



An Office Watch Guide

## Windows 10 Anniversary (2<sup>nd</sup>) Edition – 2016

by **Peter Deegan** – co-founder and Editor-in-Chief of *Office Watch* and other newsletters plus books such as [\*Office 2016: the real startup guide\*](#), [\*Office 2013: the real startup guide\*](#), [\*Privacy and Security in Microsoft Office\*](#), [\*Organizing Outlook Email\*](#) and [\*Eye-catching Signs with Word\*](#).

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# INTRODUCTION

Microsoft Office, Word, Outlook, Excel and PowerPoint are where most of us spend our computer time. So this book focuses on the parts of Windows 10 most relevant to daily use of Microsoft Office.

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*'Windows 10' as at the 2016 'Anniversary' major update.*

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Not just new Windows 10 features but also parts of Windows that Office users work with every day like [Explorer](#), [Libraries](#) and [Search](#).

Even before you get Windows 10 this book can help you, our chapter on [Getting Windows 10](#) has money saving tips and hardware advice.

The upgrade process isn't as simple as Microsoft would like to make out. We'll tell you what you should do [before switching](#) to Windows 10 and what should be done [after you have Windows 10](#).

A special chapter on the [2016 Anniversary update](#) including how to prepare for the change and reduce the risk of upgrade problems.

There's an entire chapter of [suggested changes](#) to Microsoft's default settings. [Little tweaks](#) that make Windows suit you, not what Microsoft thinks.

With so much personal information online, it's important to [make your Microsoft account secure](#). We'll show you how to do that properly and safely.

We'll show you the new and changed Windows 10 features 'step by step'. To save you time, we'll tell you when the procedure hasn't changed much (or at all) from Windows 7 or 8.

The [Start Menu](#) has changed (again) after the disastrous Windows 8 full screen monster. We'll show you how to make the most of the new menu, how to 'fix' it to show what you want and how to replace it with a more familiar Start Menu.

[Fast access to programs, apps or documents](#) – all the different options for accessing your most commonly used parts of Windows.

A lot of the power in Windows is hidden in corner tricks and shortcuts not visible on the screen. In [Around the Screen](#) we'll show you all the neat stuff that Microsoft has hidden from view.

# Windows 10 for Microsoft Office users

## Introduction - Ever Changing

Think you know **Explorer**? There are plenty of tricks and shortcuts in Explorer and the Office file dialogs that we'll cover in detail that's often overlooked.

**Search** within Windows 10 is more accessible than in the past. We show you how to quickly find the documents, pictures, videos and more from the thousands on your computer or network. But the new 'Smart Search' is a privacy trap so we'll explain why and how to stop it.

**Libraries** aren't new in Windows 10, in fact Microsoft has tried to hide them away! We'll show how to put libraries back in Explorer and use it to full potential in a separate chapter.

Windows can be setup to work for **multiple users** so we've included a chapter on how to setup and work with more than one Windows account.

**Wifi** – we all use wireless networking but there's a lot more you can do beyond just connecting to the Internet. We have a special chapter on Wifi basics plus some handy tricks, especially for travelling users. Also a close look at **Metered Connections** (which is essential but Microsoft tries to hide) and **Mobile Hotspot** aka tethering (both in Windows and alternatives).

Grabbing images or videos off your screen is essential for anyone wanting good, quick tech support. You can show people exactly what you're seeing on the screen. The **Screen Shots** chapter covers this for Windows and other devices.

Windows has improved the support for **more than one monitor** – we show you the options for desktop machines and screens added to laptop computers. **Wireless screen connection** is a clever way to wirelessly extend to a second monitor and speakers.

**Remote Desktop** is a way to control one computer from another machine. The two computers can be next to each other or around the globe. This book shows how to setup and use RDC as well as consider alternatives which might suit you better.

If you're at all worried about your privacy and data security then you need to know about **Virtual Private Networking**. There's a VPN option in Windows but also a better system, OpenVPN, that most experts recommend. So we'll look at both in detail.

**File History** is a backup and versioning system in Windows. It's a great way for Office users to backup their files and recover previous versions of a document. **System Image Backup** is still in Windows, though it's buried away so we'll show you where it's hiding.

## Windows 10 for Microsoft Office users

### Introduction - Ever Changing

[Storage Spaces](#) is a clever new way to manage hard drive space with more reliability and flexibility. We'll take you through Storage Spaces in detail with advice on the hardware best suited to the new feature. There's an important and very useful addition to Storage Spaces in Windows 10 that gives it extra flexibility.

[BitLocker](#) is a high quality disk encryption system that protects your computer and documents from theft. It's important for anyone with sensitive or private documents or a portable computer so we've devoted a long chapter to BitLocker.

[Virtual Hard Drives](#) are a powerful tool for Windows and Office users. It gives you secure, portable, storage for documents and files. It also lets you work around a notable limitation in Storage Spaces.

[Encrypting File System](#) lets you protect selected files and folders from intrusion. It's not new in Windows but important for Office users so we've covered this feature.

[Hyper-V](#) is Microsoft's way to run a 'computer within a computer'. It sounds scary and complicated but we'll show you step-by-step.

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*Hyper-V is the best way to run multiple versions of Office and avoid the conflicts when installing Office 'side-by-side' on the one computer.*

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We'll show you how to setup a Hyper-V machine with both Windows and Office installed.

It's best to prepare for the worst, so check out our section on preparation for [Repair and Recovery](#).

Occasionally in this book or other places, you'll be told to edit the [Windows Registry](#) or [Group Policy](#) to change a setting not usually available. We've added a chapter with step-by-step instructions on how to do that. [Task Manager](#) has some features that are handy in unusual situations.

Windows 10 is an attempt to make the operating system more acceptable to the majority of customers. Also make it a hybrid tablet and computer operating system.

## EVER CHANGING

Windows 10 isn't a single 'fixed' operating system like in the past. It's now a 'service' which can be updated by Microsoft via (hopefully) seamless updates.

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*The 'Windows 10' released in July 2015 changed in many ways in the months since.*

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This ebook includes the many changes to Windows 10:

- November 2015 update
- August 2016 'Anniversary' update

This means for us, as authors, is that there may be differences between what we've used in writing this book and what you see. Microsoft may have slipped in changes quickly and quietly.

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*With the ebook format and Office-Watch.com's policy of free updates we'll keep this book [updated](#) about changes in Windows 10.*

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That problem is made worse by Microsoft poor documentation and public disclosure. You might think that each Windows update comes with a full list of what's new and changed – but that's a fantasy. In practice, Microsoft dribbles out mentions of changes, often without much detail. It's left to members of the public to poke around Windows and discover changes for themselves.

Any software has limitations and Windows 10 is no different. We try to mention any important restrictions on Windows 10 features so you don't get an unhappy surprise, or worse, find out Windows 10 isn't doing exactly what you expected it to.

The entire ebook includes many **step-by-step instructions** with color screen images to help you make use of Windows 10 power.

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*We don't just tell you what to do, but also the reasons for those choices so you can decide for yourself.*

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## Windows 10 for Microsoft Office users Introduction - Ebook power

We always like to hear your comments and suggestions. An email to [ebookfeedback@office-watch.com](mailto:ebookfeedback@office-watch.com) will reach the Office Watch team.

### EBOOK POWER

Like the *[Office 2016: the real startup guide](#)*, *[Office 2013: the real startup guide](#)*, *[Privacy and Security in Microsoft Office](#)*, *[Organizing Outlook Email](#)* and *[Eye-catching Signs with Word](#)* **Windows 10 for Microsoft Office users** takes advantage of the flexibility in e-books.

With an electronic book you have options that you don't have with dead tree (paper) publications.

With Adobe Acrobat e-books you can navigate using the bookmarks pane on the left to jump around the e-book, and so it's a more convenient and faster version of the traditional table of contents (but we've still included a TOC)

**Searching.** Use the Find or Search commands (under the Edit menu) in the Acrobat Reader to quickly locate what you need.

**Bookmarks.** Choose View | Navigation Tabs | Bookmarks to see a tree view of the headings in the handbook. Click on any heading to jump to that section. This is similar to the Document Map feature in Microsoft Word.

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**Color.** To put full color images in a paper book greatly increases the cost but we can include them in our ebooks without increasing the price you pay. Full color images are especially useful in demonstrating some software features.

**Printing.** We let you print out all or part of ebook for your own use (many ebook publishers do not). Instructions are below.

# Windows 10 for Microsoft Office users

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# ANNIVERSARY UPDATE 2016

## BEFORE GETTING UPDATE

From early August 2016 existing Windows 10 users are be able to get a major revision; the 'Anniversary' update.

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*The real release date is flexible. Officially it 'went public' on 2 August 2016 but in practice it was a gradual release with days and weeks passing before everyone can get the Anniversary Update.*

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According to Microsoft you can install the Anniversary Update (or any major Windows 10 update) easily and seamlessly.

Sadly, that isn't be the case for some people. Some unlucky people will have troubles during the update. At worst they may lose files, documents, data and settings, to say nothing of wasting a lot of time.

Here's some suggestions to reduce the risk and have some recovery options.

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*It's advice which applies to any major Windows update, not just the 2016 Anniversary update.*

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## DEFER

Update Windows 10 when you and your computer are ready, not when Microsoft tells you to.

## Windows 10 for Microsoft Office users

Anniversary Update 2016 - Before getting Update

If you don't want the Anniversary Update right away, choose 'Defer Feature updates'. This is available on Windows 10 Pro, Enterprise and Education but not Home.

⚙️ Advanced options

Choose how updates are installed

Give me updates for other Microsoft products when I update Windows.

Defer feature updates  
[Learn more](#)

### Why Defer?

**Caution** – let other people be the guinea pigs for the latest changes from Microsoft.

**More Caution** – if you're in the middle of an important job or travelling, or about to, you might prefer to stop major updates for a less critical time.

**Bandwidth** – if you're somewhere with limited or erratic Internet access, you might not want to use the little internet available for something that can wait. [Metered Connections](#) serve the same and wider purpose.

### BACKUP

This is a good opportunity to check that your [File History](#) backups are intact.

Also do a full [System Image Backup](#).

Our [Office Backup Handbook](#) has a lot more detail on full backups and backups for Outlook.

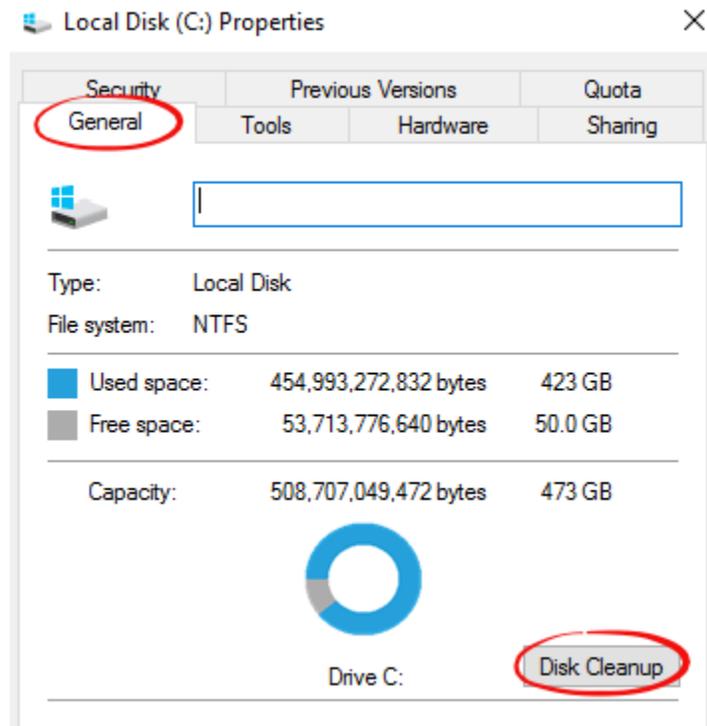
### CLEAN UP DRIVES

Make sure there's enough free space available on each internal drive. How much? At least 10% free space is a good yardstick. Empty the Recycle Bin and delete or move off old or unnecessary files.

## Windows 10 for Microsoft Office users

Anniversary Update 2016 - Before getting Update

Let Windows clean up the main drives. In Explorer, right-click the drive and choose Properties | General then Disk Cleanup.

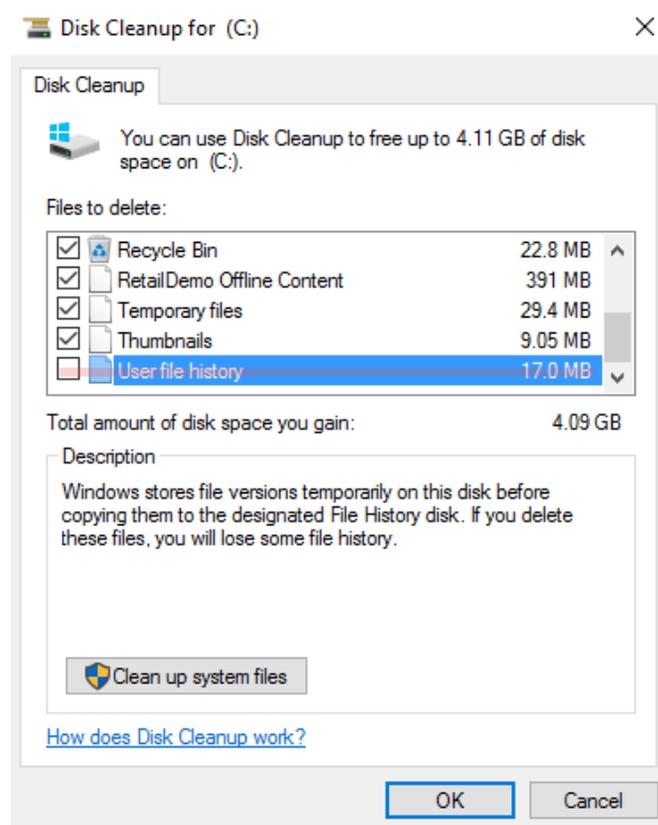


Choose all the items you want to remove from the drive. Most can be removed, read the explanation if you're not sure.

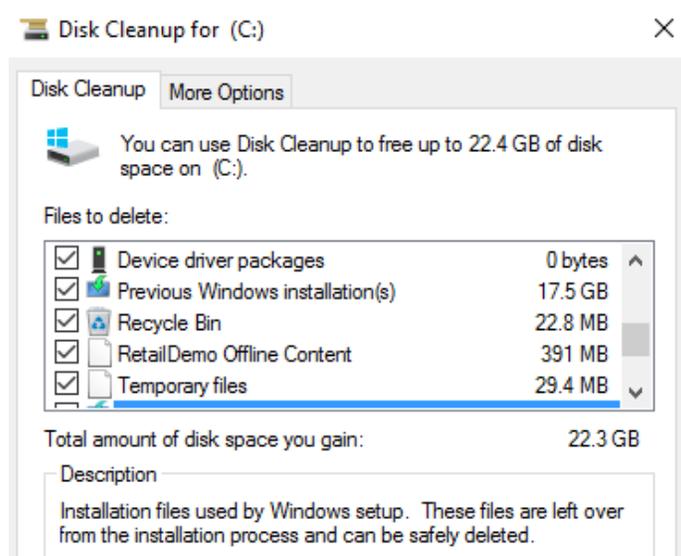
## Windows 10 for Microsoft Office users

Anniversary Update 2016 - Before getting Update

Do NOT choose the 'User file history' option because it will delete backup files that haven't yet been copied to the external drive.



If you want to go another step, choose 'Clean up system files' to see more cleanup options.



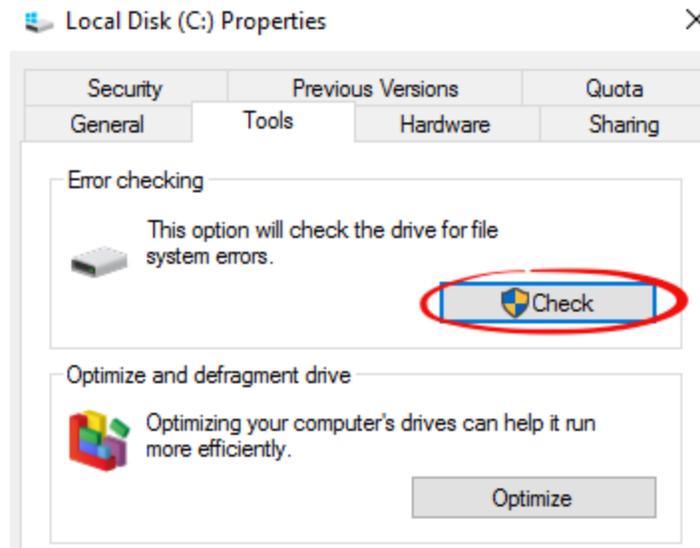
# Windows 10 for Microsoft Office users

Anniversary Update 2016 - Before getting Update

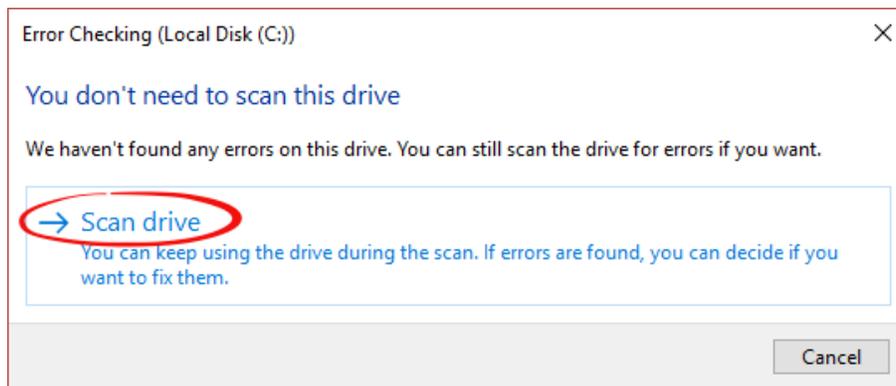
## CHECK DRIVES

The main computer drives, especially Drive C, should be free of errors or problems before the update is applied.

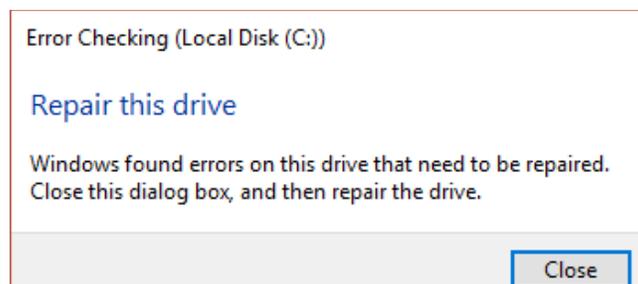
For each internal drive, right-click in Explorer, choose Properties | Tools | Error checking then Check.



Even if Windows says you don't need to, choose Scan drive.



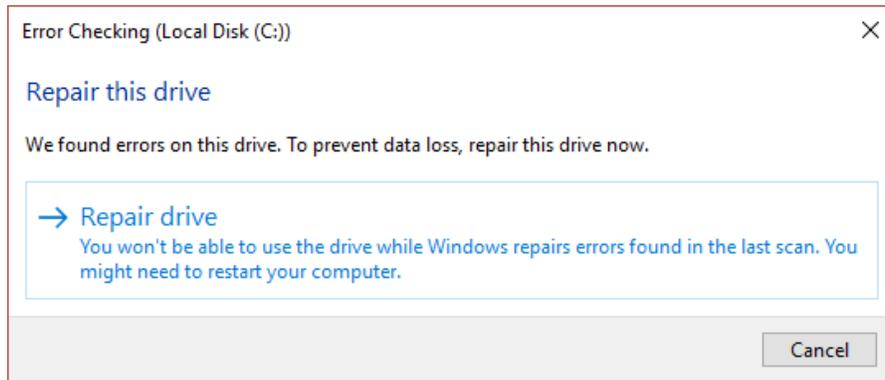
In our experience, even when Windows says a drive scan isn't needed, the full check reveals some errors:



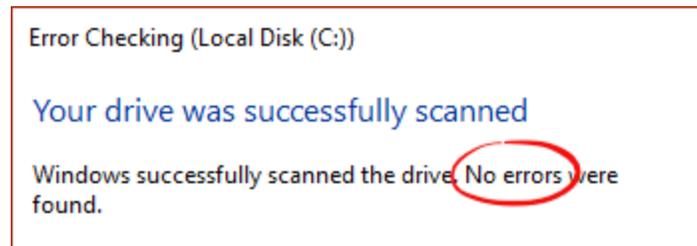
# Windows 10 for Microsoft Office users

Anniversary Update 2016 - Before getting Update

A computer restart is often needed to complete repairs. Shut down all programs yourself before choosing 'Repair drive'.



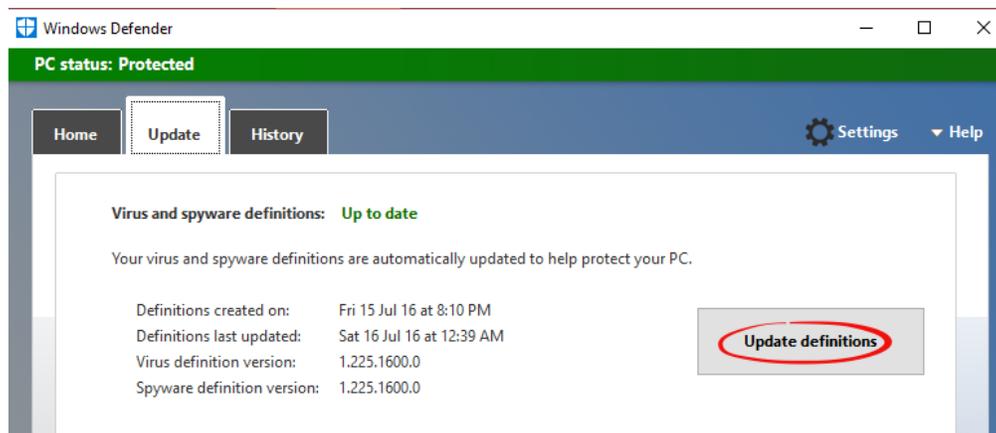
After a restart, check the drive again. A badly flawed drive might need multiple scans to find and fix all problems. Eventually you should see the 'no errors' message.



## VIRUS SCAN

Any major update needs to start from the 'clean' system, meaning no viruses or other nasties.

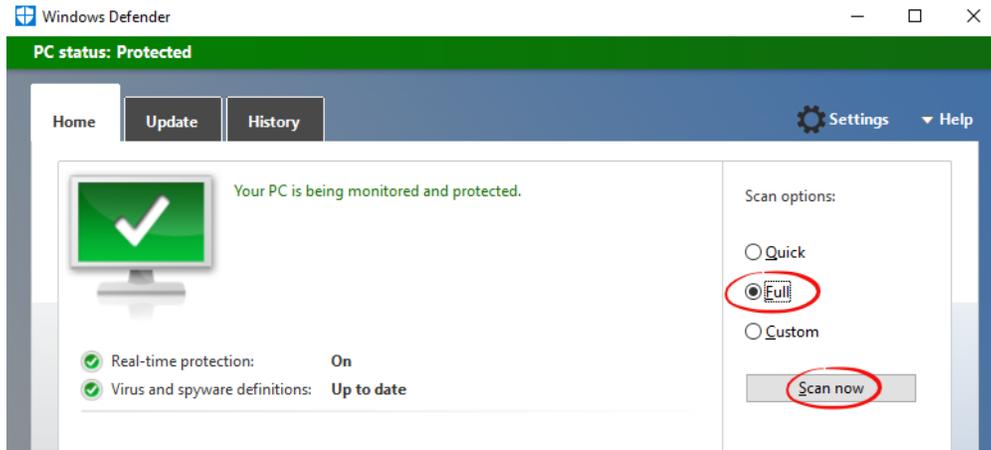
Open Windows Defender and do a Full scan of your computer. First download the very latest virus information from the Update tab and choose Update definitions.



# Windows 10 for Microsoft Office users

Anniversary Update 2016 - Before getting Update

Once that's done, switch to the Home tab, choose Full then Scan Now.



The scan will happen in the background while you get on with other work.

## SIGN IN

One of the annoyances for anyone on the Windows Insider program is the delay when first logging in after an update. After each update, Insiders had to login then wait staring as screens saying 'Hi' and reassuring you that all your documents are still on the computer.

There was a collective cheer when this option was added to Settings | Update and Security | Windows Update | Advanced Options:

### Advanced options

#### Choose how updates are installed

Give me updates for other Microsoft products when I update Windows.

Defer feature updates

[Learn more](#)

Use my sign in info to automatically finish setting up my device after an update.

[Learn more](#)

[Privacy statement](#)

#### Choose how updates are delivered

Note: Windows Update might update itself automatically first when checking for other updates.

[Privacy settings](#)

## Windows 10 for Microsoft Office users

Anniversary Update 2016 - When you're ready to update

**'Use my sign in info to automatically finish setting up my device after an update'** means that after an update, Windows will start and do a form of auto-login so the final update tasks are done quickly and without human intervention.

### COLLECT SETTINGS

If the worst happens, you may lose all the settings as well as data on your computer. So make sure you have a copy of all necessary details such as:

- Wifi passwords. Windows is very likely to 'forget' all wifi passwords after an update.
- Program setting, registration details, product keys
- Web site login details (make sure they are saved in the cloud or somewhere you can recover from).
- Microsoft Account recovery key
- Bitlocker recovery keys
- Full backups

### WHEN YOU'RE READY TO UPDATE

Wait for a good time to do the update. Allow an hour for the updating of your computer, it may take less.

Before updating:

- Unplug unnecessary accessories including external drives, USB memory sticks, printers, scanners etc. Occasionally Windows updates go awry because of extra accessories, especially external drives/memory sticks that are present during the update and rebooting process. Once the update is completed you can plug back into the computer any devices you need.
- Have a stable Internet connection.
- Plug in AC power for laptops and tablets.

Once the update has started you can go away and 'have a life' while your computer is updated. Windows will restart a few times while updating.

Eventually you'll see the standard Windows login screen.

# Windows 10 for Microsoft Office users

## Anniversary Update 2016 - Update Options

### UPDATE OPTIONS

There are three ways to get major updates to Windows 10.

- Update Assistant
- Direct update
- Media Creation Tool

While Microsoft announces a public release date (like 2 August 2016 for the Anniversary Update) the reality is more complicated. The update is released gradually over days and weeks to people over the globe. No release schedule or advance notice is available. For 'Direct update' or 'Media Creation Tool' you have to wait until the Anniversary update is available for your computer.

Or use the lesser known 'Windows 10 Update Assistant' which isn't mentioned in Windows 10 itself.

