service (**LSASS**) is a process in Microsoft Windows operating systems that is responsible for enforcing the security policy on the system.
- It verifies users logging on to a Windows computer or server, handles password changes, and creates access tokens.

# Boot Process

## Overview of the BIOS/MBR Boot Process

In the diagram below, the boot sequence for all standard computers and operating systems is shown:



# Boot Process

## The Master Boot Record (MBR)

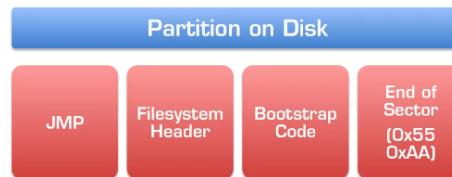
The MBR is the first and most important component on the software side of things in the boot procedure on BIOS-based machines. Every hard disk has an MBR, and it contains several important pieces of information.



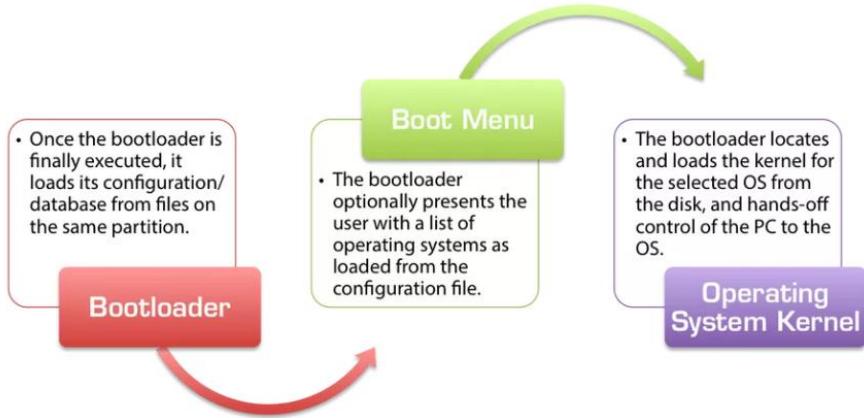
# Boot Process

## The Partition Boot Sector

As covered above, the bootstrap code in the MBR will usually load a sequence of bytes from the start of the active partition. The exact layout of a partition depends what filesystem the partition has been created or formatted with, but generally looks something like this:



## Boot Process



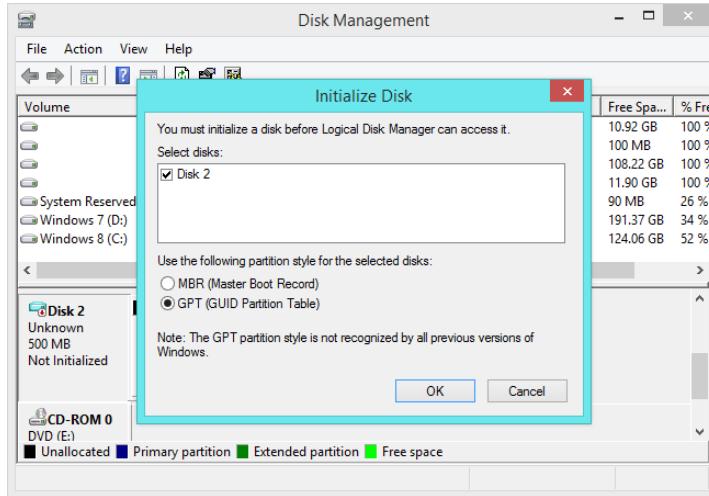
## Boot Process

### Popular Bootloaders

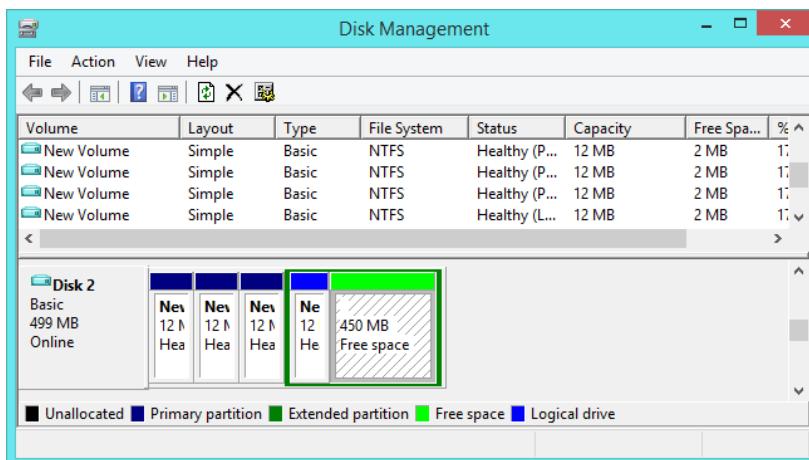
As discussed previously, there are many different bootloaders out there. Each operating system has its own bootloader, specifically designed to read its filesystem and locate the kernel that needs to be loaded for the OS to run. Here are some of the more-popular bootloaders – and their essential configuration files – for some of the common operating systems:

NTLDR	BOOTMGR	GRUB(2)
<ul style="list-style-type: none"> <li>NTLDR is the default bootloader for Windows NT, 2000, and XP.</li> <li>BOOT.INI on the active partition contains the list of operating systems and their locations.</li> <li>NTDETECT.COM is a helper program that runs to detect hardware and identify devices.</li> </ul>	<ul style="list-style-type: none"> <li>BOOTMGR is the new Windows and is used on Windows Vista, 7, 8, and 10.</li> <li>The list of operating systems is now read from the BCD file in the BOOT directory on the active partition.</li> <li>BOOTMGR is self-contained, and does not need any helper programs or routines.</li> </ul>	<ul style="list-style-type: none"> <li>GRUB is the most-popular bootloader for Linux, though it can boot numerous other OSes as well.</li> <li>Its boot settings are stored in a file usually called grub.cfg (GRUB2) or menu.lst (GRUB).</li> <li>GRUB is a modular bootloader, that can load additional modules from disk.</li> </ul>

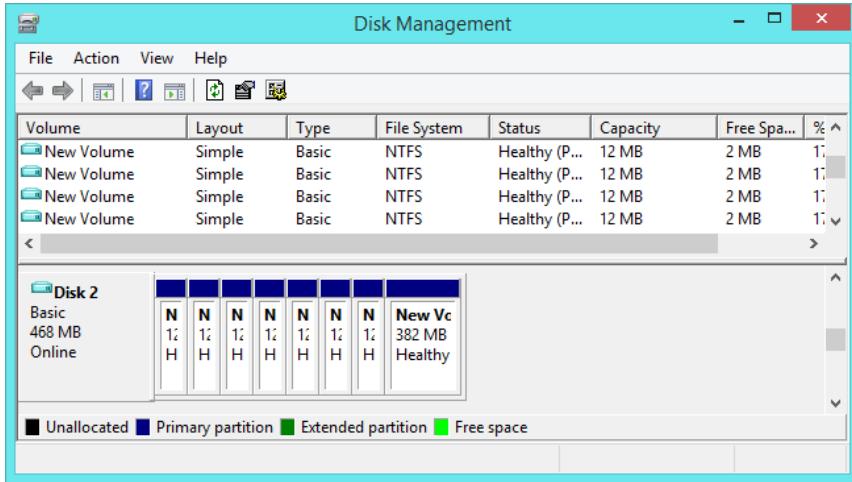
## Disk Management



## Disk Management



# Disk Management



## Win 10 Editions

- Windows 10 Home, Windows 10 Pro, Windows 10 Enterprise, Windows 10 Mobile, Windows 10 Education, Windows 10 Mobile Enterprise