### UPDATE ASSISTANT

*Windows 10 Update Assistant* lets you get the Anniversary Update right away and 'beat the queue' of Microsoft's staggered deployment.

Go to this web page:

<https://support.microsoft.com/en-us/help/12387/windows-10-update-history>

and click on the button 'Get the Anniversary Update now'.

#### About the Windows 10 Anniversary Update

Windows just keeps getting better and better.

The Windows 10 Anniversary Update is the second big update since the launch of Windows 10. It's [full of great new features](#) that customers told us they want. The Windows 10 Anniversary Update will automatically download and install when it becomes available for your device (your device will be running Windows 10 Version 1607 after it's installed). Want it now? Click the button below to get it.

[Get the Anniversary Update now](#)

That button downloads the *Windows 10 Update Assistant* (as at Aug 2016, Windows10Upgrade28084.exe about 6MB ).

This will check your current Windows 10 and update it, if necessary.

#### Update to the latest version of Windows 10

One of the best features of Windows 10 is that it keeps getting better with every update. This PC is currently not running the latest and most secure version of Windows 10. This PC is running version 10586. The latest version is 14393.

We can help you get the latest security enhancements and feature improvements. Click 'Update Now' to get started. [More information](#)

Click on the 'Update Now' to start the update process.

# Windows 10 for Microsoft Office users

## Anniversary Update 2016 - Update Options

### Getting your update ready

Downloading Windows 10 update. Please wait.

Percent complete:

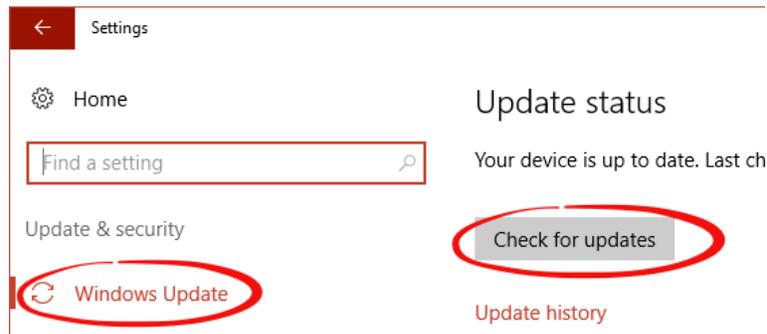
0%

- This will take a while. You can keep working.
- Your files will be right where you left them.
- You can choose when to start your update.
- It's easy to go back if you don't like it.

After the download you can decide when to start the update.

### DIRECT UPDATE

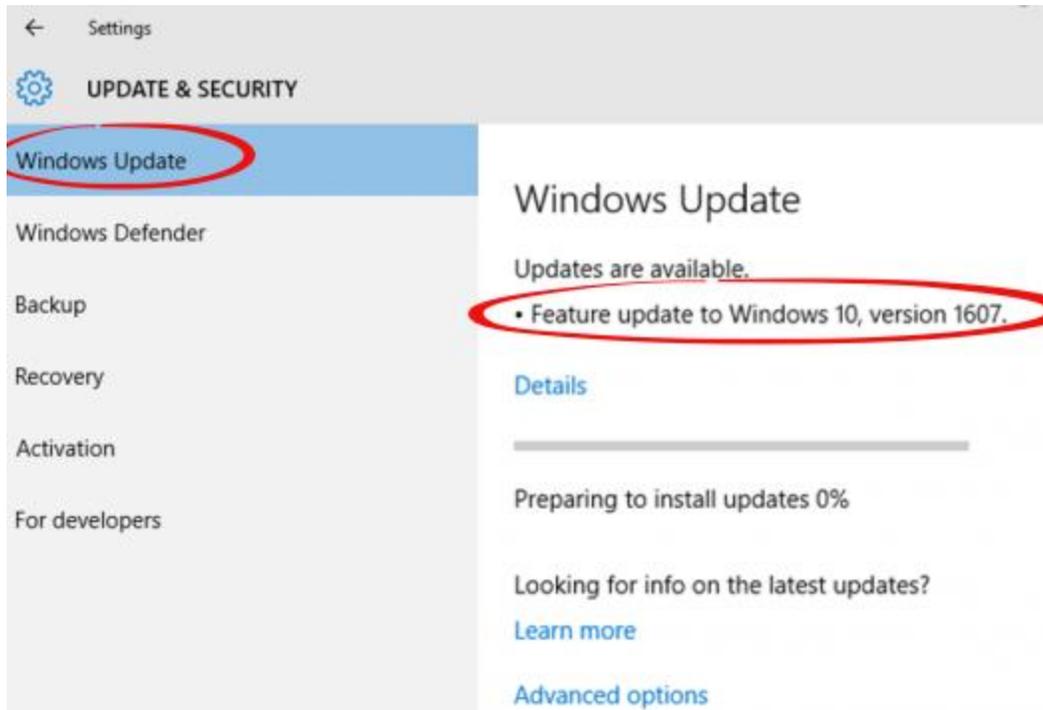
Go to Settings | Update & security | Check for updates. (remember to turn off the 'Defer feature updates' choice)



## Windows 10 for Microsoft Office users

Anniversary Update 2016 - Update Options

The 2016 Anniversary Update is available if you see this is downloading:  
Feature update to Windows 10, version 1607



Microsoft proudly talks about the 'Anniversary Update' but doesn't use that term when you're downloading it to your computer? Go figure.

The update will download then offer to install after the 'Active Hours' set. More likely you'll choose to update when you choose.

### MEDIA CREATION TOOL

The other update option is to download a complete Windows 10 install/update ISO file using the [Media Creation Tool](#). See that chapter for details.

This option lets you update multiple computers without downloading the update for each computer.

Unfortunately, there's no way to tell what Windows 10 version or build you're downloading! In the days or weeks after an official update release, you might get the older version or the newer one. You don't know for sure until you've downloaded it.

As a general rule, if Windows Update will start downloading the 'Feature Update' then the Media Creation Tool *should* give you the updated .ISO but there's no guarantee.

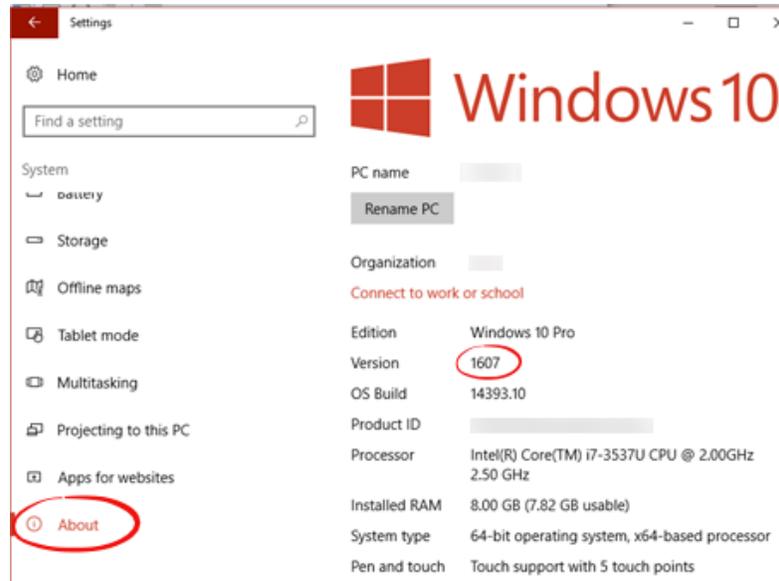
# Windows 10 for Microsoft Office users

Anniversary Update 2016 - After updating

## UPDATING

Major updates to Windows 10 take about 30-45 minutes depending on your computer. It will restart a few times but eventually end up at the standard login screen.

After the 2016 Anniversary Update you can check at Settings | System | About. The Version number should be **1607** or above. OS Build should be **14393** or above.



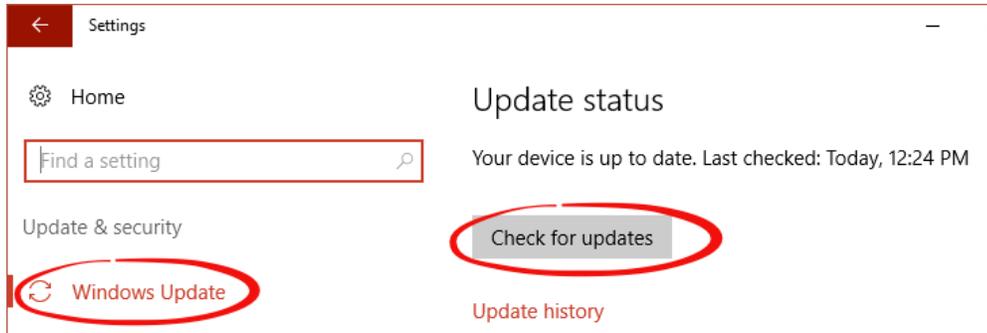
## AFTER UPDATING

Windows should be ready and raring to go after the Anniversary Update is installed. But there's a few jobs left to do:

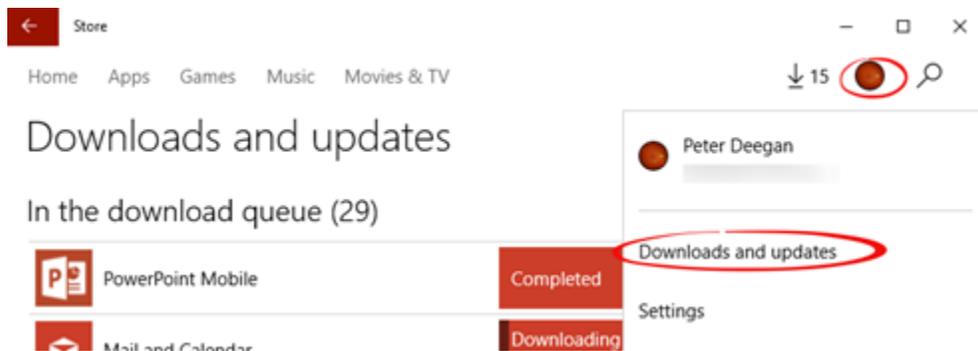
- **Plug in accessories.** If you removed accessories for the update, as suggested, plug them back in now. They should work again right away because the relevant drivers are still present.
- **Check programs.** Most programs should work OK with the Anniversary update. In fact, it would be surprising to find anything that 'breaks' after the update. That said, you might like to check that important programs are still working. For example, virtual machines (Hyper/V, VMware etc.), older versions of Office, old Windows 32 or even DOS programs. Get any updates for installed software.
- **Windows update.** Go to Settings | Update & Security | Windows Update and Check for updates. This will ensure you have any post-upgrade changes that are available.

# Windows 10 for Microsoft Office users

Anniversary Update 2016 - After updating



- **Windows Store update.** The Modern Apps aren't updated at the same time as Windows Updates (no, we don't understand it either). You can wait for an automatic update or go to Store | Downloads and updates | Check for Updates and, once that's done, Update All



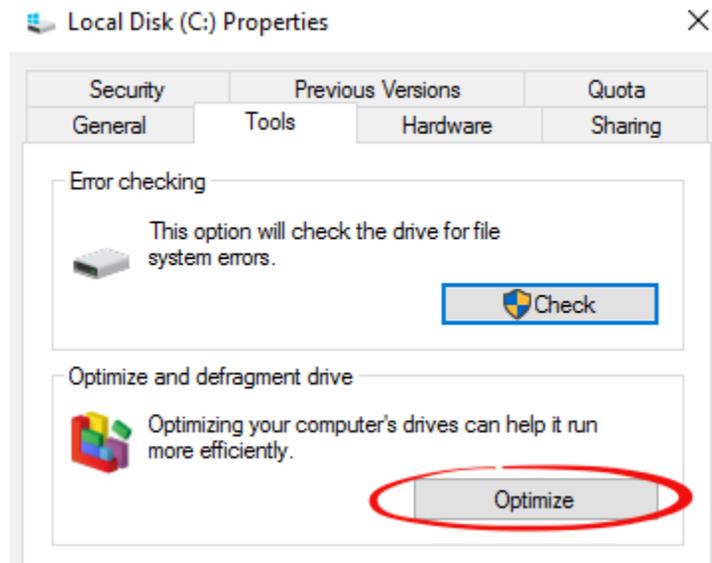
- **Optimize drives.** For non-Solid state drives only and this isn't essential. Right-click on non-SSD drives in Explorer, choose Properties | Tools | Optimize.

This will defragment the drive and slightly improve performance. Modern Windows caching means that drive defragmentation isn't as

## Windows 10 for Microsoft Office users

Anniversary Update 2016 - What's in it?

important as it once was but it may be worth the time after major changes to the computer.



- **Remove old Windows.** The previous Windows version is saved on your computer to let you 'roll back' to that version, if necessary. This takes up 15-20GB or more of your main drive. Once you're confident with the stability of the newer Windows, you can delete the old version.

To recover that space, right-click on Drive C and choose Properties. On the General tab choose Disk Cleanup. Once that appears on the screen choose 'Clean up system files'. From the list of clean up options choose the Previous Windows installation.

## WHAT'S IN IT?

What's in the Windows 10 Anniversary Update?

There's no full list of changes - Microsoft surely has one but they aren't telling. If such a comprehensive list did exist, it would be very, very, very long indeed. Any lists of changes you see, including ours, are necessarily incomplete.

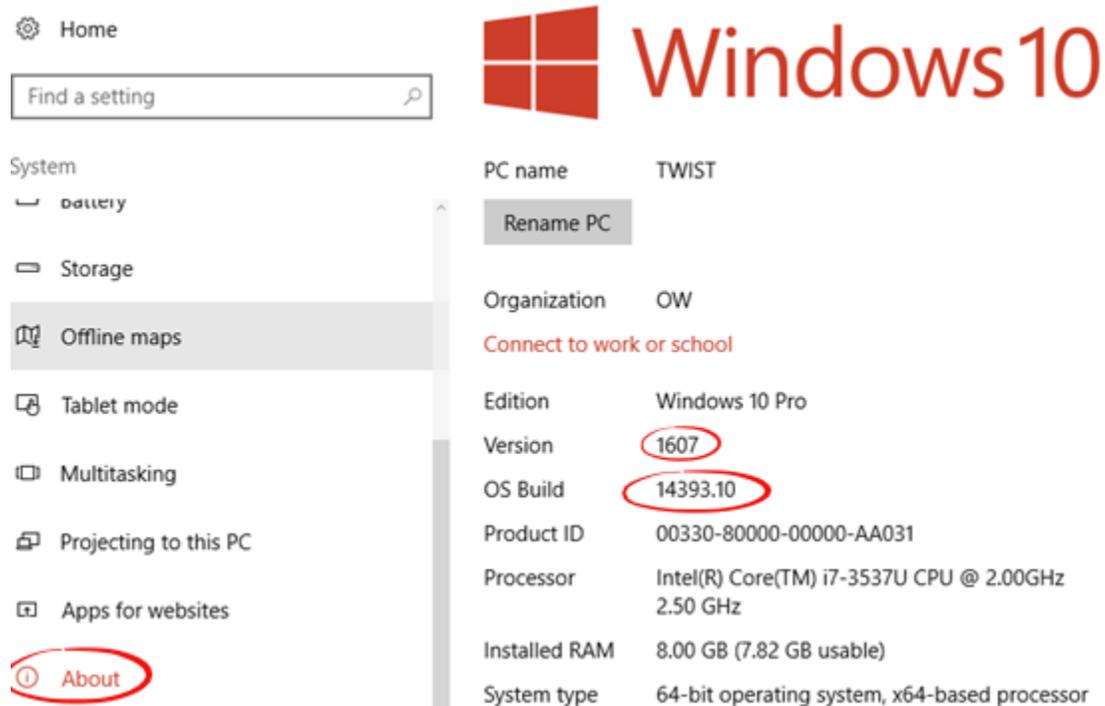
Quite a few cynics would say that the 'Anniversary Update' is a lot of things that should have been in the original Windows 10. There's some truth in that because there were plenty of shortcomings and bugs in the first release.

# Windows 10 for Microsoft Office users

Anniversary Update 2016 - What's in it?

## THE NUMBERS

You won't find the term 'Anniversary Update' on any Windows 10 dialog or settings page. Instead you have to know the Microsoft code numbers. Go to Settings | System | About:



For Windows 10 'Anniversary Update' the numbers are:

Version: 1607

OS Build: 14393

If your computer shows those numbers, you have the 2016 Anniversary Update.

Higher values will be for changes after the Anniversary Update. Lower values are pre-Anniversary Update.

## CHANGES

While there's many changes in the 2016 major update, it will still be familiar to current Windows 10 users

The Start Menu and Wifi list are the most obvious changes in the Anniversary update. Both of these were incomplete and buggy until now.

But there are some interesting additions in the 2016 update:

## Windows 10 for Microsoft Office users

### Anniversary Update 2016 - What's in it?

- Cortana - Microsoft's answer to Apple's Siri. A voice interface for web searches.
- Windows Ink - a drawing interface for tablets, phones and touch screens
- Edge with extensions - the new web browser now has plug-ins available.
- Xbox anywhere - a link to Xbox so that games can be played on PC's.
- Start Menu - many changes to the original Windows 10 Start Menu following the less than kind feedback.
- Action Center - the central place for Windows and program notification has also been changed after feedback from customers.
- Settings - the update continues the move of options from the old Control Panel to the newer Settings dialogs. But there are still many features not in Settings and, worse, some features that are split between Settings and Control Panel.
- Desktop - the clock now has a larger calendar when clicked (or use the new Win + Alt + D shortcut).
- [Virtual Desktops](#) - a few changes, and most importantly a program window can now appear on all virtual desktops.
- Explorer - little change but File Explorer has a new icon and Microsoft is overly proud of this decorative change.
- [Defender](#) - has an 'offline' mode. This feature is poorly named but a welcome change because it will help checking for rootkits.
- [Mobile Hotspot](#) - sharing your Wi-Fi connection (like tethering on a phone) has been possible since Windows 7. Now it's officially available in Windows settings.
- Longer paths - NTFS drives now support paths longer than 260 characters.
- Hyper/V containers - is an important innovation in the 2016 release. It makes no difference to average users now but could be a big deal in the future.

# GETTING WINDOWS 10

Most people received Windows 10 during the free upgrade period that Microsoft offered until 29 July 2016.

After that date you have to buy an upgrade. The upgrade consists of a product key only. You download Windows 10 from Microsoft and use the product key to authorize it.

Others will get it included with a new computer.

In this chapter we'll show you how to upgrade smoothly.

## VERSIONS

For Windows 10, Microsoft again rearranged the versions available and reduced the choice to one of three for most computer users.

The Windows 10 editions are:

- Home
- Pro *not 'Professional'*
- Enterprise
- Education

The choice for most people is between Windows 10 Home and Pro. The Enterprise edition is only available to organizations and IT Professionals while the Education edition is only available to qualifying institutions.

## HOME

With the exception of a few key features, the Windows 10 base product has all the new features that most people will want including:

- Start Menu with Live Tiles
- Touch interaction (with compatible hardware, naturally)
- Device Encryption
- Cortana
- File History
- Storage Spaces
- Remote Desktop client support

# Windows 10 for Microsoft Office users

## Getting Windows 10 - Versions

- Virtual hard drive / VHD mounting
- Microsoft account / Passport
- VPN client support
- Windows Defender (anti-virus) and Windows Firewall
- Virtual Desktops
- Snap assist (4 apps on one screen)
- Snap apps (across monitors)
- Continuum (switch automatically between PC and tablet modes)
- Edge – the browser. Successor to Internet Explorer (which is still supplied with Windows 10)

This isn't a comprehensive list, by any means.

### PRO

The Pro (Professional) Edition includes some features we'll be covering at length in this book.

All the above plus:

- Remote Desktop as client and host
- Hyper-V (64-bit version only)
- BitLocker
- Encrypting File System
- Group Policy Editor
- Ability to join a Windows Domain

### ENTERPRISE

The top level bundle is only sold via Software Assurance plans to organizations plus subscribers to MSDN or TechNet.

This version is aimed at making organizations pay for the most expensive version of Windows in order to get the features to match with the most recent versions of Windows Server.

All of the above plus:

- Windows to Go – lets you create a running version of Windows, installed on a USB key.

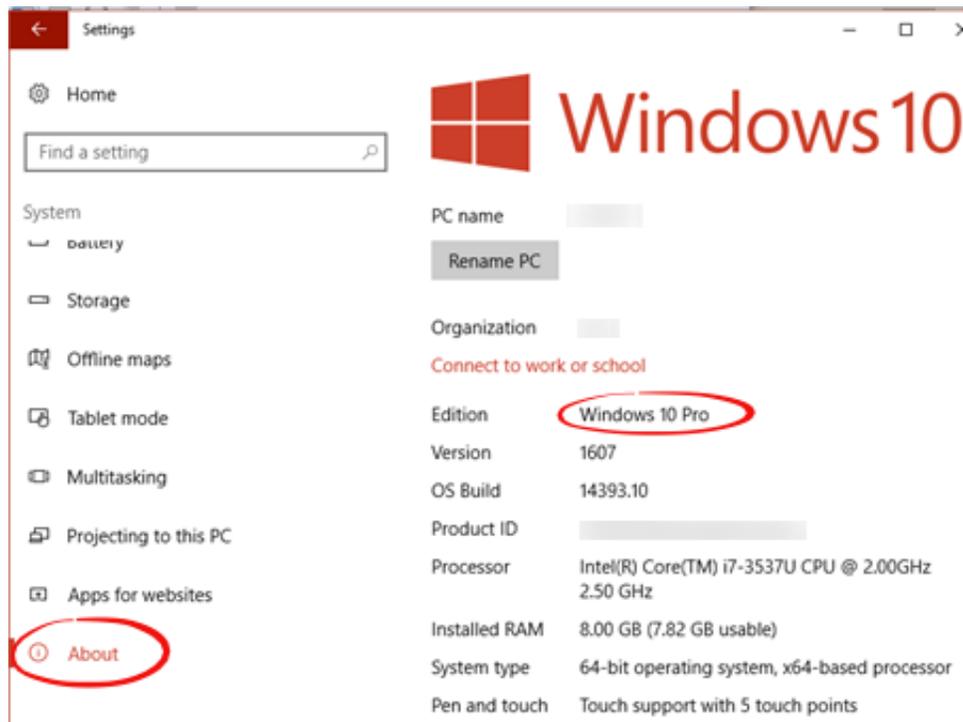
# Windows 10 for Microsoft Office users

## Getting Windows 10 - Versions

- DirectAccess – an automatic, seamless and persistent version of VPN to link remote computers to a server.
- BranchCache - caches server files on a remote computer for faster access.
- Credential and Device Guard.

### WHAT DO I HAVE?

To confirm which Windows 10 edition, go to Settings | System | About and look at the edition:

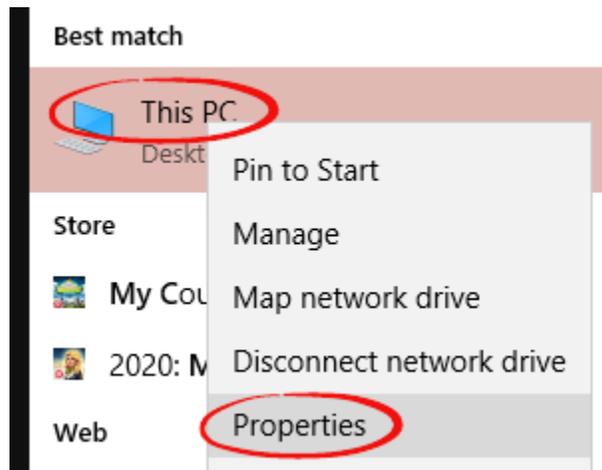


Just below that is the Version number and OS Build. System Type shows if you have the 32-bit or 64-bit version

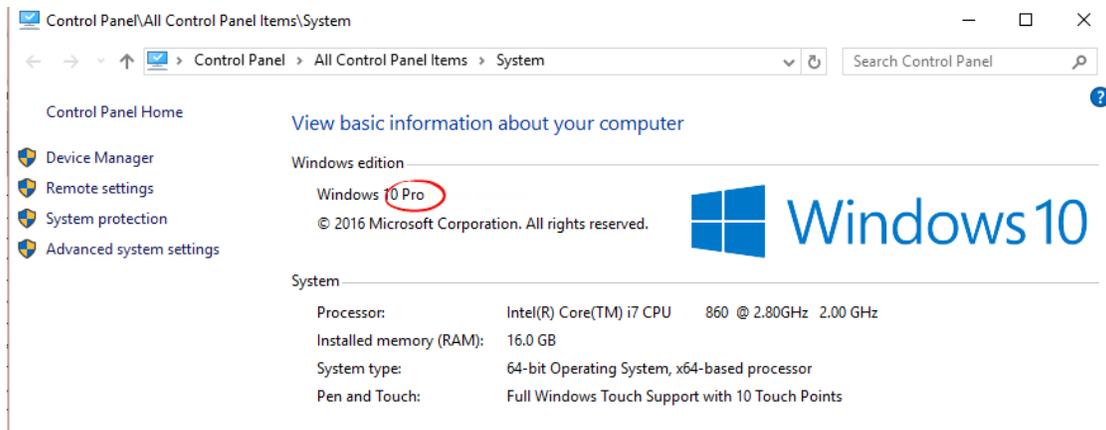
## Windows 10 for Microsoft Office users

Getting Windows 10 - 32-bit or 64-bit?

Alternatively go to This PC and choose Properties. 'This PC' (the new name for 'My Computer') is in File Explorer or search for 'This PC' from the Start Menu.



Or go to Control Panel | System. The Windows edition is there with some other useful computer info, but not the version/build number.



## 32-BIT OR 64-BIT?

For most people the differences between 32-bit and 64-bit Windows are indistinguishable. 64-bit computers can work with more memory installed and Windows makes good use of extra memory.

You can see which type you have at Settings | System | [About](#) and look at the System Type.

Computers with more than 4GB of RAM require 64-bit Windows.

When Windows 7 was released, almost all copies were 32-bit except on machines sold with more than 4GB of RAM.

## Windows 10 for Microsoft Office users

### Getting Windows 10 - Buying

Since then, Microsoft has been steadily moving to selling 64-bit versions of Windows even for computers that, on paper, don't need it. We've been surprised to open up small laptops (which can handle 2GB RAM tops) and find 64-bit Windows preinstalled. So it seems likely that you'll get a 64-bit version of Windows 10.

If you have a choice, **go for 64-bit Windows 10**. Even if your initial hardware doesn't need it, you may need 64-bit features in the future. Most likely that means adding RAM to go over 4GB.

Windows 10 64-bit can run 32-bit programs, including Office. However, 32-bit Windows will NOT run 64-bit programs.

64-bit Windows should not cost any more than the equivalent 32-bit edition. Some retailers might charge more for the 64-bit release but, as far as we know, Microsoft charges the same for both.

When Windows 64-bit was introduced there were problems with incompatible drivers, however 64-bit Windows is now so common that compatible drivers are standard releases.

Hyper/V requires Windows 8 64-bit Professional or Enterprise versions.

## BUYING

### FREE UPGRADE

You had until 29 July 2016 to get the free upgrade for Windows 7 or 8 machines.

There was a little 'flexibility' after that date. Some people found they could still upgrade from Windows 7 or 8 after 29 July. But eventually that extra opportunity will close as Microsoft adjusts their authentication services.

Now that the free upgrade year has gone you have two choices for getting Windows 10:

- **Buy an upgrade.** It officially costs US\$120 for Windows 10 Home or \$200 for Windows 10 Pro, but there's [no need to pay](#) those high prices.
- **Get Windows 10 on a new computer.** This is usually the best value. Keep 'old' Windows on your current computer and switch to Windows 10 when you replace the hardware.

# Windows 10 for Microsoft Office users

## Getting Windows 10 - Buying

### SAVING MONEY

In [Office 2016: the real startup guide](#) we have a whole chapter on saving money when buying Microsoft Office. A lot of that advice also applies to buying Windows 10.

**Shop around.** Don't pay the official retail price.

The Microsoft Store (physical shops or online) is the worst place to buy anything. The prices are high; usually full retail. Even their occasional 'special offers' aren't that special; you can find better prices elsewhere.

Check prices from reputable online retailers. Amazon usually has competitive prices and are a good guide to a reasonable 'street price' for software.

Other online sales sites like Ebay, Craigslist or Gumtree may offer low prices but there's a greater risk of being sold an invalid, pirated or stolen product key. Be very cautious using unknown online merchants.

**It's the same thing.** Don't let any retailer trick you into believing the Windows 10 they sell is somehow special, newer or different. It's not. All you are really buying is the important 25-character Product Key which verifies and authorizes the installation. The software itself is downloaded from Microsoft (no CD or DVD is supplied).

**Mail or online.** If buying online, check if the Product Key is delivered to you immediately (ie via email or displayed on the screen) or sent to you on a physical card (as if you bought in a store). Either way is OK. Strangely, you might pay more for online delivery compared to waiting a few days for the mail/courier to arrive.

### HOME TO PRO

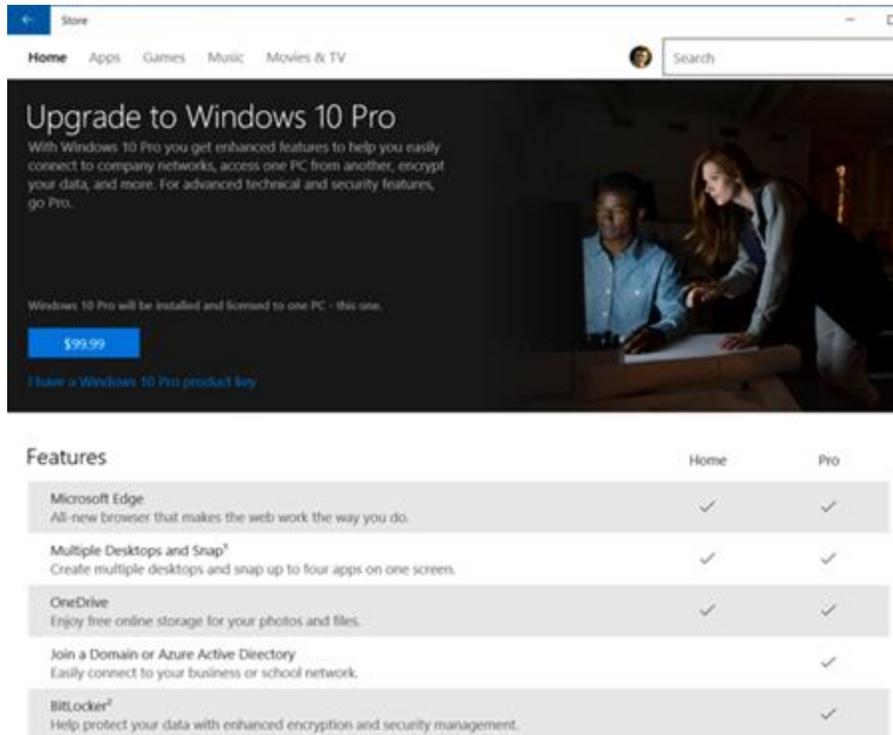
It is possible to 'upgrade' a Windows 10 Home computer to the Pro version.

The cost in the USA is \$99.99 plus tax. Buying the Home edition then upgrading to Pro is more expensive than buying Pro in the first place.

Go to the Windows Store and search for 'Upgrade to Windows Pro'.

# Windows 10 for Microsoft Office users

## Getting Windows 10 - Upgrading to 10



You can only buy the Home to Pro upgrade direct from Microsoft.

You'll be issued with a new Product Key which is entered into Windows and activated. The switchover doesn't take long since it seems all the 'Pro' features are dormant in Windows 10 Home. With the right Product Key those 'Pro' features become available.

## UPGRADING TO 10

This chapter is for anyone with Windows 7 or 8 who wants to switch to Windows 10. What to do before the upgrade is important.

### WHAT DO I HAVE?

You need to start with Windows 7 SP1 or Windows 8.1. Most likely you'll have those versions because they've been available for some time and offered through automatic updates.

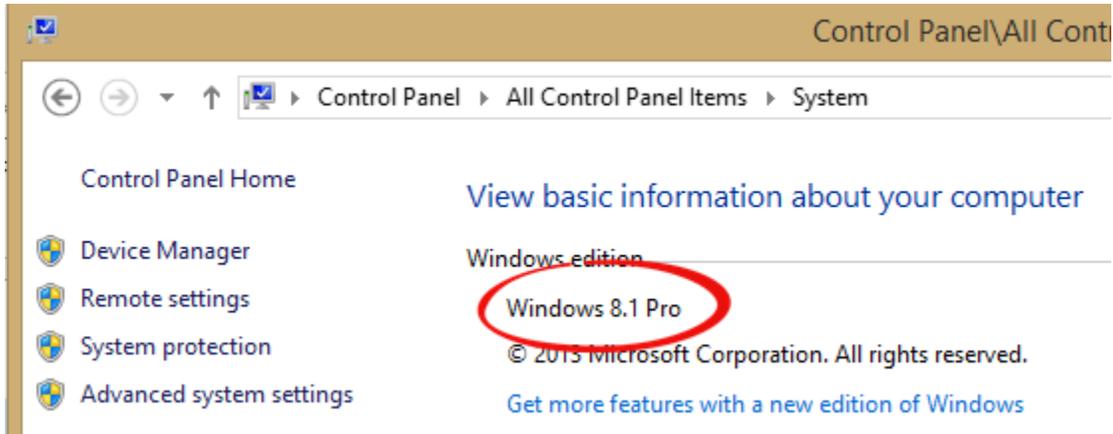
How do you know if you have Windows 8 or 8.1? The Start button on bottom left is a dead giveaway for Windows 8.1.



Or go to Control Panel | System to check the Windows edition:

# Windows 10 for Microsoft Office users

## Getting Windows 10 - Upgrading to 10



If you're upgrading from Windows 7 or 8, the upgrade process will automatically select the right Windows 10 version based on the edition of Win 7/8.

If necessary, you can get the [Windows 7 SP1](#) or [Windows 8.1 Update](#) from the links.

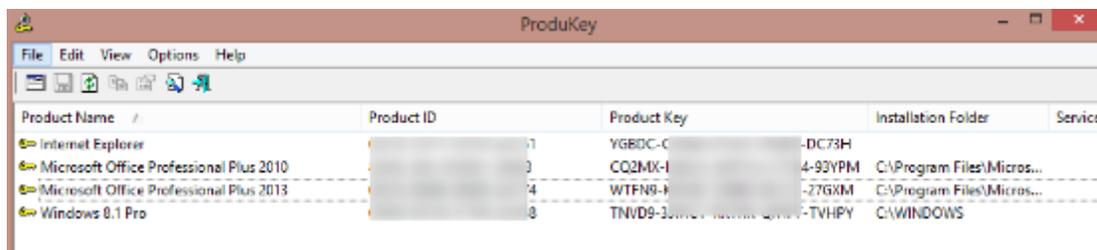
### PRODUCT KEYS

Make sure you have a full list of your software product keys, especially Windows and Office.

The Windows 10 upgrade should not need the Windows product key but if something goes wrong or you choose a full 'blank' install, the old key is required.

Your Microsoft Office product key should also 'carry over' in any upgrade but having a separate copy is always prudent.

There are plenty of product key viewing programs out there including many that want to charge you! [Nirsoft Produkey](#) is simple, small and free.



It works with many versions of Windows and Office including Windows 7/8 and Office 2013/2016.

The original (July 2015) had some unnecessary Product Key hassles, especially for Windows 7 users switching to Windows 10. With later releases,

# Windows 10 for Microsoft Office users

## Getting Windows 10 - Upgrading to 10

Microsoft promises that has gone away. You should be able to activate Windows 10 with a valid Windows 7, 8 or 8.1 Product Key.

### BEFORE YOU BEGIN

The upgrade from Windows 7 or 8 to 10 should be harmless but you never know when things might go wrong.

Before any major software update, always **backup your entire computer**. Make a copy of all your essential documents, Outlook data etc.

[Office Backup Handbook](#) explains how to make one-off and regular backups of your computer.

The upgrade should take less than an hour but again, if things go wrong, you might need more time. Do the upgrade when you don't have any pressing jobs coming up.

The upgrade will use about 3GB of disk space on drive C, so make sure you have at least that amount of free space available.

The download is approx. 3GB per computer so you'll need a fast Internet connection and enough download allowance.

Have your Windows product key handy. You may have to re-enter the key as part of the upgrade process.

### HOW TO START

There is a button on many Windows 7/8 machines. You can use that or go to <https://www.microsoft.com/en-au/software-download/windows10> to start the Media Creation Tool.

### DOWNLOAD – MEDIA CREATION TOOL

The best option is to get single downloadable Windows 10 upgrade file and not the 'one time' upgrade offered by Microsoft. They call this is Media Creation Tool.

The download has many advantages:

- Upgrading multiple computers without repeated 3GB downloads.
- Doing a 'clean install' rather than upgrading an existing computer.
- Use the download to reinstall Windows in the future.
- Can download with faster Internet access (maybe a work or public place) then use for computers with less speedy Internet connection.

## Windows 10 for Microsoft Office users

### Getting Windows 10 - Upgrading to 10

- You, like us, are 'old school' and prefer a 'proper' installation media.

Go to <https://www.microsoft.com/en-us/software-download/windows10>

---

*There's no indication of which Windows 10 version you will get. If Microsoft has released a major update (like the 2016 Anniversary update) it may not be immediately available via the Media Creation Tool.*

---

On that page you have the option to download the upgrade tool for 32-bit or 64-bit. If you're not sure which see What do I have?

Use the media creation tool to download Windows. This tool provides the best download experience for customers running Windows 7, 8.1 and 10. Tool includes:

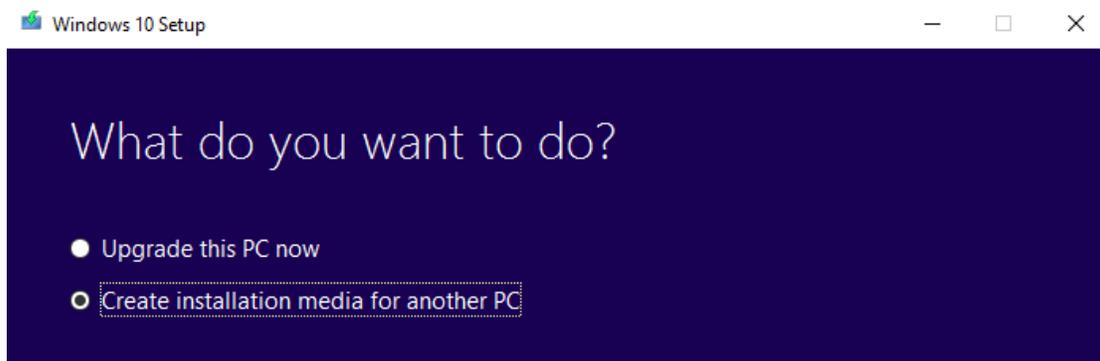
- File formats optimized for download speed.
- Built in media creation options for USBs and DVDs.
- Optional conversion to ISO file format.

Download Tool Now (32-bit version)

Download Tool Now (64-bit version)

That link will download a small file, run it.

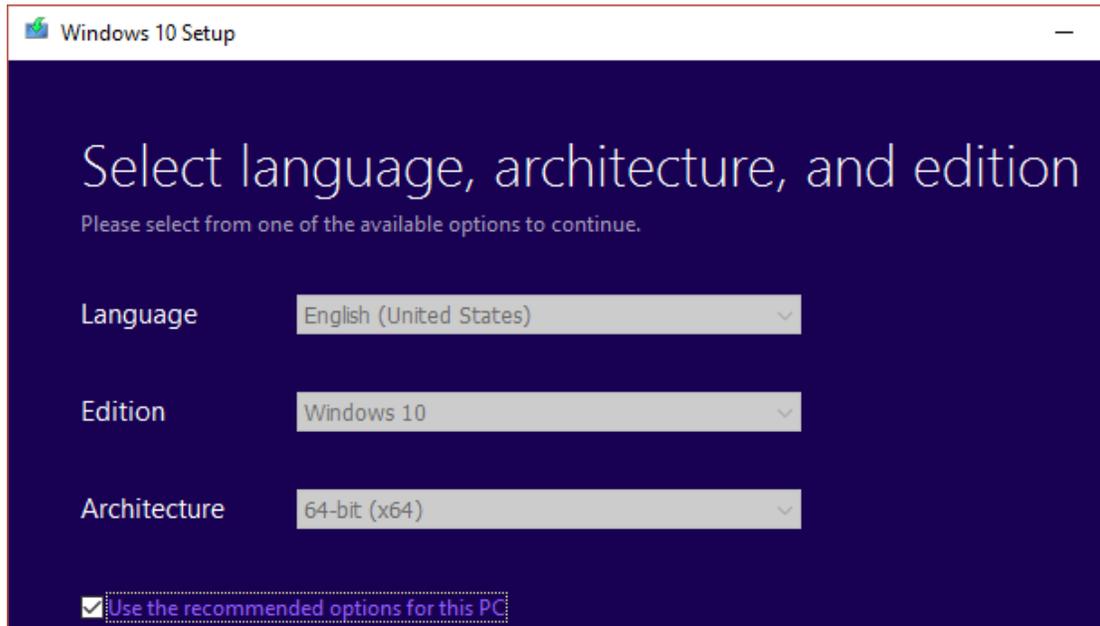
Then choose 'Create installation media' even if you want to upgrade the computer you're running.



# Windows 10 for Microsoft Office users

## Getting Windows 10 - Upgrading to 10

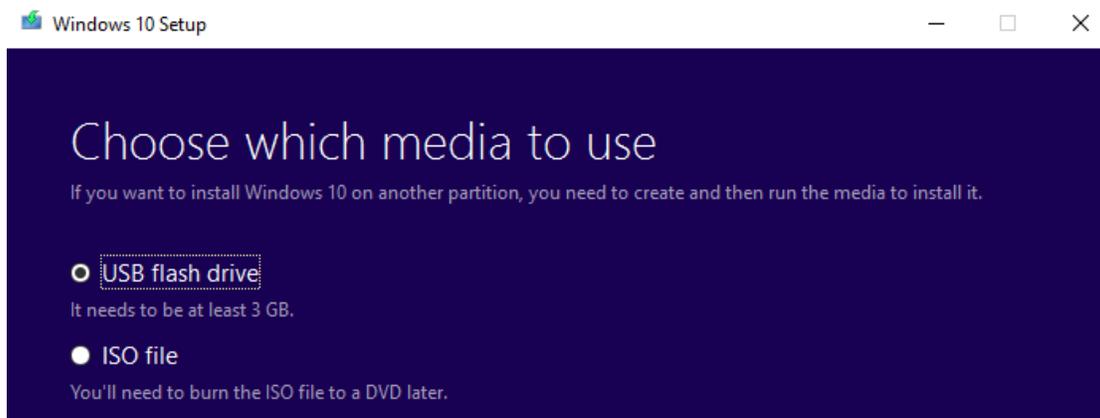
Next choose the language, edition and bitness of the Windows 10 you need.



The tool will choose settings to match your current computer. UNcheck the 'Use the recommended options for this PC' box if you want something different (for another computer).

Select the language of your choice. English speakers can choose 'United Kingdom' or 'United States' variants.

Choose 32-bit or 64-bit as required to match the existing Windows setup.



You can choose a download that will work on a bootable USB stick or a .ISO file that can be made into a DVD or mounted to appear as a DVD in Windows 8.

The USB option works OK but we're a bit conservative 'old school' and go the ISO route.

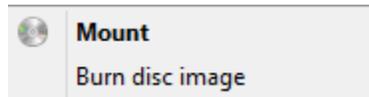
## Windows 10 for Microsoft Office users

### Getting Windows 10 - Upgrading to 10

Comments that 'You'll need to burn the ISO file to a DVD later' isn't entirely correct. Windows itself will let you mount an ISO file directly so it appears as a drive. We suggest creating an ISO file.

Click Next, you'll be asked for a download folder then the download will start. The 3GB download may take some time, depending on your Internet access.

After you've created the Windows 10 media, use it to do the upgrade. In Windows, right-click on the ISO file and choose 'Mount' or burn a DVD then run setup from the physical media.



That will create a new drive in Explorer with the Windows 10 install 'DVD' loaded. Start the upgrade from that drive.

### UPGRADE

The most important upgrade question is 'What to keep'.

Most likely you'll want to *Keep Windows personal files, apps and Windows settings*.

If you've been having trouble with Windows 7/8, you might want to choose *Keep personal files only* to get a cleaner 10 install but your data left intact.

'Nothing' is a clean install with all data and programs removed. Only use this option if you have good backups.



## Windows 10 for Microsoft Office users

### Getting Windows 10 - Catching up

There was a time when Windows upgrades were a hassle. Many savvy users used the opportunity to do a clean Windows install then reinstall necessary apps and data.

The Windows 10 upgrades seem a lot more reliable. We've upgraded many machines to Windows 10 with no major hassles. That's as it should be especially since Windows 7, 8 and 10 all have common base technologies.

We suggest you try the *Keep Windows personal files, apps and Windows settings* first. Only if there's problems try the other options.

The Windows 10 upgrade takes some time so "*Patience grasshopper ....*". It can take an hour or so to do the upgrade depending on your computer.

You can go off, have a tea, coffee or a wee dram of whiskey while you wait for the upgrade to happen. The computer will reboot a few times but should do that without human intervention.

At the end of a successful upgrade, login to your computer as normal. There's a little wait while Windows 10 makes some account changes.

## CATCHING UP

No matter when or how you install Windows 10 there will be updates necessary. Microsoft pushes out Windows updates to customers on a regular basis.

Windows Modern Apps are updated separately from the rest of Windows.

In addition, there are updates to Microsoft Office coming out most months.

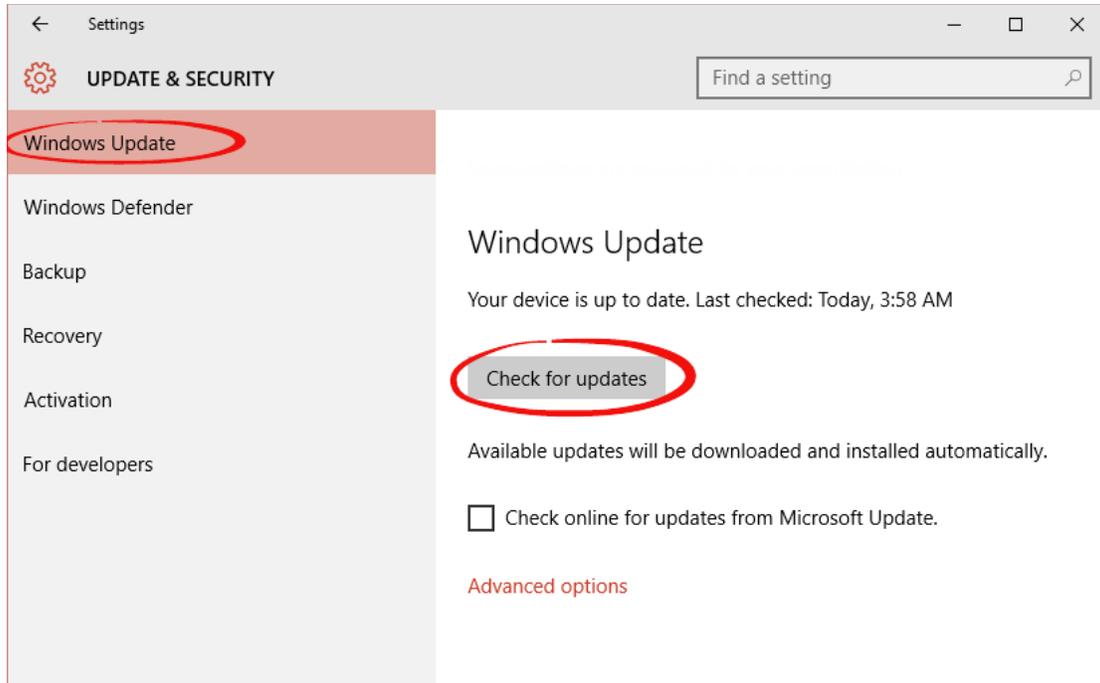
## WINDOWS UPDATE

You're probably familiar with Window Update. It downloads updates from Microsoft and installs them, usually automatically. Windows Update has changed look and location in Windows 10 but the fundamentals are the same.

# Windows 10 for Microsoft Office users

## Getting Windows 10 - Catching up

Immediately after Windows 10 installation or upgrade go to Start Menu | Settings | Update and Security | Windows Update and click on 'Check for Updates'.



Make sure that it shows 'Available updates will be downloaded and installed automatically' as shown above.

Let Windows Update download any extra drivers and software it deems necessary. It's common for Update to find more recent drivers for your hardware.

# Windows 10 for Microsoft Office users

## Getting Windows 10 - Catching up

Reboots after updates are less common these days, but still sometimes necessary. If required, it will be scheduled for early morning. You can change that time or reboot right away.

### A restart has been scheduled

If you want, you can restart now. Or, you can reschedule the restart to a more convenient time. Be sure your device is plugged in at the scheduled time. Depending on the size of the update, the install might take a while.

We'll schedule a restart during a time you usually don't use your device (right now 3:00 AM tomorrow looks good).

Select a restart time

Time:

3	00	AM
---	----	----

Day:

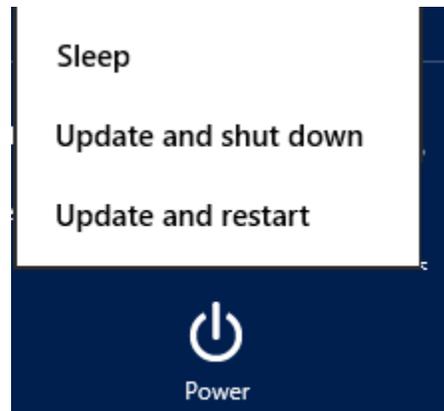
Tomorrow	▼
----------	---

Restart now

[Advanced options](#)

If a reboot is required, do that, then go to Windows Update again and check for more updates. That's because sometimes there are patches for the recent update that don't appear in Windows Update until the original update is installed (screwy but true).

The Power options change if there are pending updates to give you options to update then shut down the computer or restart.



# Windows 10 for Microsoft Office users

Getting Windows 10 - Catching up

## UPDATE PROBLEMS

Troubleshooting Windows Update isn't easy. You're thrust into a murky world of obscure error codes and not many web pages from Microsoft. Microsoft provides very poor support for update problems.

Note the error code given by Windows Update and do a web search like "Windows Update error 80096002" or whatever error code you have. You'll be able to see the discussions from others similarly afflicted and hopefully a fix. If you're really lucky, there will be a Microsoft Knowledge Base article mentioning the error code.

## DISM

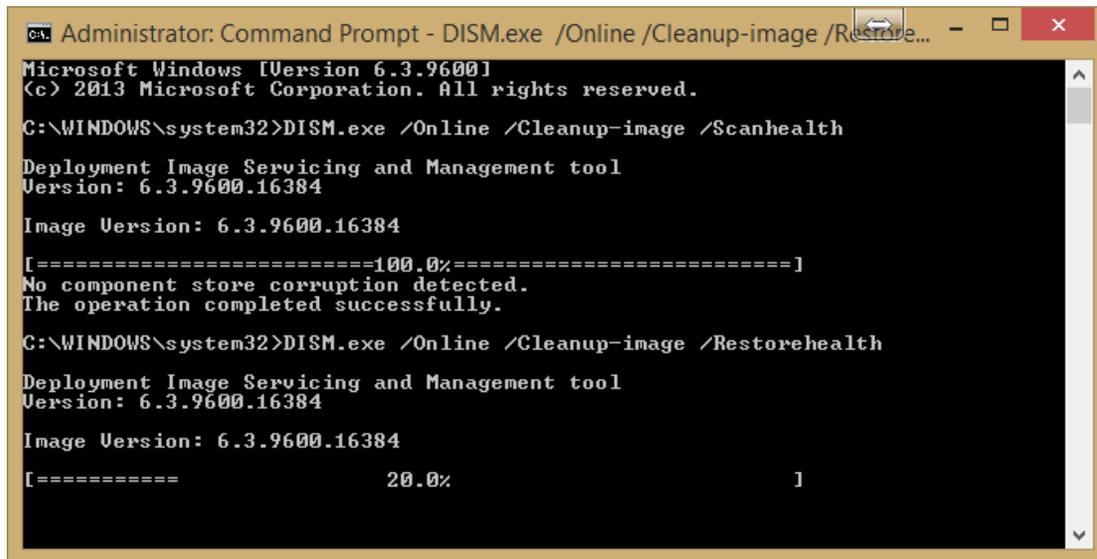
The Deployment Image Servicing and Management (DISM) tool is buried in Windows but can be very handy when trying to fix Windows Update problem.

Open a command prompt with Administrator privileges.

Run this command:

```
DISM.exe /Online /Cleanup-image /Restorehealth
```

that will attempt to fix corrupted files and can take a few minutes.



```
Administrator: Command Prompt - DISM.exe /Online /Cleanup-image /Restore...
Microsoft Windows [Version 6.3.9600]
(c) 2013 Microsoft Corporation. All rights reserved.

C:\WINDOWS\system32>DISM.exe /Online /Cleanup-image /Scanhealth
Deployment Image Servicing and Management tool
Version: 6.3.9600.16384

Image Version: 6.3.9600.16384

[=====100.0%=====]
No component store corruption detected.
The operation completed successfully.

C:\WINDOWS\system32>DISM.exe /Online /Cleanup-image /Restorehealth
Deployment Image Servicing and Management tool
Version: 6.3.9600.16384

Image Version: 6.3.9600.16384

[=====                20.0%                ]
```

## OFFICE UPDATES

By default, Windows Update will also update recent versions of other Microsoft products.

# Windows 10 for Microsoft Office users

Getting Windows 10 - Catching up

That's controlled from Windows Update | Advanced Settings

← Settings

## ⚙️ Advanced options

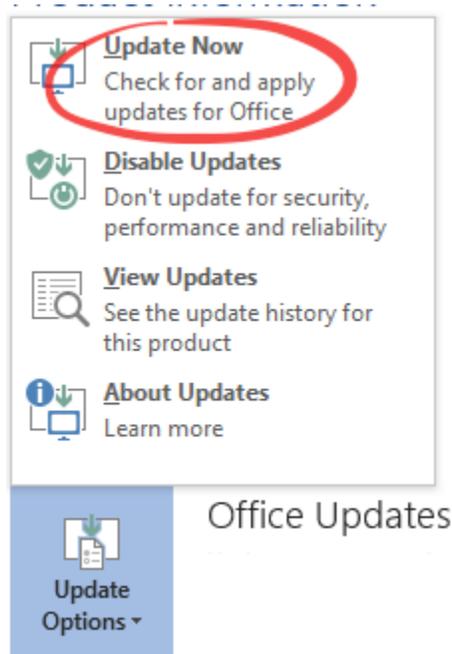
Choose how updates are installed

Give me updates for other Microsoft products when I update Windows.

Defer feature updates  
[Learn more](#)

Use my sign in info to automatically finish setting up my device after an update.  
[Learn more](#)

This option does NOT appear to update Microsoft Office 2016 for Windows 'click to run' installs with Office 365 subscriptions. To update Office for Windows go to any Office program, File | Account | Update Options



## STORE UPDATES

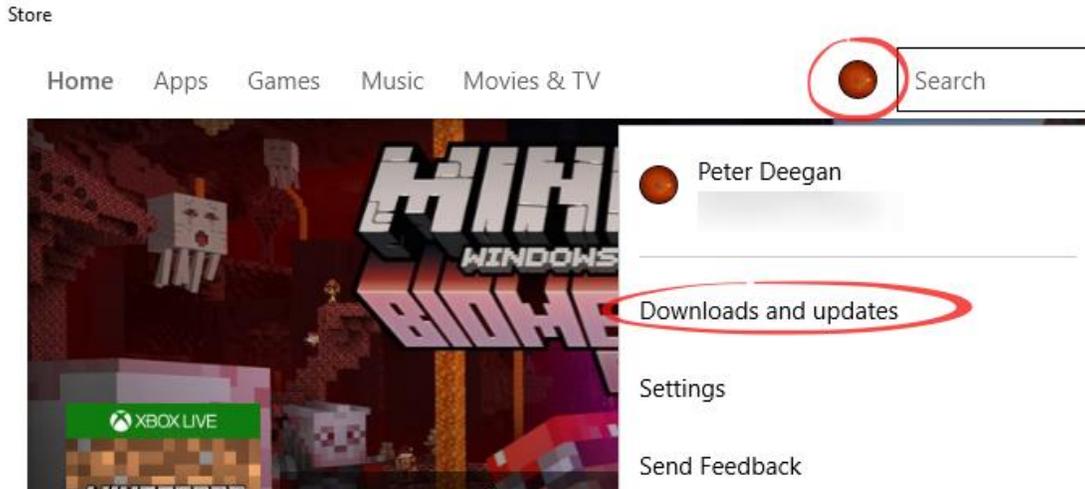
The Windows Store has its own app updating system to send you changes to Windows / Modern apps.

## Windows 10 for Microsoft Office users

Getting Windows 10 - With a new computer

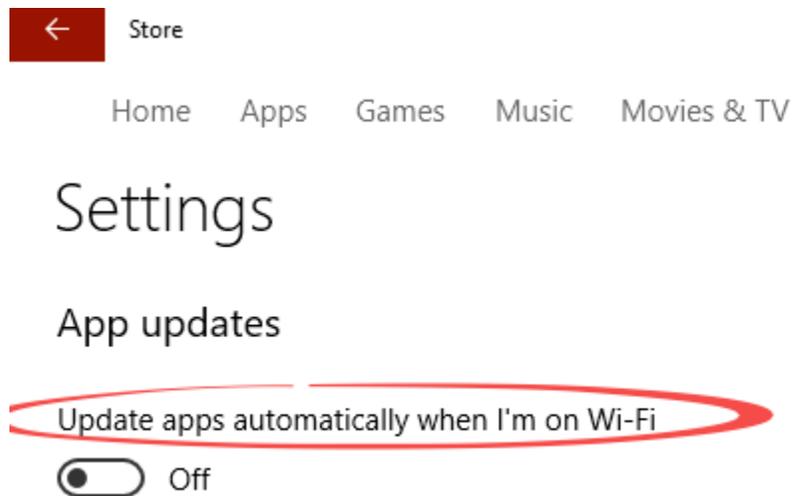
This system is entirely separate from Windows Update. Yes, that's annoying and inconvenient but Microsoft is sticking with it.

Go to the Store, click on your account icon (top right) then choose 'Download and Updates'.



Then click on 'Check for updates'.

In Store | Settings you can opt to automatically download app updates and app licence details.



## WITH A NEW COMPUTER

New computers can be 'off the shelf' from a store, custom configured after making choices online or fully custom made from a local specialist.

## Windows 10 for Microsoft Office users

Getting Windows 10 - With a new computer

If you want Windows 10 Pro try to get it included with the new computer. You can upgrade from Windows 10 Home to Pro but the upgrade price will probably be higher than getting the right version in the first place.

### OFF THE SHELF

Any of the 'big box' stores have rows and rows of computers to choose from, mostly portable machines these days.

These make for quick and easy purchase but you don't get much choice about hardware (especially memory) and the type of Windows (usually a lower priced bundle).

Some retailers have a 'geek' or 'nerd' desk for upgrades and repairs to computers. You may be able to buy an off-the-shelf machine and get a memory and Windows upgrade before you leave the store.

### CUSTOM

When buying a custom build machine online, it's worth taking a moment to choose your Windows version for a new computer

The ordering web site will usually default to the cheapest version of Windows so the headline price is lower. But if you want features like Hyper-V, Remote Desktop hosting, Encrypting File System and BitLocker then you'll want to switch to Windows Pro. The 64-bit version is required for Hyper-V.

### CUSTOM BUILD

Around the world, there are small companies that will make a desktop computer to your specifications. They're usually more expensive but you'll get precisely what you want. Repairs should be easier because the people who put together the computer will be the same ones fixing or upgrading it.

These days the most common reason for going the custom made route is to select specialist hard drives or graphics boards. Gamers are especially focused on having the latest and greatest video cards.

Anyone interested in this level of hardware choice will presumably go for Windows 10 Pro 64-bit.

### OTHER OPTIONS

Since Windows sales are tightly linked to the matching hardware there isn't the range of money saving options as with Microsoft Office (we talk about them at length in [Office 2016: the real startup guide](#)).

## Windows 10 for Microsoft Office users

Getting Windows 10 - With a new computer

### RETAIL

Once the free upgrade offer is over, you'll be able to buy a Windows upgrade from most retail stores. It will cost more than the Microsoft direct upgrade options.

Definitely shop around for a good price.

The [Microsoft Store](#) usually has the highest prices going. By all means check there but you'll usually get a better deal elsewhere.

Ebay or similar sites should also have good deals but make sure you use a reputable merchant (i.e. many sales and high approval rating) since there's bound to be scams.

### SYSTEM BUILDER

If your computer doesn't have a Windows license (7 or 8) then you don't qualify for an upgrade.

That's where the 'System Builder' packs apply. A System Builder product lets you install on a 'bare' computer with no existing operating system (or no OS that Microsoft cares about!).

System Builder is also the choice if you want additional licenses for Windows 8 virtual machines.

There are Windows 10 Home and Windows 10 Pro versions of System Builder. You also have to choose 32-bit or 64-bit versions. As with all Windows products a little shopping around will get you a good discount on the suggested retail prices.

### VOLUME PURCHASES

Volume Licenses seem like they are limited to medium or large companies. The complexity of the options and rules is quite off-putting.

But you can save money buying Microsoft products starting with a purchase of just five licenses (which can be a mix of Windows, Office and other Microsoft software).

There are 'partners' who should help you navigate the rules and plans. You'll have to decide between a one-off purchase of software or 'Software Assurance' where future upgrades are included.

We talk about Volume Licensing at length in [Office 2016: the real startup guide](#).

## Windows 10 for Microsoft Office users

Getting Windows 10 - With a new computer

### DEVELOPERS

Microsoft Software Developer Network – MSDN is a high-end software service for, surprise, developers.

You pay an annual fee and get a wide range of Microsoft software for a relatively low cost but with license terms that limit their use. In the case of an MSDN subscription that's broadly development and testing.

There are various packages available MSDN Operating Systems, Professional, Test Professional, Premium and Ultimate. Only Premium and Ultimate come with Office licenses.

As you can imagine, MSDN is pricey with a high price in the first year but roughly 70% of the initial price for renewals. MSDN Operating Systems costs US\$1,115 (\$796 renewal) with the Ultimate edition an eye-watering US\$21,202 ('only' \$6,775 renewal).

For more details go to <http://msdn.microsoft.com> which will display the correct information for your country (if it's wrong go to the top right and select from the available countries).

Visual Studio with MSDN is available through some retailers like [Amazon](#) so it's worth checking around for some discount on the full price charged by Microsoft directly.

### CHARITIES

Microsoft has a long established system for helping charities with their software needs. It's part of the overall software volume licensing but at considerable discounts on the usual prices.

As with other volume licenses you have to buy 5 or more software licenses in the initial purchase but after that a single license can be purchased. You can combine Windows, Office and other Microsoft software.

As you'd expect the qualification criteria is very tough and vary by country. Charitable status recognized by the government / tax authorities is not, of itself, sufficient to get charity discounts from Microsoft. In the USA there's a [special list](#) of resellers authorized to sell Open License for Charities. The charity eligibility for some countries can be found [here](#).

If you can't find information for your country online you could try asking the Microsoft office in your country or a major volume license reseller.

## Windows 10 for Microsoft Office users

Getting Windows 10 - With a new computer

### TRANSFERRING WINDOWS

When you buy Windows installed on a new computer it is NOT transferable to another machine. Officially, you can't remove a hard drive with Windows and put it into another computer.

Windows OEM licenses (i.e. bought with a new computer) have always been non-transferable, but it's only in recent times that Microsoft has been able to enforce that restriction.

For all the major PC makers, the license details are embedded in the BIOS and Windows won't start fully if it can't find that authorization.

It's possible that some smaller 'corner store' computer makers won't use that system for their custom machines. Ask when purchasing.

If you do try moving a boot hard drive to another computer, Windows might start but then request activation. That happens because the software detects the large change in computer hardware. You may need to call Microsoft for an activation code which they may give if you explain that the computer failed and has been rebuilt.

### OFFICE COMPATIBILITY

Before you jump into Windows 10 it's worth asking if your current Microsoft Office will still work. In most cases it will.

According to Microsoft and our experience these versions are fully compatible:

- Office 2016 for Windows (naturally)
- Office 2013
- Office 2010
- Office 2007

It's possible that earlier versions of Office will also run on Windows 10 however there's likely to be some incompatibilities when using less common Office features.

For example, Office 2003 was marked by Microsoft as 'not compatible' with Windows 8 but with no further explanation. This means it's probably also true for Windows 10.

Microsoft has dropped their 'Compatibility Center' which listed programs and their compatibility with Windows.

## Windows 10 for Microsoft Office users

Getting Windows 10 - With a new computer

### ALTERNATIVE

You can try running Office 2003 or earlier versions on Windows and chance your luck.

A better solution is to run Office 2003 (or any 'extra' version of Office) in a virtual machine (VM). This maintains compatibility (because you can run the Windows version of your choice in the virtual machine) and keeps it isolated from other Office installs (ie avoids 'side-by-side' Office conflicts). We've been suggesting VM's for many years and Windows 8 Professional or Enterprise editions makes that option more accessible.

Windows Pro and Enterprise editions include Hyper-V, the virtual machine system. Or you can use VMWare Workstation.

Get or make a virtual machine with, say Windows XP then install Office 2003.

Later in this book we have [an entire chapter on Hyper/V](#) with step-by-step instructions on making a virtual machine with a version of Office installed.

# HARDWARE CHOICES / COMPATIBILITY

Let's look at the system requirements for Windows, firstly the fantasy land specs from Microsoft, then what to look for in the real world.

Any computer with a Windows 7 or 8 compatible logo will be compatible with Windows 10. But 'compatible' is not the same thing as operating tolerably on a daily basis. A compatible computer can have a slow speed chip and low memory to make it sluggish when running.

Microsoft's self-serving recommendations for Windows 10 are the same as Windows 8:

- 1 GHz or faster processor
- 1 GB RAM (32-bit) or 2 GB RAM (64-bit)
- 16 GB available hard disk space (32-bit) or 20 GB (64-bit)
- DirectX 9 graphics device with WDDM 1.0 or higher driver
- 800 x 600 display.

As usual, these Microsoft recommendations are very low and intended to fool people into buying Windows for as many computers as possible.

Here's a more realistic minimum specification:

- 3Ghz or faster processor
- At the very least 2GB RAM (32-bit) or 4GB RAM (64-bit) with the ability to add more memory later.
  - 6GB minimum if running Hyper-V.
- At least 200GB of hard drive space
- DirectX 10 or higher graphics device preferred, though v9 is sufficient for most people.
- Screen resolution of at least 1366 x 768 to use the Snap feature.
- TPM Module, preferably TPM 2.0. Required for Bitlocker.

In practice, almost any new computer bought in 2015 will exceed the above specifications. It's hard to find a sub-3GHz computer, 4GB of RAM is almost standard, 1024x768 is considered tiny and hard disk sizes are usually measured by the terabyte!

## Windows 10 for Microsoft Office users

### Hardware choices / Compatibility - USB 3

There are some additional requirements to consider.

## MEMORY

For most people, a computer with 4GB of RAM is enough to run Windows and Office plus sundry other programs.

Running virtual machines with Hyper-V or VMware Workstation requires more RAM. You can squeeze a virtual machine into 4GB of physical memory but it's more likely to slow down as available memory is limited.

If you're considering using Hyper-V (our recommended way to run multiple versions of Office) then you'll need Windows Pro or Enterprise, 64-bit edition and at least 6GB of RAM.

For more than one VM running at the same time, make that 8GB or 12GB.

If you don't want to pay for the extra memory, at least make sure there are spare memory slots for future expansion.

## SLAT

[Hyper-V](#) requires SLAT (Second Level Address Translation) compatibility in the computer. While most mid to high level computers will have this, it's best to make sure before buying.

For Intel chips look for the "Extended Page Tables (EPT)" feature. On AMD chipped machines it's called "Nested Page Tables (NPT)" within "Rapid Virtualization Indexing (RVI)".

## USB 3

USB 3 is the much faster version of the common USB 2 sockets and devices we're used to. It's supported natively in Windows 10 (you had to add drivers to earlier Windows 7 or before).

USB 3 can transfer data to and from external drives up to 10 times faster than USB 2. USB 3's maximum rate 635 MB per second while USB 2 could only manage 60MB/s.

In addition, USB 3 has more power output, making it more suitable for recharging devices.

USB 3 plugs are compatible with USB 2 sockets so you can plug a USB 3 device into a USB 2 socket and it will work, but not at the higher speeds.

## Windows 10 for Microsoft Office users

Hardware choices / Compatibility - Hard Drive

Most USB devices don't need the extra speed or power of USB 3. Things like keyboard, mouse, speakers, sync to mobile devices etc are likely to continue using USB 2.

Most new computers have at least one USB 3 socket. You should make sure that any new machine you buy has at least one USB 3 socket.

If you're buying an external hard drive or dock we suggest buying a USB 3 model (which should cost about the same or only a little more). Even if you don't have USB 3 on your computer, you will in the future and then the faster external drive will make a lot of difference.

There's more detail on USB 3 and external hard drives in the chapter about [Storage Spaces](#).

## TOUCH SCREEN

Most, but not all, modern touch screen computers or displays will work with Windows 10. Some of the older ones that are officially compatible won't work well.

The incompatible touch screens usually have the problem of being too small for Windows 10. Windows Snap feature requires a screen at least 1366 x 768 resolution and some Win7 designed devices don't match that.

The other problem is the edges. Some of the older but officially compatible touch screens have trouble detecting touches around the edge of the screen. That's a problem for Windows 10 which relies on touch actions along the screen edge.

For desktop computers, there's plenty of touch-screens on the market. If you're looking to upgrade your screen, consider getting a 'multi-touch' screen.

## HARD DRIVE

A standard SATA hard drive is enough for most people. The main / boot drive should be 500GB or 1TB.

Windows Storage Spaces feature is a good way to expand your disk space with more flexibility than in the past. However, this feature won't work on the C drive (ie main boot drive).

This runs counter to the current hardware practice of installing a single large drive (1TB or larger) that stores everything.

## Windows 10 for Microsoft Office users

Hardware choices / Compatibility - Hard Drive

The arrival of fast external drive links (USB 3 and eSATA) plus Storage Spaces means there's likely to be a move towards a smaller, faster C drive plus extra drives (internal and external) for storing most data.

### SOLID STATE DRIVES

Solid State Drives (SSD) are faster and power saving drives that are now less expensive and more available, but are they worth the trouble for Office users?

SSD are much faster to read and write data than standard drives. That's because they have no moving parts, unlike traditional hard drives with spinning platters. SSD's are at least double the speed of normal drives for regular (random access) uses.

SSD's also use less power and are more resilient to sharp movements and knocks than a regular drive.

They are ideal for portable computers and tablets (in fact most tablets, including iPads and Windows models use some form of SSD) due to their power savings over regular drives. That means your laptop can run longer on the same battery charge. In our experience the power savings are not as spectacular as the early promises. Maybe 10% or 20% more at best in our trials. If you're hoping for many hours of extra use, you may be disappointed.

Very high performance servers also use SSD's for applications where every tiny fraction of a second counts.

On desktop computers, speed is the main advantage.

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*Using an SSD as your boot drive plus storage for user files, applications and application data will make your computer fly along at speeds you previously only dreamed about.*

---

The downside is that SSD's are a lot more expensive than regular hard drives and come in smaller sizes. You trade the speed and power advantages for higher cost and less main drive storage.

Happily, there's a workaround available on desktop computers for those who like tinkering with their machine. We'll describe it later in this chapter.

## Windows 10 for Microsoft Office users

Hardware choices / Compatibility - Hard Drive

### PRICES

Solid State Drives come in smaller sizes and with higher prices than standard drives. However, it's a rapidly moving and competitive market so the prices are dropping and available sizes rising.

Note: we're talking here about pure SSD drives, not the Hybrid (SSD+HDD) drives available that mix a traditional drive with a large SSD cache.

You'll be trading size for speed. If you're accustomed to a 320GB or 500GB drive it can be hard to squeeze your digital life into a 'mere' 128GB.

Thankfully Microsoft Office doesn't take up a lot of space (relatively speaking).

Make sure the SSD is compatible with your computer. You don't have to buy the SSD from the original computer maker, in fact you'll pay more buying from them. But you can check the brand and specifications of the SSD's available from the computer maker then find the same thing for a better price elsewhere.

There are SSD packages that include migration tools to help you transfer data from your old drive to the new one. They might not be worth the extra money especially for anyone familiar with the innards of their computer. We prefer to install Windows again on the new drive, install only the programs and data you need. This will give you a more efficient setup without the 'baggage' from the old drive and using less disk space. Admittedly, it requires more work and time.

Note: before any migration between drives, make sure the source drive doesn't have Bitlocker enabled.

### OFFICE BENEFITS

Outlook is the main beneficiary of a solid state drive. That's to be expected since Outlook is really a large database application which runs better if it can get information from the hard drive faster.

The 'instant' search option in Outlook 2007-2016 still isn't 'instant' but it's a lot faster than on a regular drive. Switching between Outlook folders is also more responsive.

For Word, Excel and PowerPoint there's less direct speed improvements. The speed of loading and saving documents is faster but most of the time the improvement isn't noticeable. It is only for very large documents (or large Access databases) that you may notice the SSD speed advantage.

## Windows 10 for Microsoft Office users

Hardware choices / Compatibility - Hard Drive

We definitely noticed a vast speed up in Windows Explorer display, including Open and Save dialogs in Office. Instead of waiting for files and folders to appear, a file list appears in a flash – just like it's supposed to <sigh>. Navigating around folders is much faster and easier. This SSD advantage is worth the extra price in our view.

Of course there are also the general advantages of a Solid State Drive. Windows startup is faster and transition to/from hibernation or sleep modes is a lot faster with SSD.

For regular Outlook users or people with large documents/databases, there's a case for switching to Solid State Drives on portable computers.

It doesn't matter which version of Office you use with an SSD.

### SSD ON A DESKTOP COMPUTER

On a desktop computer, having a Solid State Drive C can speed up your computer a lot. The problem is that SSD's come in smaller sizes than regular drives so you need to move your data around so the smaller drive C is roomy enough. In most computers there's a single hard drive 'C' and that's what we're assuming you have for this section.

In short, we suggest replacing your existing drive C (a traditional hard drive) with an SSD. The old drive C (the 'normal' drive) becomes Drive D and is the storage for the Public folders and other folders that are too large for the new, smaller, SSD boot drive.

On the main desktop computer used to write this ebook, Drive C is a 128GB SSD which uses about 90GB of that space (ie plenty of free space). Most of the music, pictures, videos and virtual machines (another 900GB in this case) are on a 2TB Drive D.

This configuration, with Drive C having Windows, apps and main data only, allows other drives to be combined using the Storage Spaces feature. (Storage Spaces doesn't work with the boot Drive C).

This is an advanced tip for people comfortable with tinkering about on their computers – both hardware and software.

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*Since the exact steps depend on your particular computer, we'll only lay out general guidance that you can apply to your circumstance.*

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## Windows 10 for Microsoft Office users

Hardware choices / Compatibility - Hard Drive

Check the space used by your existing computer's C drive to see what size SSD you'll need. Right-click on the following folders to see the amount of space used (Properties | General) by each of these locations:

- Windows
- Each user on the computer in the \Users folder.
- The \Users\Public folder

The total of all those plus, say 10%, should be roughly the same as total space used on Drive C: . If the total you calculate and the used capacity on C: are greatly different you'll have to look around the drive for other folders that are taking up a lot of space.

Your new SSD drive needs to be at least large enough for all the files in the folders listed above (except perhaps Public folders) plus a generous margin for expansion, errors in your estimate. At least 20GB of extra space.

Make a full backup of your existing Drive C that includes boot sectors etc. You want a backup that will restore your Drive C make to the original drive in case things go badly wrong.

Ensure you have all the install disks/files plus serial numbers for Windows 8 and other software. You'll need this because you'll be reinstalling all your software, including Windows, onto the new drive.

Test your boot CD for Windows to make sure you can boot directly to the CD/DVD for reinstallation of Windows.

---

*There are backup/restore programs like Norton Ghost that purport to let you restore a Windows system drive onto another hard drive than the original source. You're welcome to try that faster option if you wish. Personally we've never had much success with that approach and prefer the longer way.*

---

When you're sure you have all the backups and info you need time to open up your computer. Install the SSD into the computer and switch the cables from the existing hard drive (the old C drive) to the SSD. Then put a second set of connection cables (probably lying unused in the computer) into the original hard drive. Switching the cables this way makes the SSD the boot drive C and the older drive becomes drive D.

Reboot the computer with the Windows boot DVD in the optical drive. You should be able to start an installation of Windows from the DVD, just as you did in the test.

## Windows 10 for Microsoft Office users

Hardware choices / Compatibility - Hard Drive

Install Windows, selecting the new SSD drive as the new install drive. Be very careful to NOT select the old hard drive because Windows installation will erase the drive. It's usually easy to tell the different drives apart if you look at the sizes.

If you've bought Windows pre-installed on the computer, switching to another hard drive may stop Windows activation. The replacement drive will probably be detected as an entirely 'new' computer requiring fresh activation and the purchase of a new license for Windows. If you strike a problem, call the Microsoft support line for activation issues, tell them you have the same computer with only a *replacement* drive. No guarantees but past experience is that you'll get a new activation code if explained in that way.

After installing Windows and all the applications there's a few more steps to leave room on the new SSD C:.

Make sure Hidden Files and Folders is turned on in Explorer. This will ensure you copy/move all the necessary files.

Your new Drive D is the old boot drive. It will have all the old C drive content including the My Documents and Public folders. This makes it easy to copy files from the old drive to the new SSD.

Copy files back to 'My Documents' folders, now on the faster SSD C:.

By default, Windows puts the Public folders at c:\Users\Public but with the limited space on the SSD you should move it to Drive D:

To change the location of Public folders use [Regedit](#) to change

```
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\
Windows NT\CurrentVersion\ProfileList
```

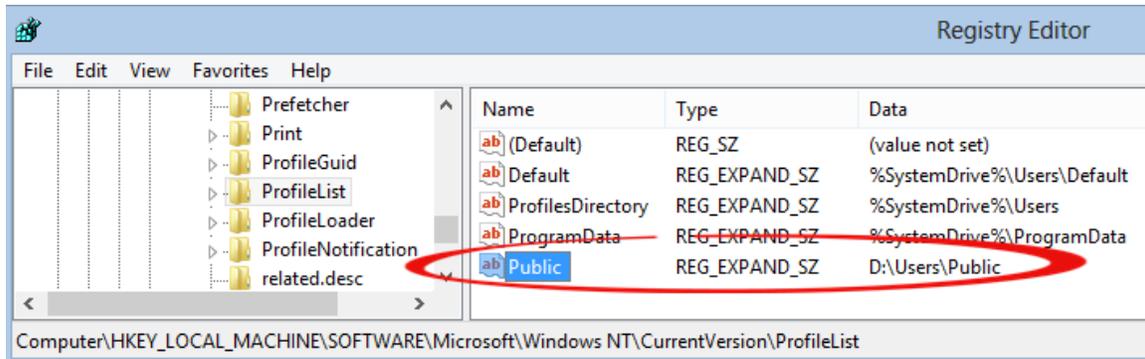
Key: Public

Data: change to new Public folders location eg D:\Public or  
D:\Users\Public

The latter should use the existing Public folders from the old C drive.

# Windows 10 for Microsoft Office users

## Hardware choices / Compatibility - Hard Drive



Reboot the computer after the change then, if necessary, move the old Public files to the new location.

There's an alternative way to do this involving an NTFS redirection from `c:\Users\Public` but the registry change should be sufficient.

If your 'My' folders like 'My Music' and 'My Pictures' take up a lot of space you might consider moving them to the 'Public' folder equivalent to leave more space on the SSD C:.

Drive D, as the previous boot drive, will have some now unnecessary folders like `\Windows`. that you can delete once you're sure the

MAKE SURE DEFRAG IS OFF.

It's widely reported that Windows will adjust its settings to deal with a Solid State Drive. For the most part that seems true.

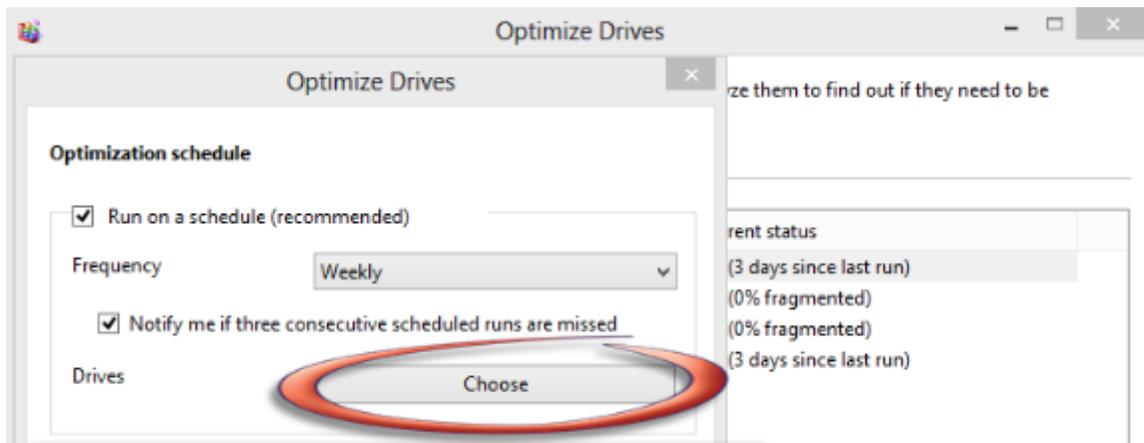
Windows is supposed to disable Disk Defragmentation for SSD's. But in some of our trials Defrag was still scheduled. Defrag isn't necessary with an SSD, in fact it can reduce the life of the drive.

You should ensure that Disk Defragmentation is disabled for Solid State Drives. Right-click on any hard drive in Explorer, choose Properties | Tools |

## Windows 10 for Microsoft Office users

Hardware choices / Compatibility - Hard Drive

Optimize | Change settings | Choose drives to see the list of hard drives and which are selected for optimization.



Make sure that any SSD is NOT checked. The above is the default we found on each computer with an SSD. It's possible that the Optimization utility ignores SSD's when it runs but nothing in Windows supports that optimistic conclusion.

# CONFIGURE

You've installed Windows 10 and your work is done, right? Sorry – not quite. The most important part of the installation is the personal configuration that follows and that's the subject of this chapter.

The Windows 10 default settings are based on what Microsoft thinks is best for everyone and, sometimes, their marketing agenda.

Some of the settings are, in our view, made so simple that it makes Windows more obscure and difficult to understand.

This isn't intended to be a full list of changes and certainly not a compulsory list. You can pick and choose which ones appeal to you.

## TWO SETTINGS MENUS

Windows 10 still has the incredibly annoying and confusing split world of settings. There's the Control Panel that we're all used to plus the modern interface PC Settings. The two systems have some overlap while other controls are only available in one place, leaving users to jump around trying to find the one they need.

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*The Anniversary release continues the migration of features to the new Settings menus. There's still too much mixing between Control Panel and the new Settings, even within the same feature!*

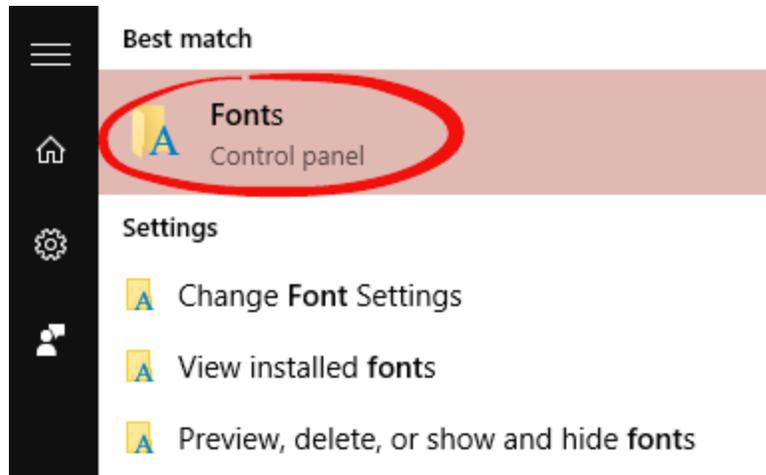
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To add to customer frustration, Windows 10 doesn't have one place where you can access both Control Panel and Settings. The Windows 8 'Charms' menu had that feature and while Charms has been dropped, there's no direct replacement either.

A fastest way to any setting you want is search. Press the  key then start typing your search, for example:

## Windows 10 for Microsoft Office users

Configure - Win + I = Settings Pane



That will show the Control Panel applet or Setting page faster than clicking through the menus.

As you can see, Fonts is on the Control Panel. Click on that link to open Fonts control directly.

Note, the **Win** + W shortcut is now used by Windows Ink.

The Settings dialog is available from the 'cogs' icon on the Start Menu.



## WIN + I = SETTINGS PANE

A short interlude to mention an important Windows keyboard shortcut.



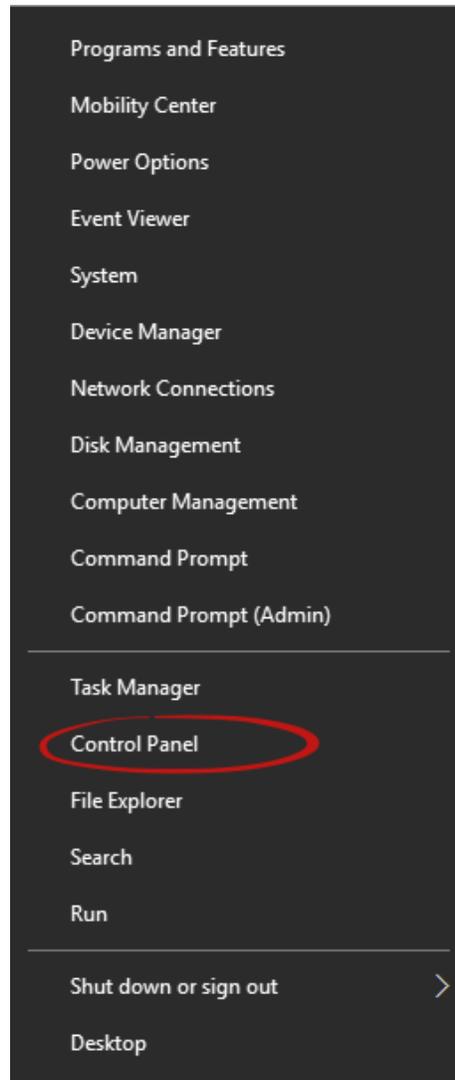
## Windows 10 for Microsoft Office users

### Configure - Fast Control Panel

That's holding down the Windows key and pressing I – upper or lower case. You'll often want to reach the Settings pane in Windows 10. You can do that from the Start Menu or the Win + I shortcut.

## FAST CONTROL PANEL

There's no equivalent shortcut to the Control Panel. The fastest option we use is to right-click on the Start Menu button to see the Administration Menu.



As you can see, there's a link to Control Panel. Also other geeky goodness like Command Prompt (plus the same with Admin privileges), Task Manager, Event Viewer and Computer Management.

# Windows 10 for Microsoft Office users

Configure - Search

## SEARCH

Microsoft really wants you to use their Bing search service and not rivals (mostly Google). Windows 10 'out of the box' is rigged to push you to Bing even for searches that don't really need it.

Here's how to make Windows 10 searches more focused, more private and take up less space.

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*We've had a lot of questions about Windows 10 searches, especially the space it takes on the taskbar. So we've put this section early in the chapter.*

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## ON TASKBAR

The Windows 10 default taskbar has a search box that takes up a lot of valuable space.

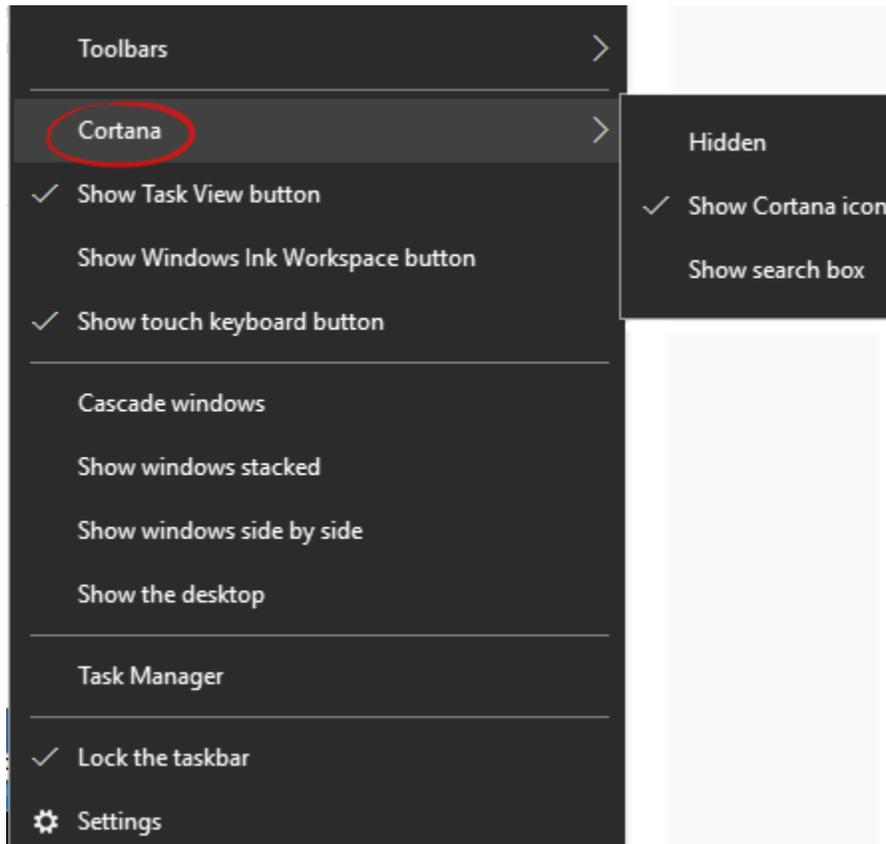


But you can get that space back with a few clicks. The taskbar field isn't really necessary because there's a fast way to start a search; press the Windows key and type your search.

## Windows 10 for Microsoft Office users

### Configure - Search

Right-click on the search box (or any empty space on the taskbar) and choose Cortana.



Your options are:

- **Hidden** – removes search from the taskbar entirely. The 'Win + type' shortcut still works.
- **Show Cortana icon** – shows just an icon.  

- **Show search box** – the Windows 10 default.

---

*On the same 'right-click' menu is 'Show Task View button' that you can remove. Task View (which shows a thumbnail of all open programs) also has a shortcut key: Win + Tab.*

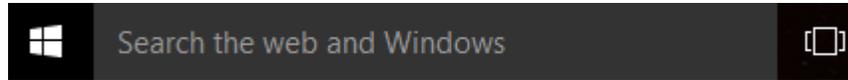
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# Windows 10 for Microsoft Office users

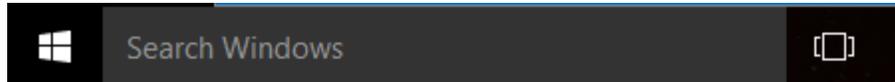
Configure - Search

## SEARCH COMPUTER ONLY

Windows 10 is originally set to search both your computer and the web generally aka 'Search the web and Windows'.



Or just search your computer 'Search Windows', this will search your documents, files, programs and settings only.



That's what many people prefer – doing web searches separately in the browser of their choice (Chrome, Firefox etc). It also means that your local computer searches aren't unnecessarily sent to Microsoft.

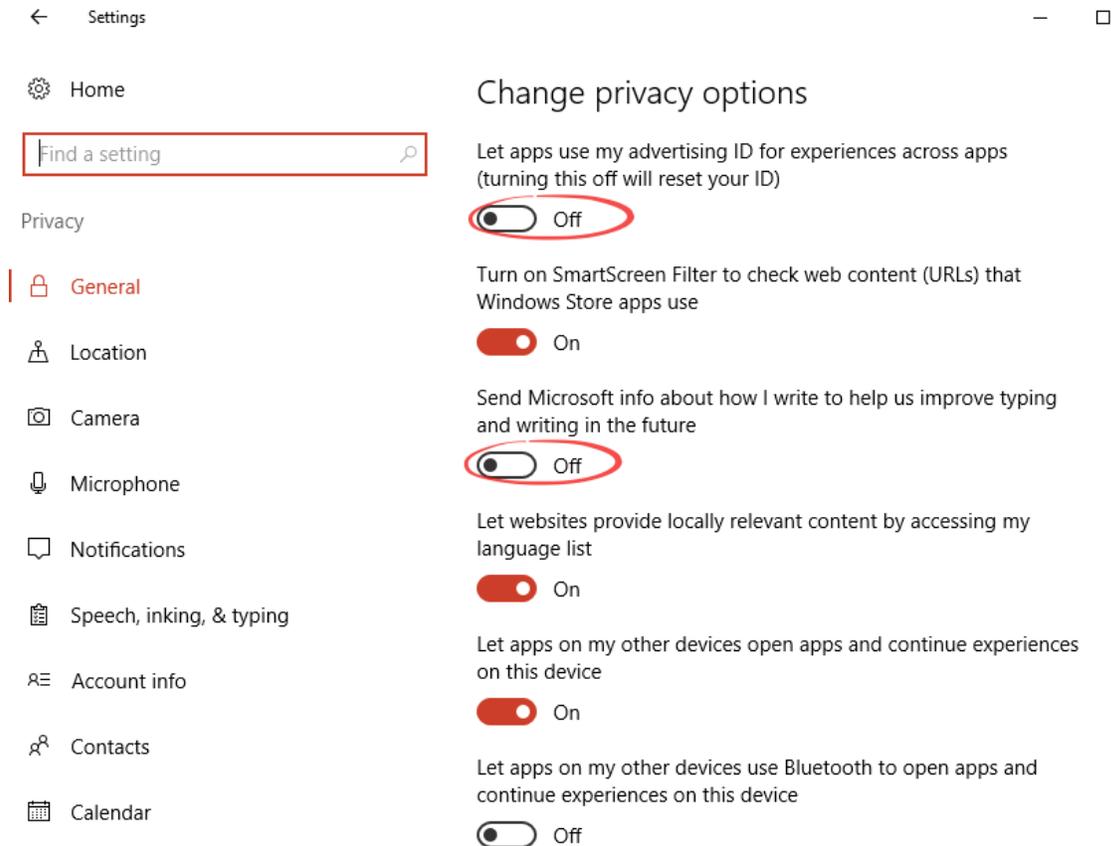
After you've turned that choice 'off' the search box changes title to 'Search Windows'.

# Windows 10 for Microsoft Office users

Configure - Search

## MORE PRIVACY

Near the bottom of the Search settings is a privacy link which takes you to Settings | Privacy | General.



Most privacy options are a balance between keeping your information on your computer and, by sending info to others, improving the way the computer works. Sometimes the improvement to the software benefits the developer or advertiser, not the customer. Microsoft (and other companies) don't have a spotless track record for keeping customer information private.

These suggested settings are based on our view of that balance of usefulness vs privacy.

**Let app use my advertising ID.** – the advertising ID is like a web cookie. Like a cookie, it may have uses for customers but it seems more useful to advertisers. We turn this OFF.

**Turn on SmartScreen** – Smartscreen can report web links you use to Microsoft but it's also a good protection against 'bad' web sites that might try to infect your computer. On balance, we leave this ON.

**Send Microsoft info** – it might be nice to contribute info to help make Windows better, but there's too great a risk to your personal information

# Windows 10 for Microsoft Office users

## Configure - Date

when your typing/writing is sent to any company (let alone Microsoft). Definitely turn OFF.

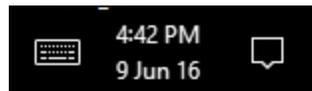
**Let websites provide locally relevant content by accessing my local language list** - there doesn't seem to be any information sent from your computer so leave this ON.

## DATE

Microsoft Office picks up the Windows Region settings to work out how to display date and time. It controls the date display in Outlook. It is also the default display in other Office programs but can be overridden in individual cases.

The same settings can be used to parse imported date/time info into Excel. If you type text into a cell that looks like a date, Excel will convert it into a date format and display it using the Windows Short Date format.

The most obvious effect of formatting is on the bottom left of the taskbar where the time is shown.



I prefer to show the day of the week and month in text.

The month in text is to save confusion between m/d/y and d/m/y formats, both of which are used globally. For example is 12/2/13 - 12 February 2013 or 2 December 2013? Better to show 12 Feb 13 or 2 Dec 13 which take up about the same space and are very clear about the exact date. Even in non-English speaking countries, the English month abbreviations are usually known.

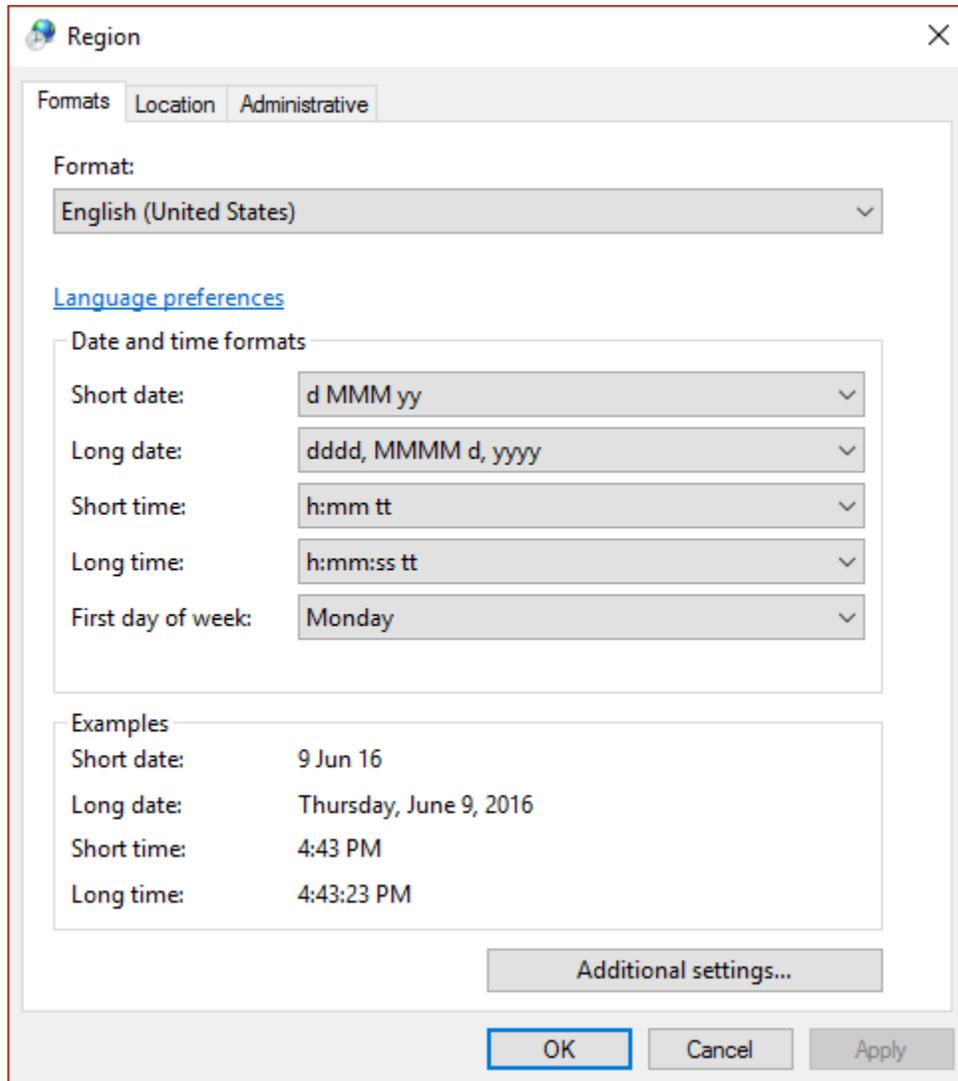
Showing the day of the week helps those of us in advancing years that have trouble with such details <g>.

So we'll start with changing the Region settings so you get a date/time display that suits you.

## Windows 10 for Microsoft Office users

### Configure - Date

Go to Control Panel | Region | Formats to see the current settings. This hasn't changed from Windows 8 or even earlier versions of Windows. These are the default US settings:



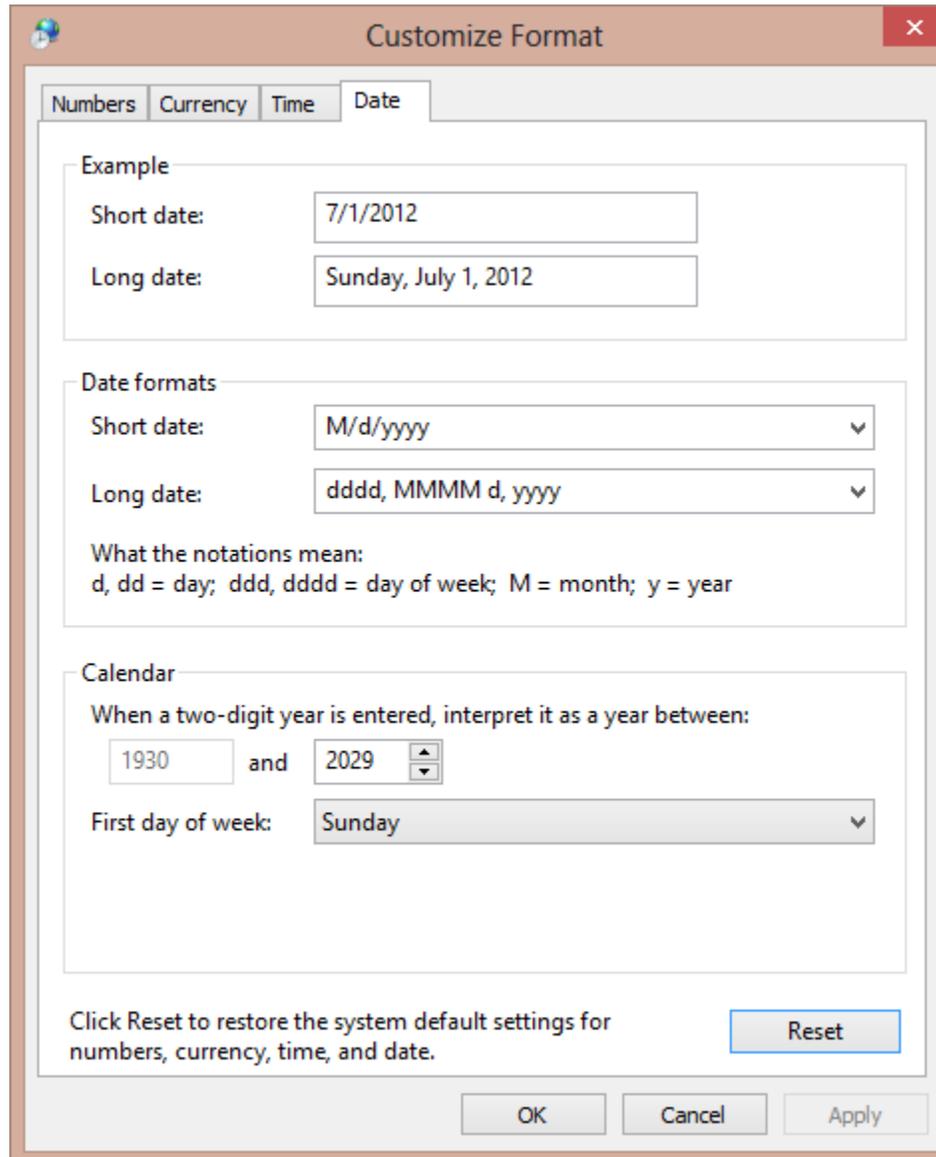
There are pull-down options that you can use to change each of the formats, however Murphy's Law says that the options provided won't be enough (except for 'First day of week').

**First day of week** – defaults to Sunday for reasons unknown. In all my years of tweaking Windows/Office, people always change this to 'Monday' once they realise the option is there.

## Windows 10 for Microsoft Office users

### Configure - Date

For the rest, click on Additional settings then Date.



Change the short date format using the text formatting characters.

**d** – day number with no leading zero e.g. 1

**dd** – day number with leading zero e.g. 01

**ddd** – day name in three letters e.g. Sun, Mon etc. using the current Windows language setting.

**dddd** – full day name e.g. Sunday, Monday etc. using the current Windows language setting.

**M** – month number with no leading zero e.g. 5

**MM** – month number with leading zero e.g. 05

## Windows 10 for Microsoft Office users

### Configure - Time

**MMM** – month name in three letters e.g. Sep, Oct etc. using the current Windows language setting.

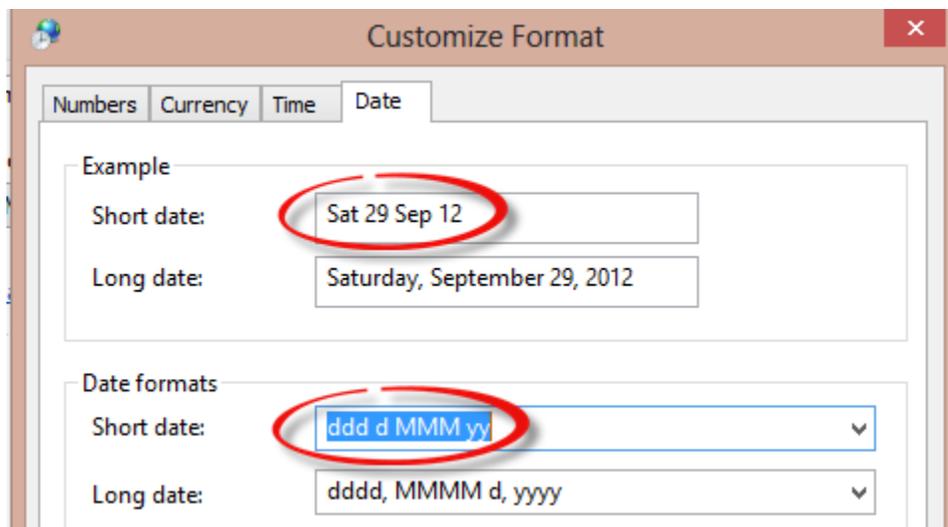
**MMMM** - full month name e.g. September, October etc. using the current Windows language setting.

**y** – last two digits of year e.g. 13

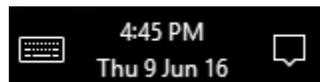
**yyyy** – four digit year e.g. 2013

The separator character between the date elements can be anything you like but is usually a slash, hyphen or space.

My preferred short date format is d MMM yy or ddd d MMM yy - because it is short but the date is clear. The second choice shows the day of week.



Make your change then click 'Apply' to see the example change in the field in that window but also on the taskbar.



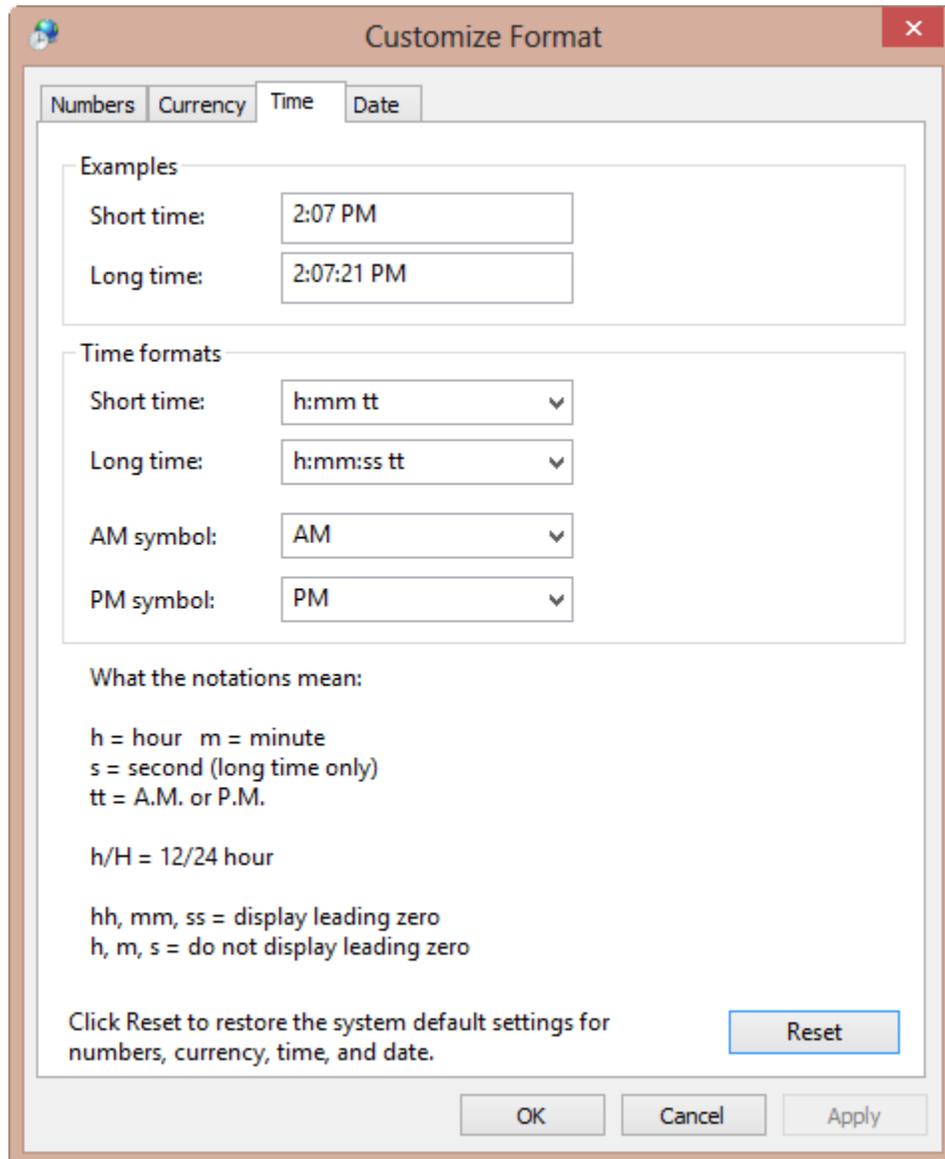
## TIME

Go to Control Panel | Region | Formats and if those options don't suit, click on Additional Settings | Time

## Windows 10 for Microsoft Office users

### Configure - Time

Making changes is just like with Date and the time formatting options are shown in the dialog.



The formatting choices worth noting

**h** – 12 hour clock e.g. 11AM 3PM

**H** – 24 hour 'military' clock e.g. 11AM 15

**ss** – if you want to add seconds to the display. Windows 8 taskbar will not show the seconds even if you set them here.

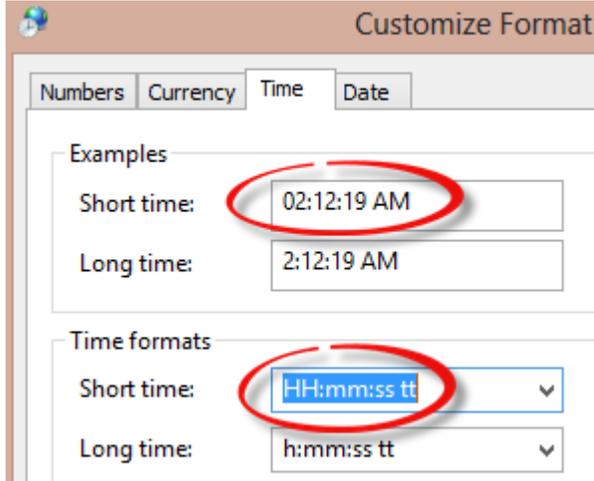
**t** - shows A or P upper case only.

**tt** – shows AM or PM upper case only.

# Windows 10 for Microsoft Office users

## Configure - Time

If you want 'military' time plus AM/PM use HH:mm:ss tt



in the taskbar

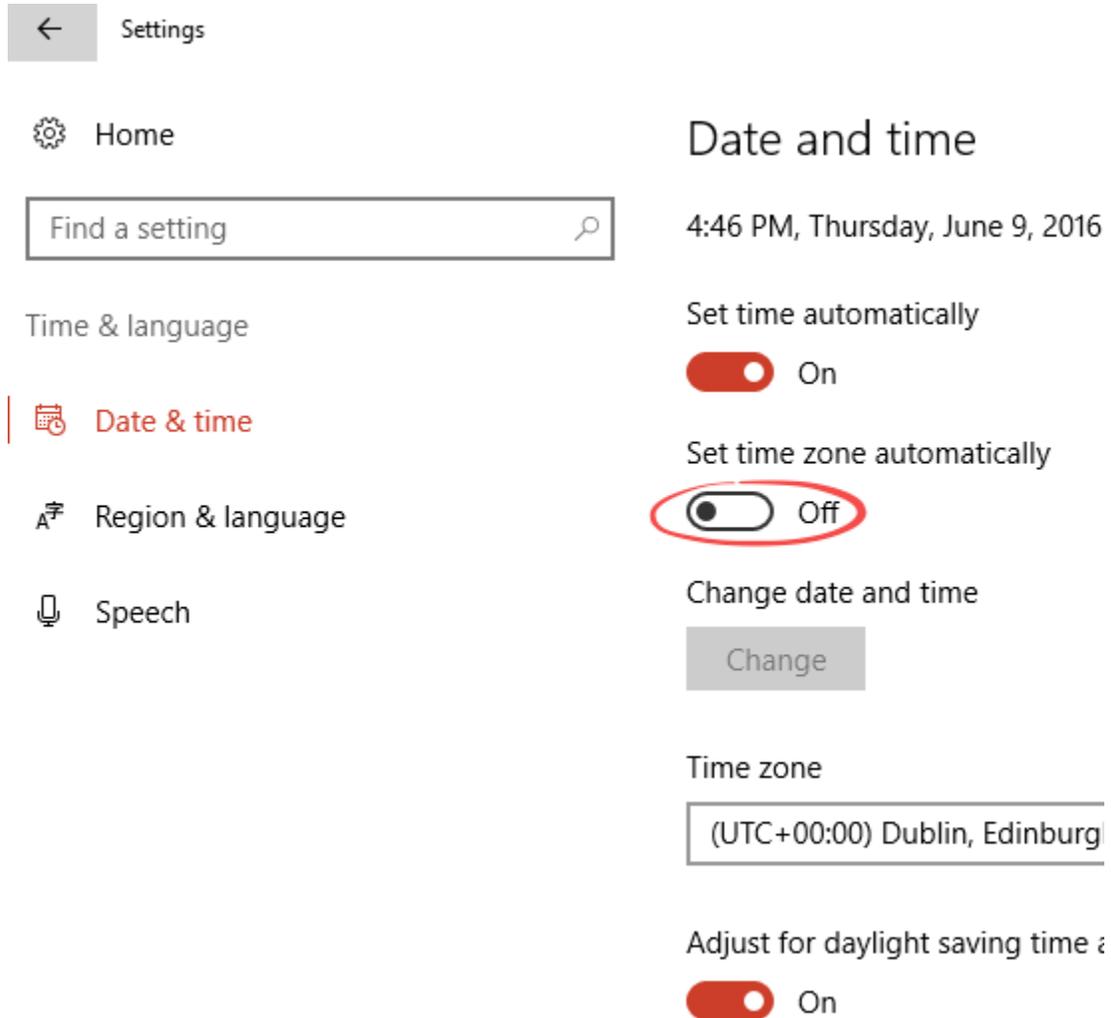


# Windows 10 for Microsoft Office users

## Configure - Time

### TIME ZONE CHANGE

Windows can (from November 2015) automatically change the Time Zone setting based on your current location. Settings | Time & Language | Date & time | Set time zone automatically.



We have mixed feelings about this option, which defaults on.

Some people prefer to keep their laptop/tablet on its 'home' time zone when travelling. The clock in the bottom right is an easy reference to the time at home (while your watch or phone has the local time).

Microsoft Outlook has never had a good reputation when it comes to changes of time zones by the computer. Too often, Outlook has ended up with 'All Day' events spanning multiple days because of changes to the time zone offset. These problems have been fixed but, if you've ever spent tedious hours manually fixing the Outlook calendar, you may still be wary.

# Windows 10 for Microsoft Office users

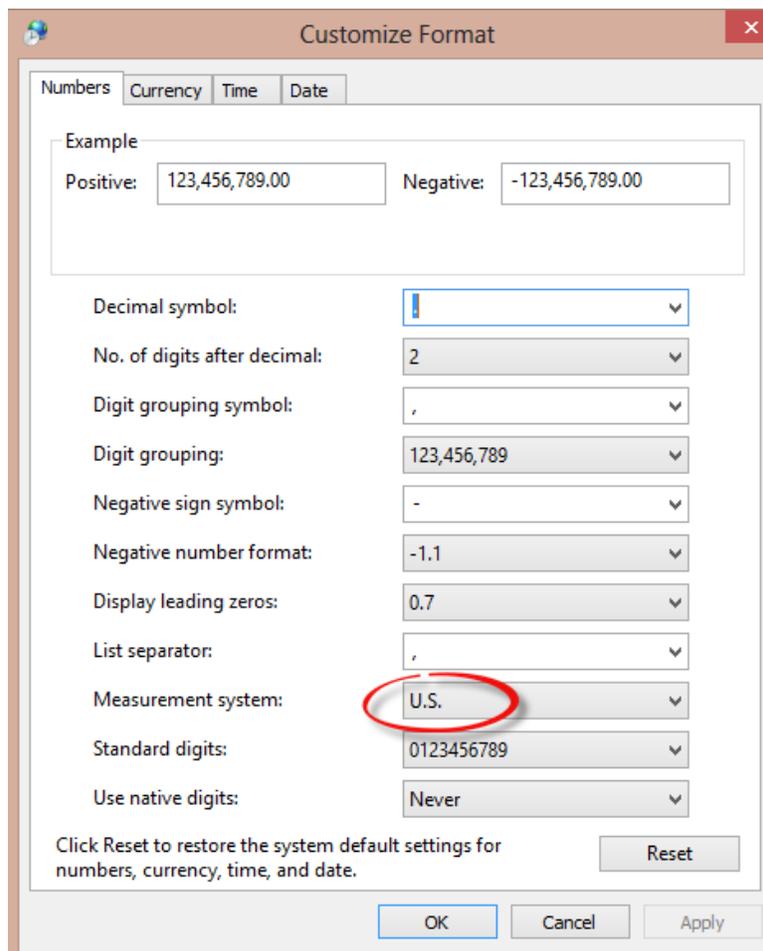
## Configure - Measurement System

It's not clear how Windows determines your location. The time zone option does not require Settings | Privacy | Location to be set on, so it seems to be using some other means. Possibly the IP address of the current Internet access. There's a possibility that 'Set time zone automatically' will make a mistake if you use a VPN service to link to the Internet via another location.

## MEASUREMENT SYSTEM

Windows will select the metric or US measurement system that it thinks appropriate for your regional choice. Microsoft Office will pick up the Windows settings and use them as defaults.

You can see that choice at Control Panel | Region | Formats | Additional Settings | Numbers.



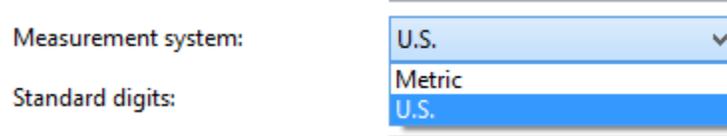
Sometimes that selection doesn't suit. Some UK users prefer US/imperial even though the country is officially metric. On the other hand, some US customers are moving to the metric system. You might want to use the

# Windows 10 for Microsoft Office users

## Configure - Explorer Options

measurement system of your major client in another country – eg Canadian users might prefer to use US/imperial to match ‘south of the border’.

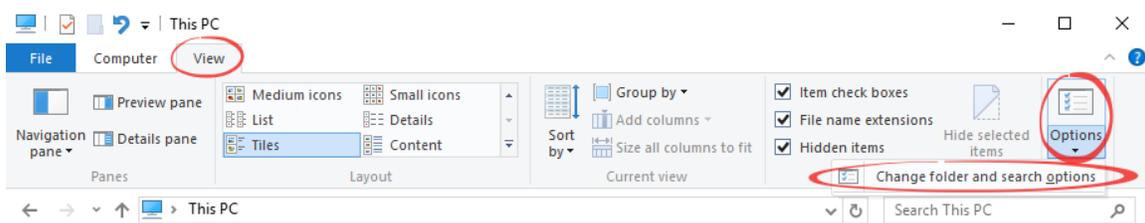
Whatever the reason, you can change the Windows setting here.



Most, well made, programs should pick up the Windows default as its initial setting. Ideally each program should have its own option to override that. Sadly, Microsoft Office isn't one of those programs and the Windows setting rules.

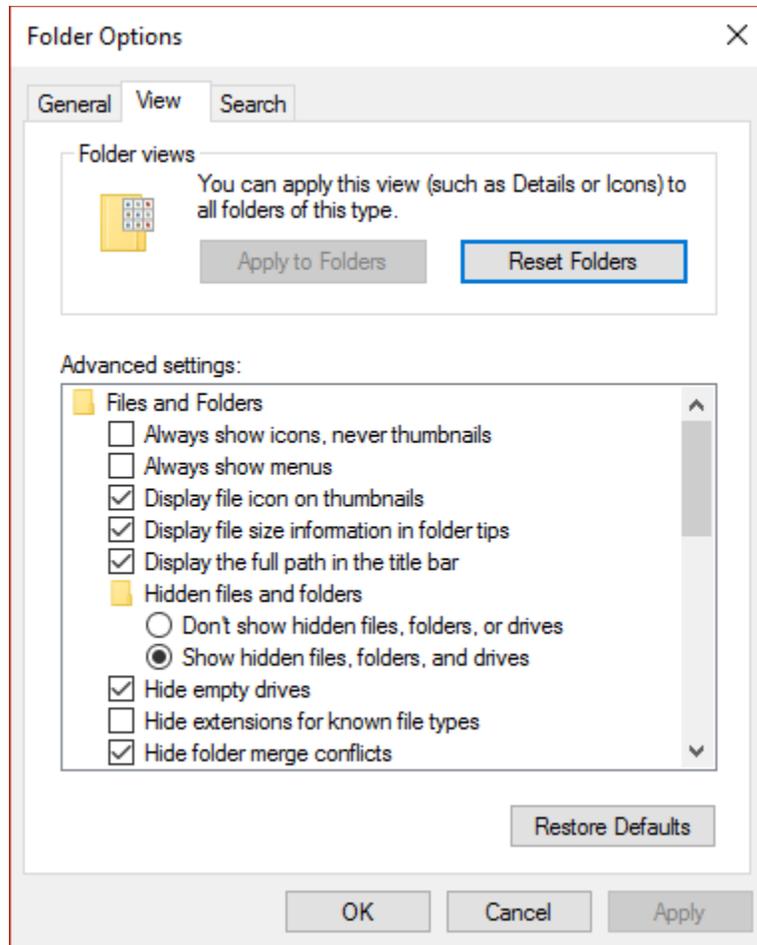
## EXPLORER OPTIONS

There are some defaults we like to change in Explorer from View | Options | Change folder and search options | View | Options | Change folder and search options



# Windows 10 for Microsoft Office users

## Configure - Explorer Options



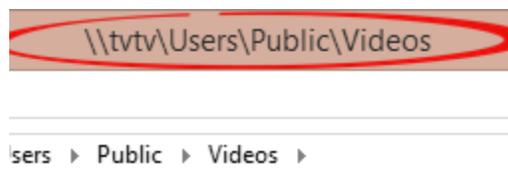
The options you might consider changing are:

### **Display the full path in the title bar**

The default for Explorer is to only show the name of the current folder.



Check this box to show the full path instead.



Showing the full path makes it easier to know what Explorer is displaying. That's useful when you can be working with similar named folders in different locations or computers.

# Windows 10 for Microsoft Office users

## Configure - Explorer Options

### Show hidden files, folders and drives

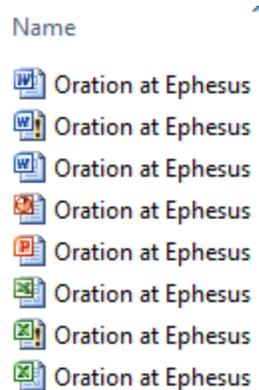
A choice for computer nerds. Hidden files and folders are usually hidden for a good reason and regular users don't need to access them.

But there are times when the hidden needs to be revealed and then this option is worth keeping in mind.

### Hide file extensions for known file types

Microsoft thinks that it's easier for customer if they hide as much 'technical' detail as possible. Sadly they go overboard and obscure important details.

File extensions (.docx .txt .pdf ) are often important and vital details to know, yet Microsoft prefer to hide them. Here is a list of Office documents using the default Explorer view.

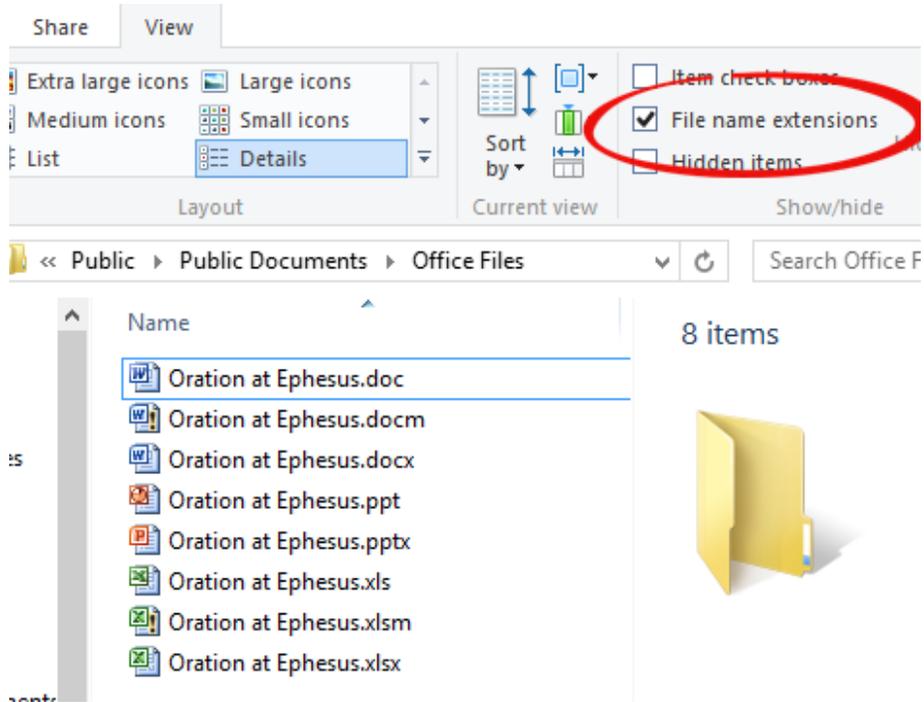


There are eight files, apparently with the same name. A close look at the small icons tells you that they'll open in Word, PowerPoint or Excel.

UNcheck the option to show the file extensions. There's also a check box on the View ribbon.

# Windows 10 for Microsoft Office users

## Configure - Explorer Options



With the file extensions revealed, you can see what type of file you're really dealing with.

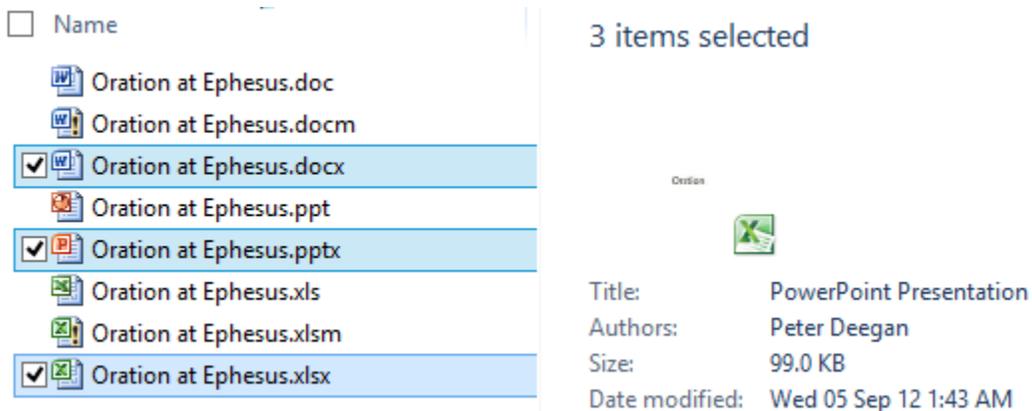
### Restore previous folder windows at logon

When Windows starts, it usually resets Explorer and 'forgets' the previously opened windows. That means you have to open Explorer and the windows to the various locations you were looking at before.

Click this option to reopen the Explorer windows were you left off.

### Use check boxes to select items

Instead of selecting files using Shift or Ctrl plus the mouse you can have check boxes.



## Windows 10 for Microsoft Office users

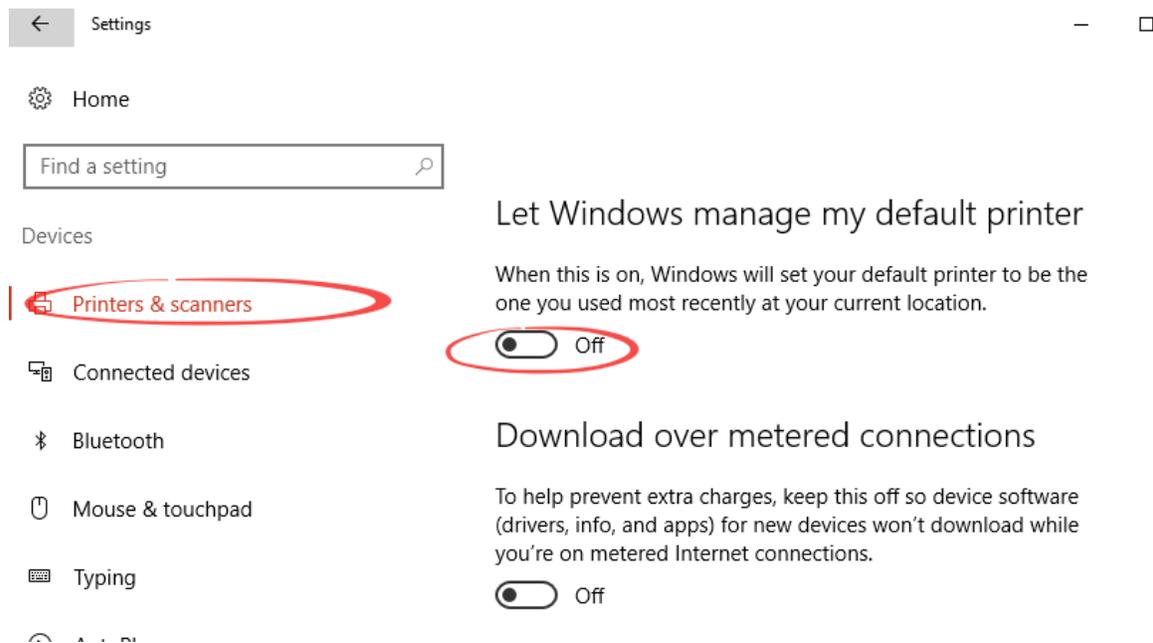
Configure - Show all Control Panel items

Click the check boxes to choose files or tick the box at the top to select them all.

After selection you can move, copy, delete or take any other actions on the selected files.

## DEFAULT PRINTER

A new option in the November 2015 release is Settings | Printer & scanners | Let Windows manage my default printer.



The default for this option is ON and that changes the long standing way Windows behaves. Windows tries to choose a default printer based on your location. It should, over time, be able to select the right printer at say home and work.

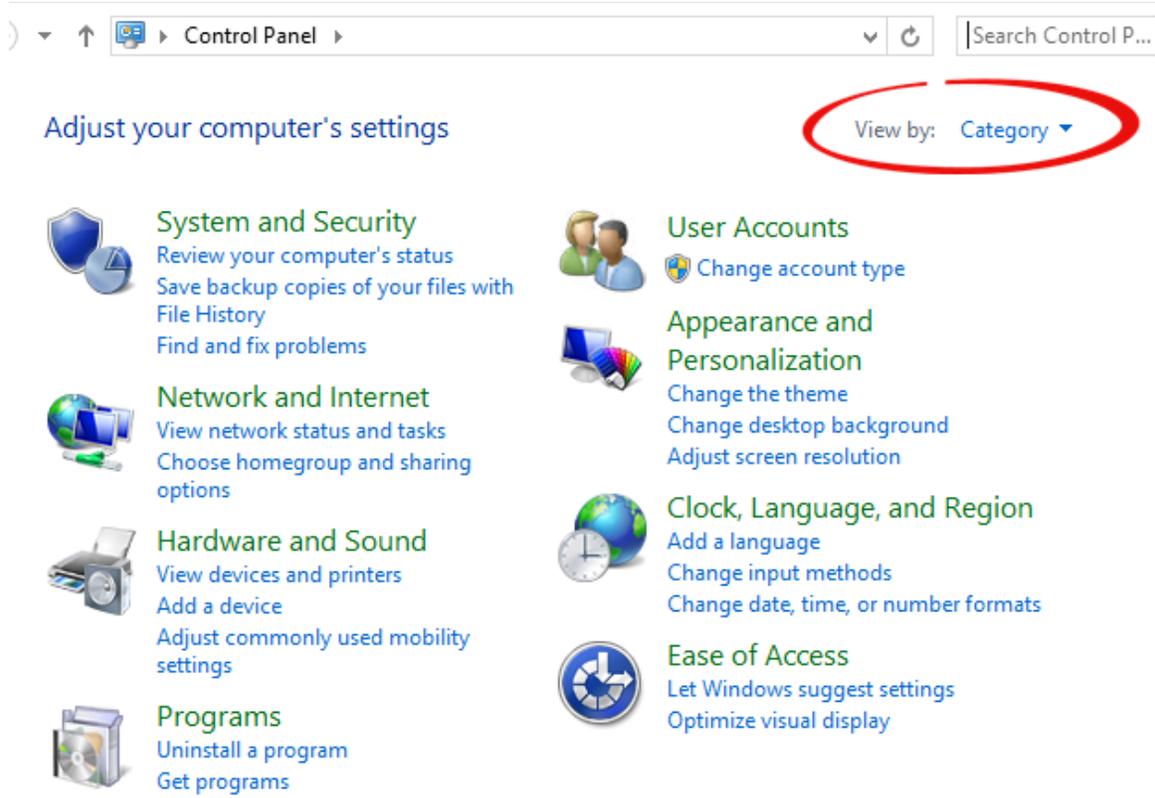
See [Printers](#) below for more details and explanation.

## SHOW ALL CONTROL PANEL ITEMS

Maybe it's just me but the default Control Panel view drives me crazy. The Category view inevitably doesn't have the item you want.

# Windows 10 for Microsoft Office users

Configure - Show all Control Panel items

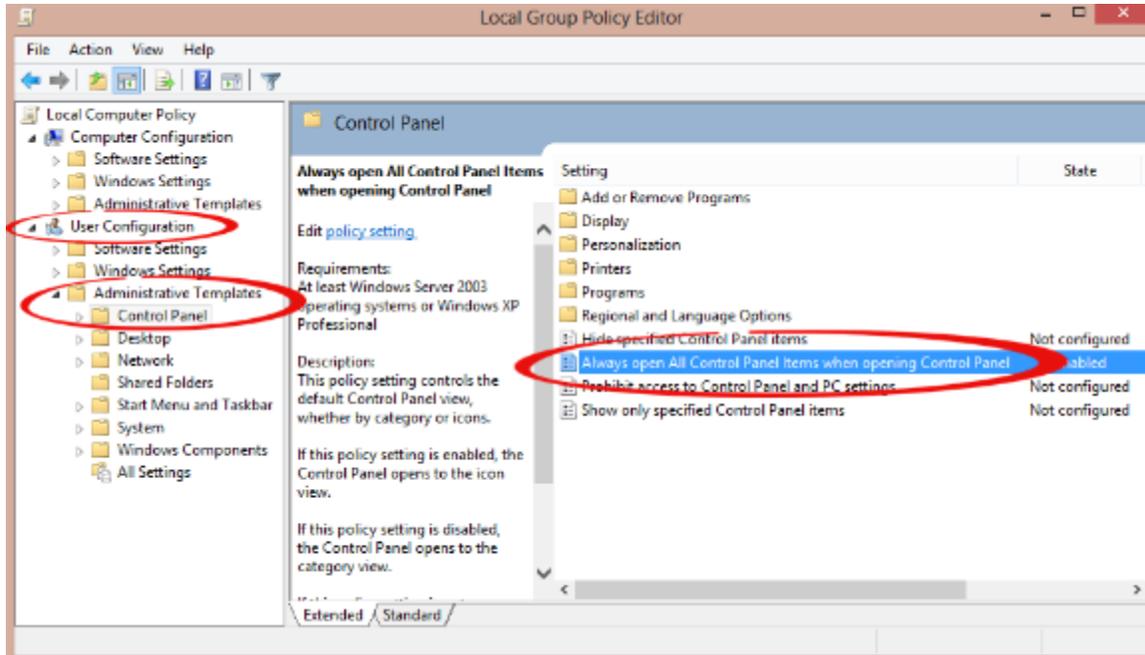


You can change that in various ways but the most reliable and 'sticky' is to change a Local Group Policy (see [Changing Settings](#))

User Configuration | Administrative Templates | Control Panel  
Always open All Control Panel items when opening Control Panel  
Change to Enabled.

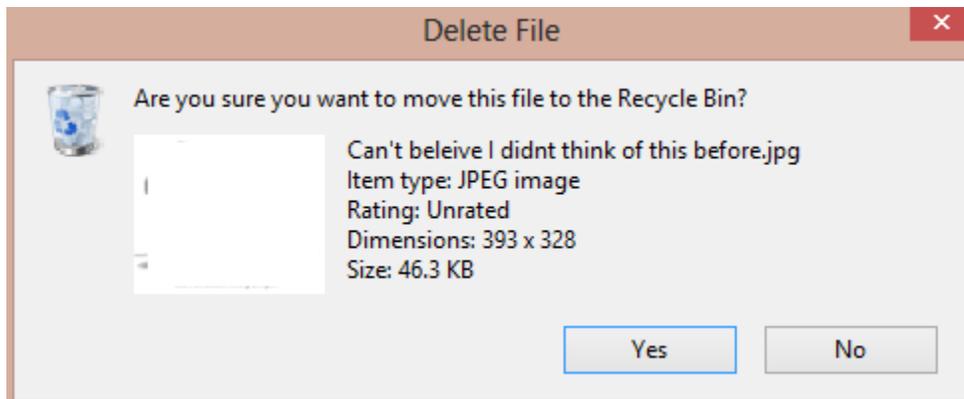
# Windows 10 for Microsoft Office users

## Configure - Delete confirmation



## DELETE CONFIRMATION

Windows now doesn't have the warning you get when deleting a file.



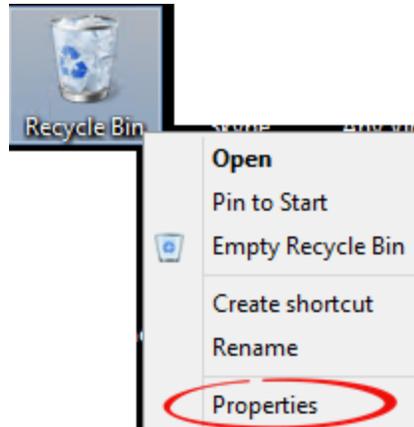
That warning has never really made sense. The file isn't really deleted, just moved to the Recycle Bin.

So now in Windows deleting a file will happen immediately with no warning. You can restore an accidently deleted file by pressing Ctrl + Z (Undo) right away. Or go to the Recycle Bin, find the file and choose Restore to put it back.

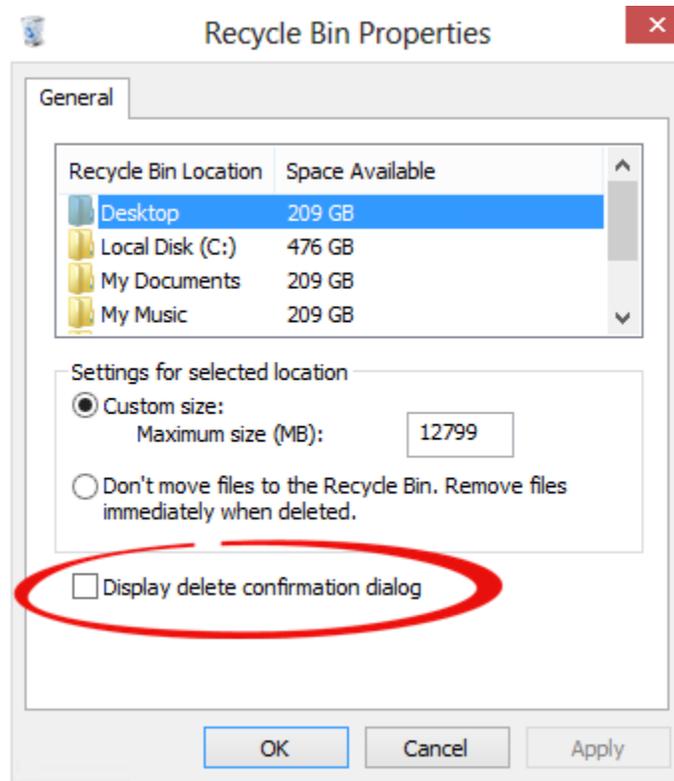
You can change the deletion behaviour by right-clicking on the Recycle Bin icon and choosing Properties.

## Windows 10 for Microsoft Office users

Configure - Auto Login



Check the box 'Display delete confirmation dialog' if you want the warnings to return.



We have a separate chapter devoted to the [Start Menu](#) and how to configure it.

## AUTO LOGIN

We've had some requests for a section on how to make Windows automatically start with no stop for lock screen or login. Instead the computer goes straight to your desktop or Start Menu. We deliberately omitted this

## Windows 10 for Microsoft Office users

### Configure - Auto Login

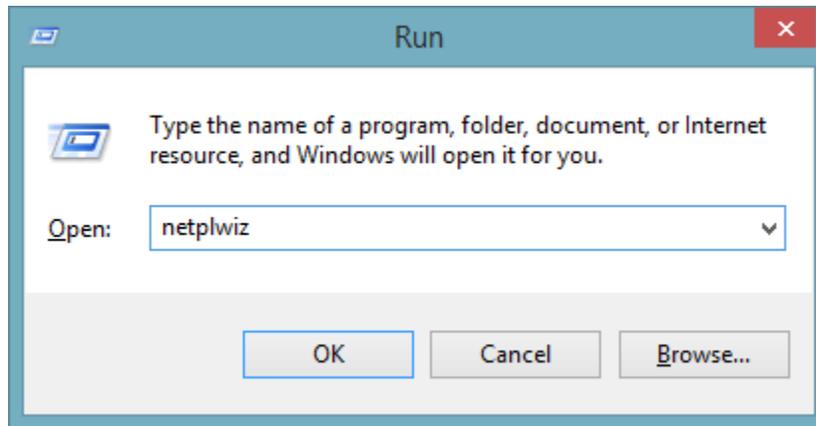
from some editions of our previous Windows 8 book because we feel it's a dangerous practice. Why?

These days your computer stores a lot of details – Microsoft account details, email, logins to web sites via browser autocomplete etc. Having no password to start Windows means anyone can start your computer and get access to a lot of your information with no security blocks.

Having auto-start Windows machines is convenient but has becoming increasingly risky. We did it ourselves, years ago, but these days it is very much NOT recommended.

*But if you insist ...*

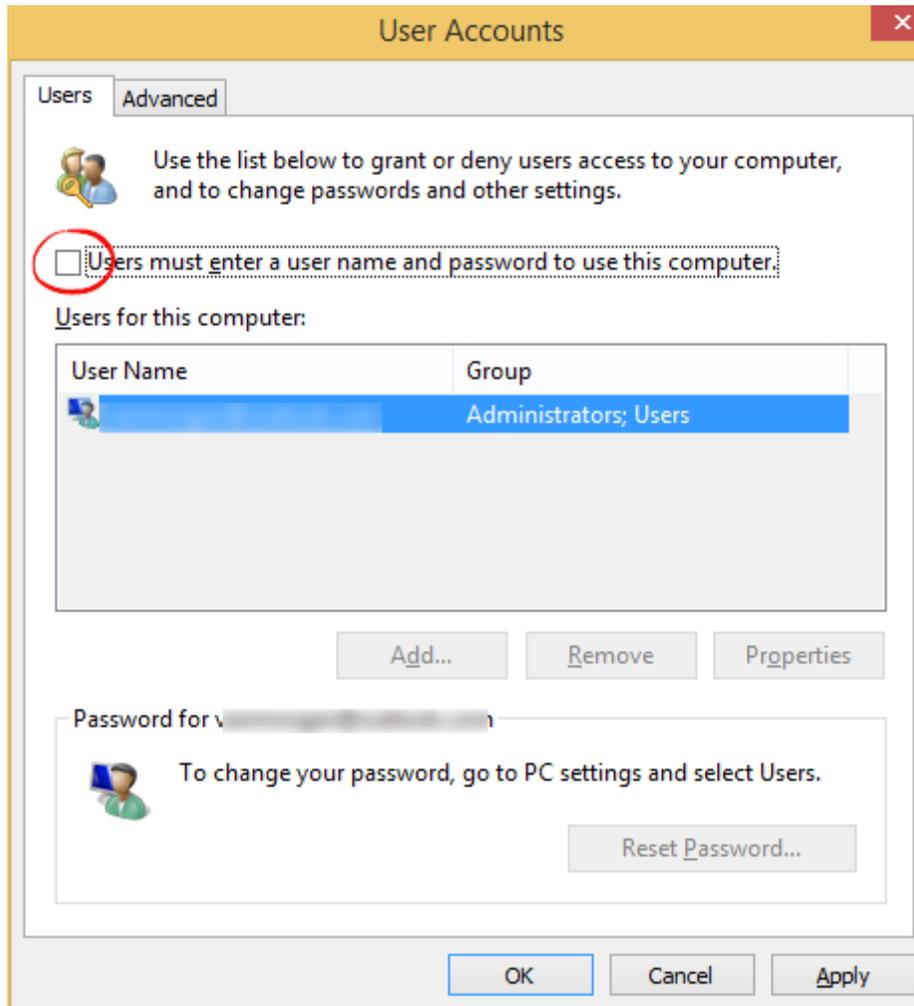
Open the Run box **Win** + R then type `netplwiz`



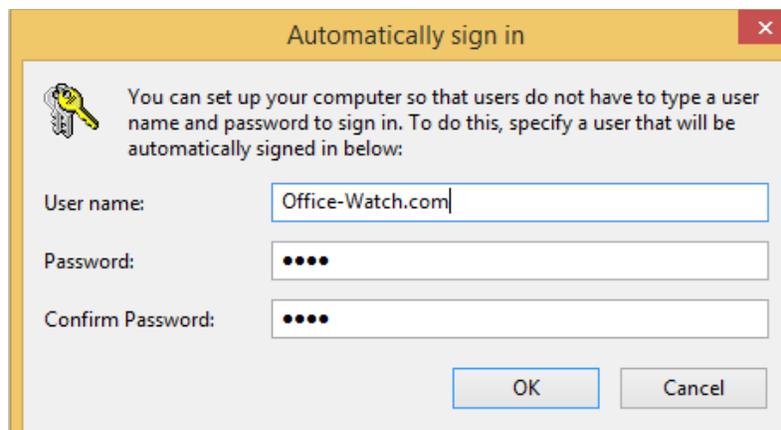
# Windows 10 for Microsoft Office users

## Configure - Auto Login

Select your username from the list then UNcheck “Users must enter a user name and password to use this computer”:



Click Apply, then confirm the user and password to auto-start with:



## Windows 10 for Microsoft Office users

### Configure - Display

If the “Users must enter a user name and password to use this computer” doesn’t appear on the User Account dialog, then the feature has been disabled on that computer. Most likely the computer is part of a domain.

## PRECISION TOUCHPAD IMPROVEMENTS

This feature was added in the Windows 8.1 August 2014 updates and is notable for the tricky bit of wording from Microsoft. The word ‘Precision’ isn’t a description, it’s a trademark for a specific type of touchpad. Most likely you’ll see a ‘Precision Touchpad™’ on Microsoft’s Surface Pro 3 devices but they’re also on some Acer devices.

### DO I HAVE ONE?

To see if your touchpad is a ‘Precision’ brand one, go to PC Settings | PC and Devices | Mouse and Touchpad ... then look for the words ‘Your PC has a precision touchpad near the top.

If a ‘Precision’ touchpad is installed then three extra options will appear:

- Leave touchpad on when a mouse is detected
- Allow right-clicks on the touchpad
- Double-tap and drag

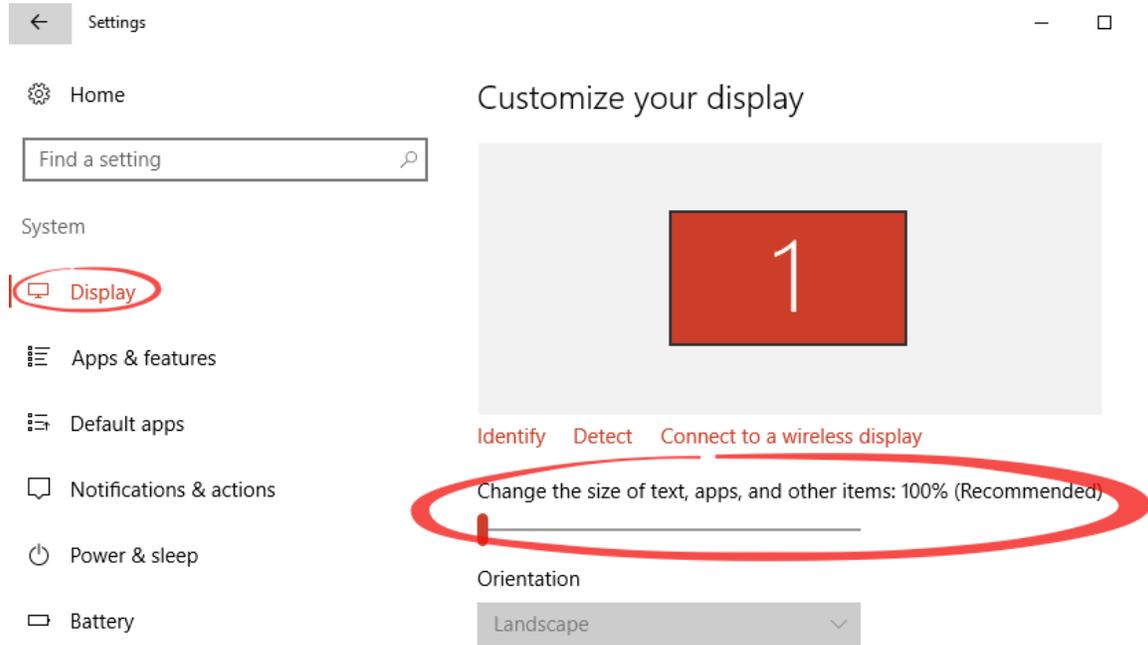
## DISPLAY

For most people the automatic Windows display settings are correct. But some of us with older eyes might prefer things a bit bigger.

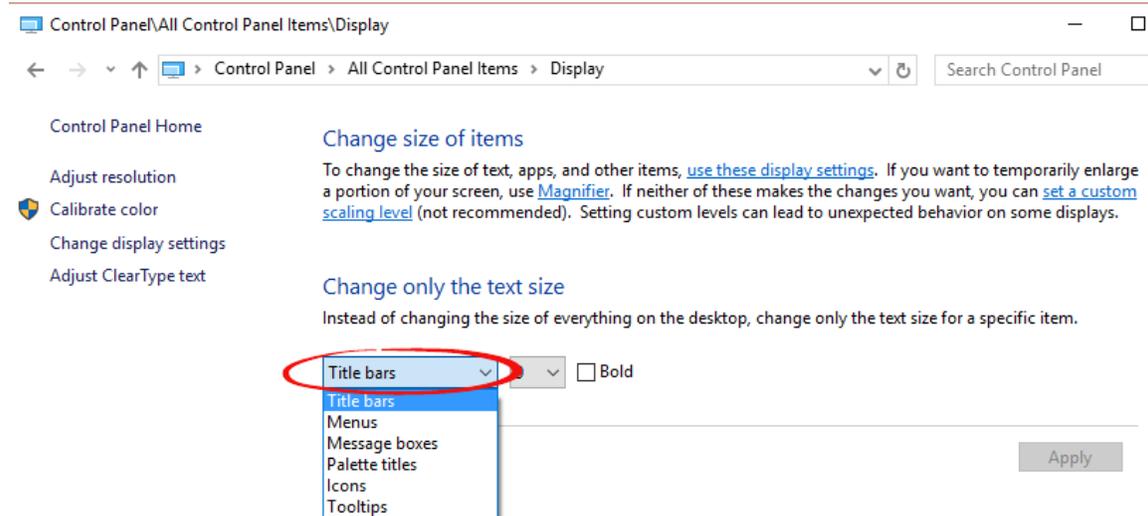
# Windows 10 for Microsoft Office users

## Configure - Display

Go to Settings | System | Display where you can change the size of text and other desktop items.



In addition, you can change the text size of some desktop elements; title bars, menus, message boxes, palette titles, icons and tooltips. But that option is back on Control Panel | Display (see what we mean about the split world of Windows settings?)

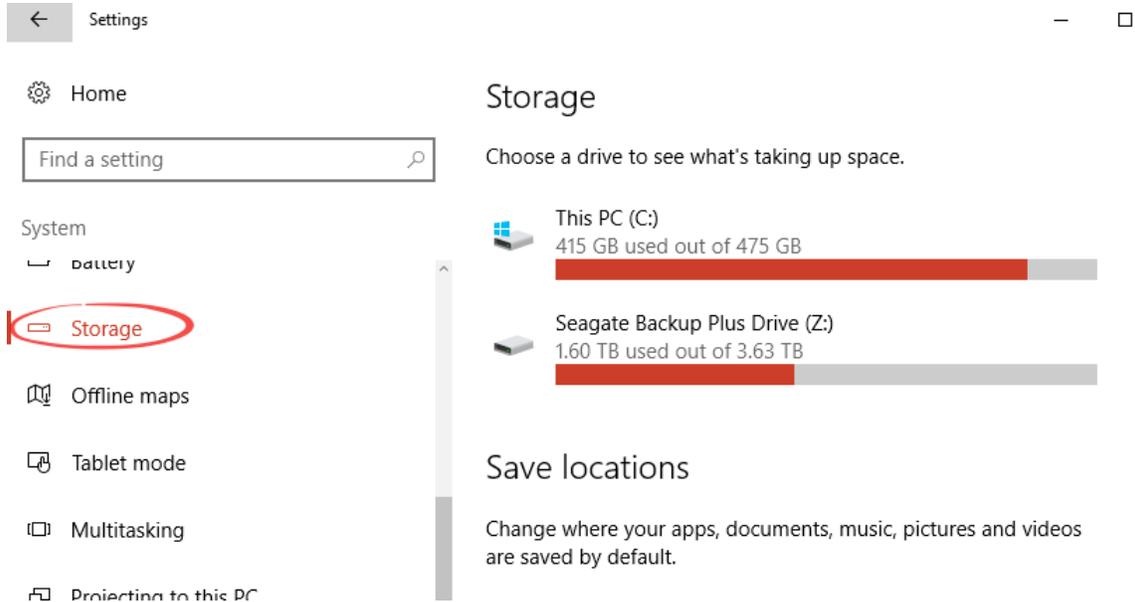


# Windows 10 for Microsoft Office users

Configure - Display

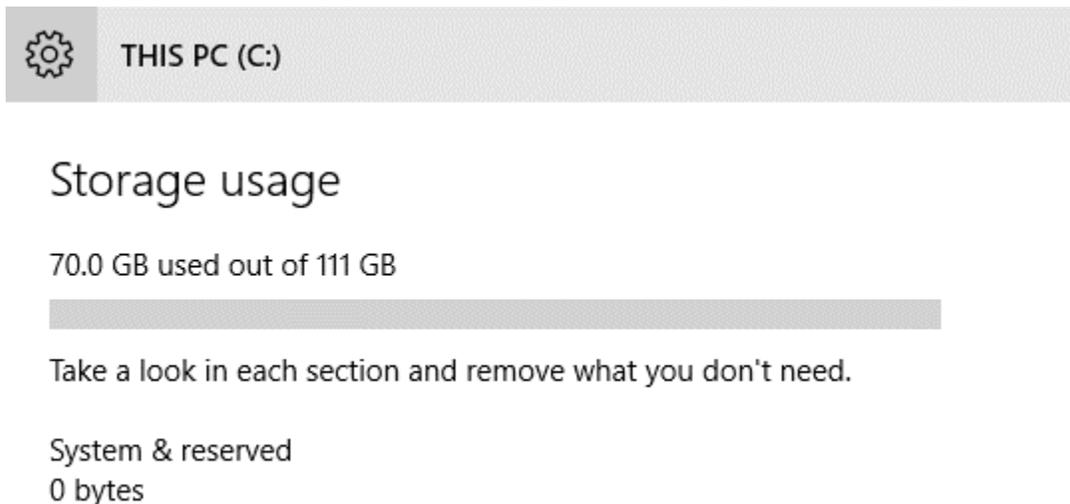
## DISK SPACE INFO

Settings | System | Storage has quick drive space info. This page requires some patience because it can take some time to appear.



You can get the same information and faster from the 'This PC' view in File Explorer.

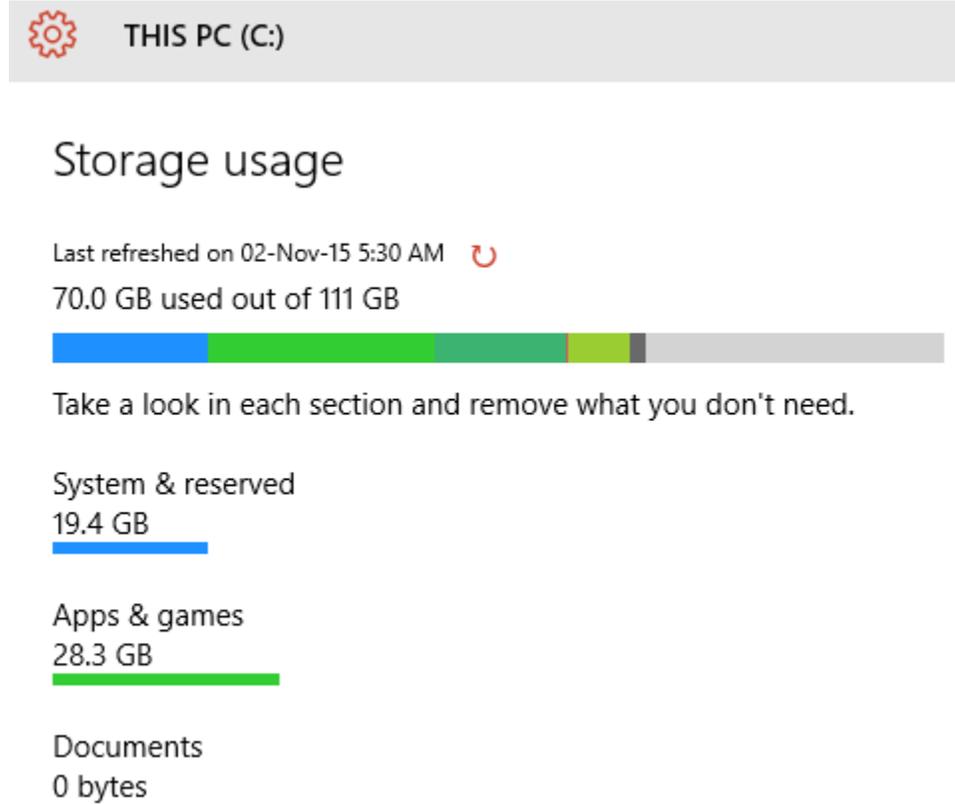
But in Storage, click on a drive to start a slow space analysis.



# Windows 10 for Microsoft Office users

Configure - Display

Eventually it will show a summary of drive use.

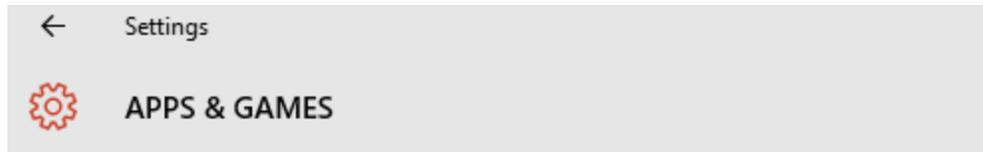


# Windows 10 for Microsoft Office users

Configure - ReFS disk format

Click on any of the entries to see a more detailed analysis.

**Apps** – how much space your programs are using. Unlike in Windows 8, this now includes both modern apps and traditional Windows programs.



## Apps & features

### Manage optional features

Search, sort, and filter by drive. If you would like to uninstall or move an app, select it from the list.

You have 41.3 GB of space available on the selected drive.

	Adobe Photoshop Lightroom 4.3 64-bit Adobe	854 MB 29-Dec-12
	Google Chrome Google Inc.	612 MB 06-Apr-14

There are options to search for a program/app by name, sort by name/size/install date plus the drive the app is installed on.

## REFS DISK FORMAT

These days almost all Windows hard drives are formatted using Microsoft's NTFS system and that's fine, leave it that way.

You may see references to 'ReFS' or Resilient File System which is the successor to NTFS. Windows 10 partly supports ReFS but we'd strongly urge you to NOT try it. ReFS is still a work in progress and not ready to take over from NTFS, not yet anyway.

## Windows 10 for Microsoft Office users

Configure - Extras to install

If you need ReFS support, add a registry key

HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Control\MiniNT

DWORD: AllowRefsFormatOverNonmirrorVolume

Value: 1 to enable ReFS, 0 to disable.

## EXTRAS TO INSTALL

Windows doesn't have everything you need. Here are some extras to consider installing.

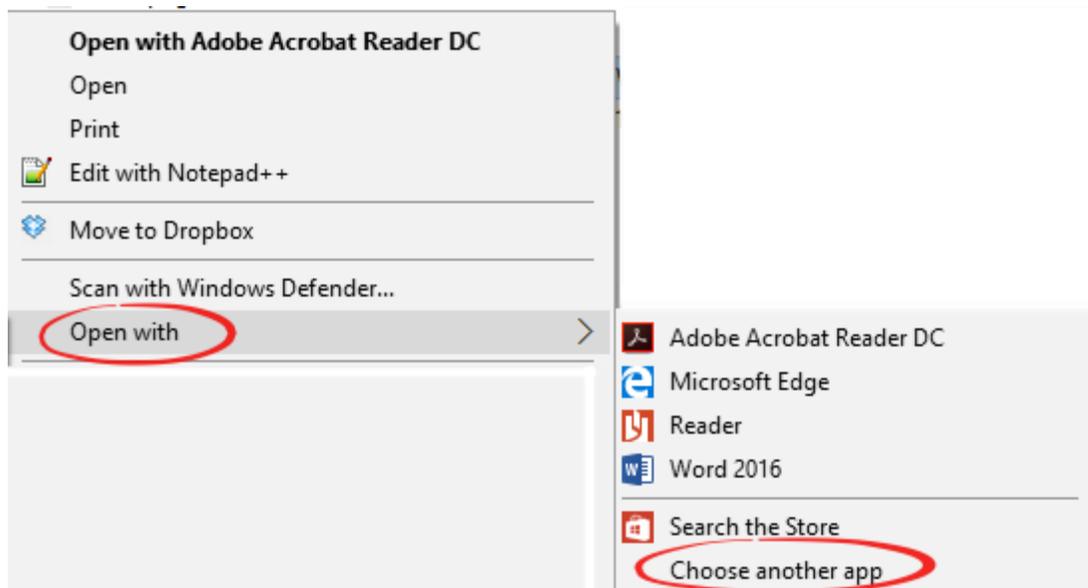
### PDF READER

Reading PDF files is a very common task and for the first time, Microsoft is providing a PDF viewer with Windows.

Unfortunately, it's the new Edge browser which is lame and insufficient for most people.

Thankfully, you can still download the free Adobe PDF Reader (now called Adobe Acrobat Reader DC) from <http://get.adobe.com/reader/> or whatever third-party PDF viewer you prefer.

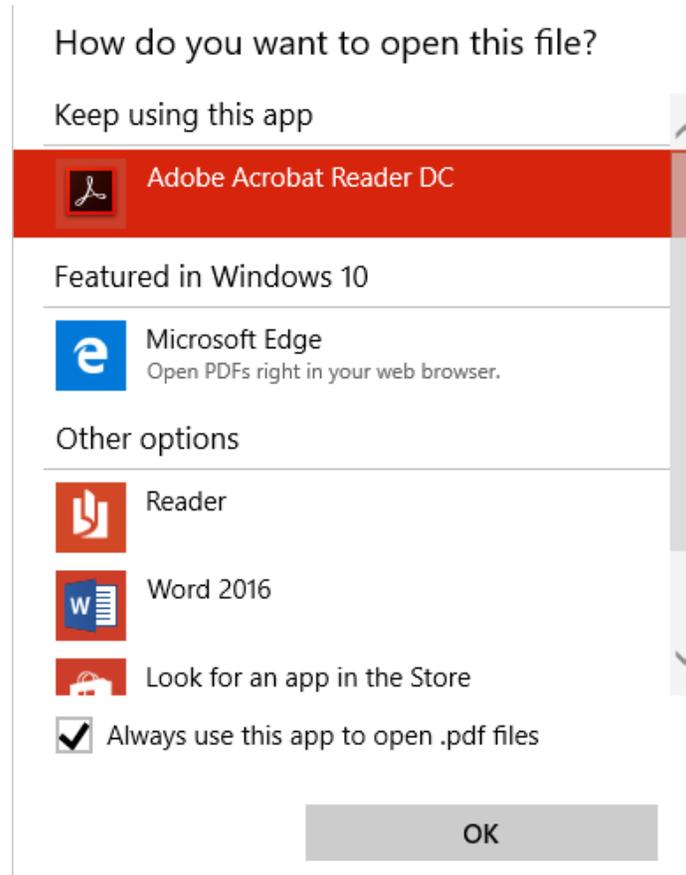
Once installed all you have to do is change the default PDF viewer to the Adobe reader. Right-click on any PDF file and choose Open with | Choose another app (was called Choose default program ....)



## Windows 10 for Microsoft Office users

Configure - Extras to install

Make sure the 'Use this app for all .pdf files' is checked, then click on Adobe Reader (or whatever PDF viewer you've installed).



The icon next to any PDF files in Explorer will change to the standard Adobe image.



There is another PDF viewer from Adobe. 'Adobe Reader Touch' is the Modern/Metro app version and it'll show up when you right-click on a PDF and choose 'Open with ...'



In addition, there's the Microsoft Reader app and Word 2013 will open (and convert) PDF's.

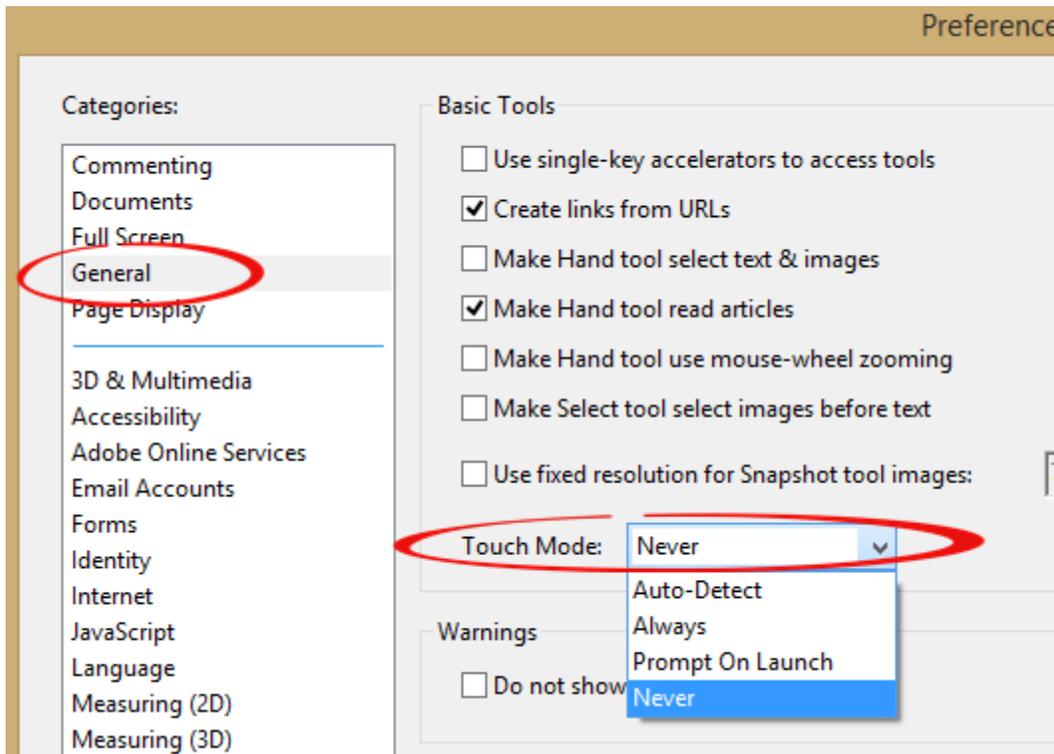
## Windows 10 for Microsoft Office users

Configure - Extras to install

### MISSING SCROLL BARS

We'll mention a little annoyance in the latest Adobe PDF Reader. If you have a touch screen, the Reader assumes you want to use that and so disables the scroll bars. If you don't use the touch screen much, this can be a real nuisance.

The fix is in Edit | Preferences | General.



Change the Touch mode from Auto-Detect to either Never or Prompt on Launch.

### ADOBE FLASH

Adobe Flash is a browser add-on that lets you play animations, movies etc on web pages. It's got a lot of bad press as Apple and Microsoft try to push it aside in preference to their own products. But Flash is still needed on many web sites and will be for the foreseeable future.

Get it free from <http://get.adobe.com/flashplayer/>

### COMPRESSION SOFTWARE

Windows natively supports ZIP files and will open them automatically as if they were a folder.

## Windows 10 for Microsoft Office users

### Configure - Extras to install

However, that support is quite limited so many people choose to install alternative software that gives better viewing and extracting options as well as more control over compressed files.

The market leader is WinZip <http://www.winzip.com/>

For many years we've used WinRAR <http://www.rarlab.com/> which supports RAR format as well as all the other major compressed file types (including ZIP). WinRAR has some powerful features like 'solid' archives that let you make smaller compressed files in many circumstances.

Both products have free trials and work with Windows.

### BROWSER

You don't have to use Internet Explorer nor the new Microsoft Edge with Windows – Microsoft would prefer that you do but it's not compulsory.

Feel free to download and install your preferred browser such as [Firefox](#) or [Google Chrome](#). We've preferred Google Chrome for many years and only use Internet Explorer when necessary (which is rare these days).

### SKYPE

The cost of phone calls has plummeted in recent years and there's one main reason – [Skype](#).

Skype lets you make cheap calls, especially international calls, at rates that were unthinkable a decade ago.

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*Office 365 subscribers get an hour of free calls per month to many countries.*

---

But most people use it for free audio and video calls between computers.

What's less well known about Skype is the instant text messaging and file transfer options. The latter is very useful for sending/receiving files that are too large for sending via email.

'[Skype to Go](#)' lets you make cheap international calls from your mobile phone or landline phone.

Skype is supported on a wide range of computers and devices. If someone calls you on Skype the ring tone will sound on any devices you're logged onto Skype with at that moment – not just one.

## Windows 10 for Microsoft Office users

### Configure - Extras to install

Some of the subscription options are good if you make a lot of overseas calls, for example to friends, family or business contacts.

Travelers might consider putting some credit in their Skype account so they can call their home country cheaply. It's a cheap way to contact your bank when they decide to freeze your credit card <sigh>.

The Microsoft Messaging app has been dropped. Microsoft expects you'll use Skype instead.

### ANTIVIRUS

Windows includes [Windows Defender](#) a more than adequate anti-virus program.

It's the same as 'Security Essentials' the free antivirus software from Microsoft available for previous versions of Windows.

Defender is installed and run during a standard Windows installation. There's nothing you need to do in most cases.

Security Essentials / Windows Defender is regularly updated via Windows Update and works nicely in the background, only popping up when it detects something troubling.

---

*We can't see any good reason to buy additional antivirus software since Windows has adequate protections already.*

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Some new computers will come with 'free' antivirus software which the software companies have paid the computer maker to include. They hope to lure you into paying for updates or subscriptions. Just uninstall these extras and let Defender do the same job for free.

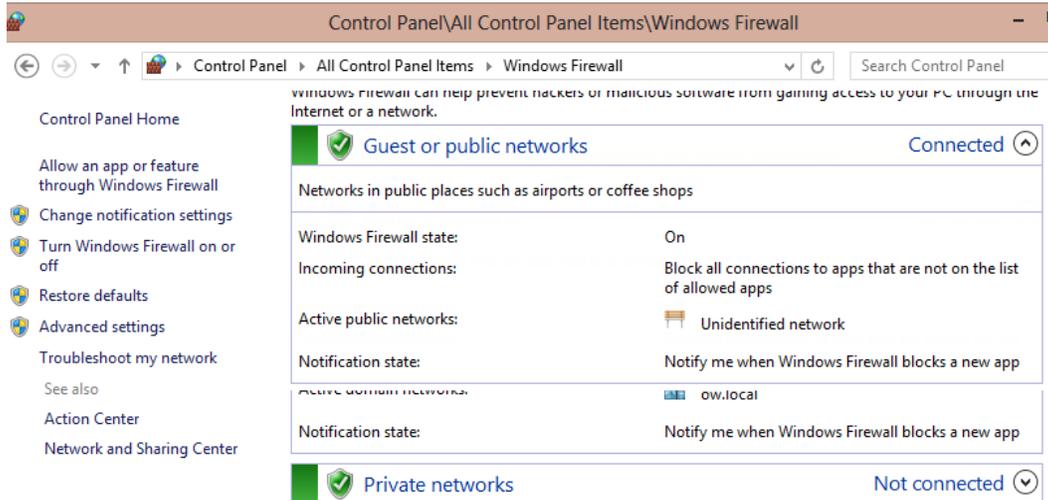
# Windows 10 for Microsoft Office users

Configure - Find my Device

## FIREWALL

It's the same story with firewall software to protect against intrusion onto a computer over a network or Internet.

Windows comes with Windows Firewall which does a perfectly good job. Go to Control Panel | Windows Firewall.



Even better, Windows Firewall is well understood and known to software developers. If software needs access through the firewall, the installation routine can configure that in Windows Firewall after getting your approval.

Any third-party firewall software doesn't seem necessary and will require separate configuration.

## FIND MY DEVICE

New with the November 2015 release is 'Find my device' which is now available for portable computers and tablets running Windows 10.

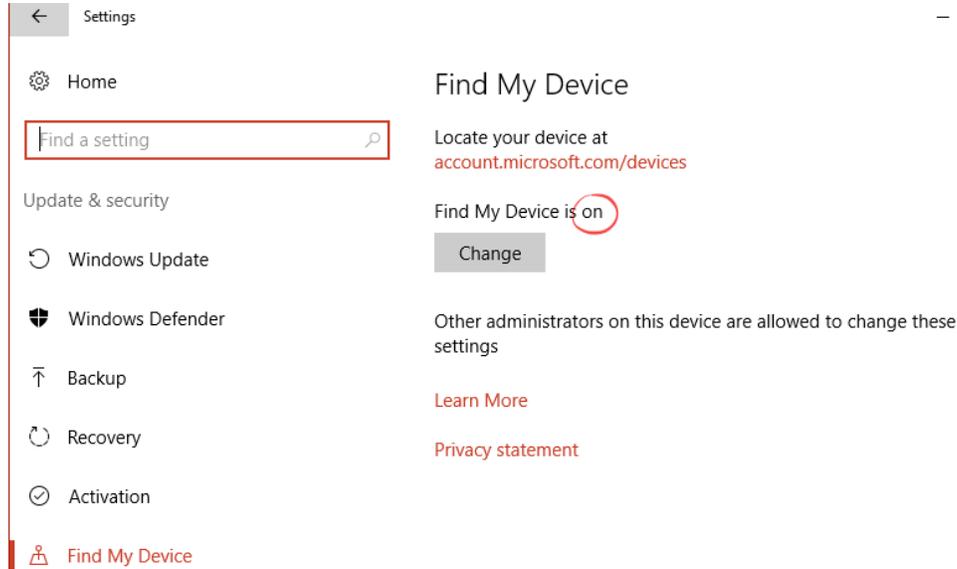
You may be familiar with the concept because it's been available for Apple and Android devices for some years now. The device regularly updates its position to a cloud server. The user can then login to their account via a web browser to see where the device is or, more accurately, where it was last located.

This option has to be turned on and you need a Windows login using a Microsoft account.

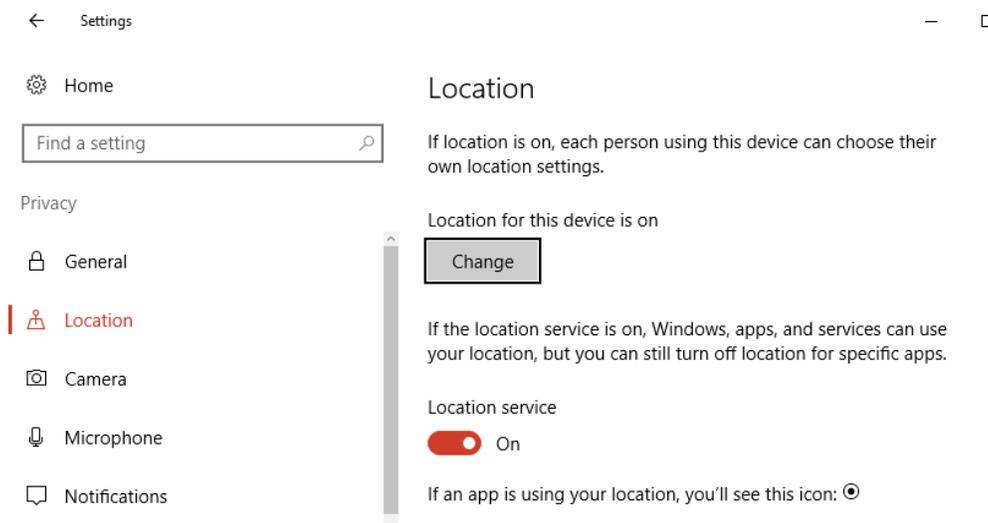
# Windows 10 for Microsoft Office users

## Configure - Find my Device

Get started at Settings | Update and Security | Find my Device. (you might find some online tips get this wrong because Microsoft moved it during testing).



As you can see the Location setting needs to be on, naturally. Settings | Privacy | Location.



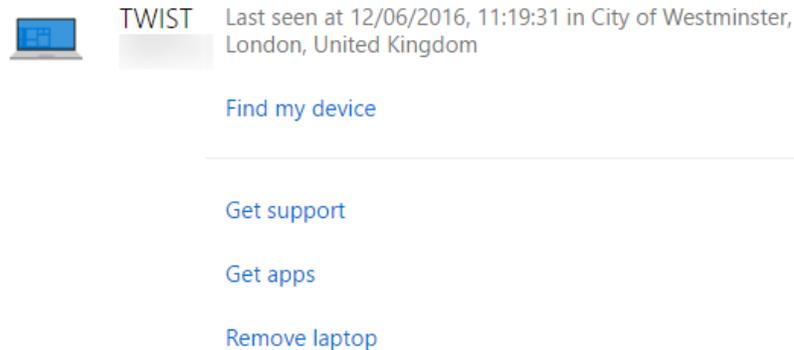
With Location Services on, you can go to Settings | Update and Security | Find my Device and turn 'Find my device' on.

After a delay, the devices location will show up in your Microsoft account, Devices list. <https://account.microsoft.com/devices?src=fmpsetting>

# Windows 10 for Microsoft Office users

## Configure - Printers

*Try out the Find my device web page so that you're familiar with it. Then bookmark the Devices page. This will save some raised blood pressure when you really are searching for a lost computer.*



Click on 'Find my device' to show the location on a map.

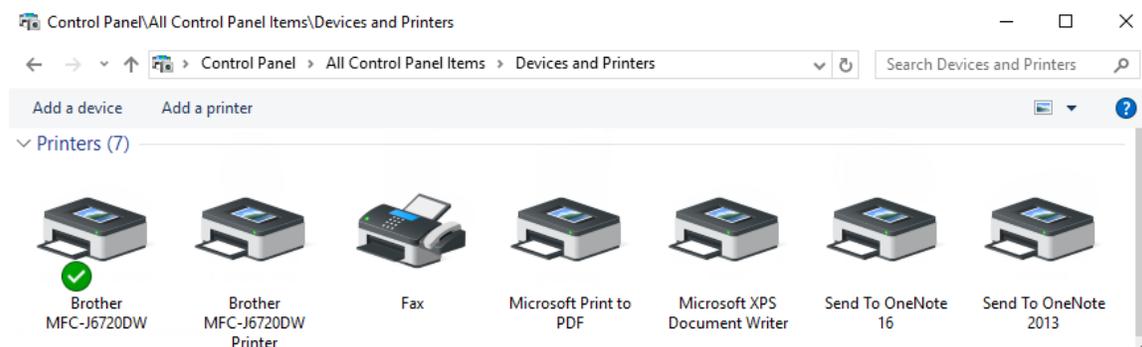
## PRINTERS

Let's look at some printer settings and defaults that you might want to change.

Before we start we'll give you a small warning. It is hard to describe in detail what happens with printer settings because a lot depends on the individual printer make, model, drivers and connection type. We can only provide broad guidance; the individual settings depend on what your printer driver will support.

### ADD A PRINTER

Once you've installed Windows and Office you'll have some 'printers' installed already. Go to Control Panel | Devices and Printers.

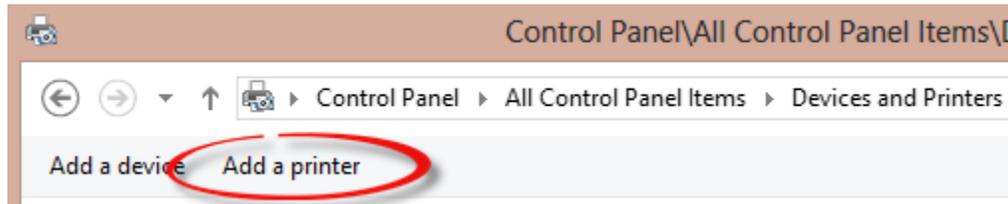


# Windows 10 for Microsoft Office users

## Configure - Printers

'Microsoft XPS Document Writer' (installed by Windows) and 'Send to OneNote' (installed by Office) are virtual printers to take print output from programs and turn them into files. Since hardly anyone uses the XPS file format (not even Microsoft, who created it!) most people ignore that option.

To add a printer, make sure it is connected to the computer or network then click 'Add a printer'.



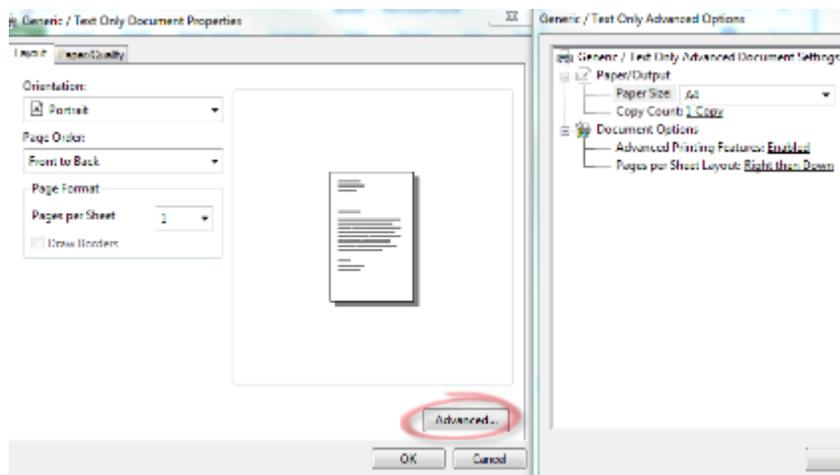
Most likely, Windows will detect the new printer and take you through the install process. Otherwise click 'The printer that I want isn't listed'. The manual that came with the printer should have specific install details.

## DRIVERS

Windows will install the printer, probably with the Microsoft supplied drivers. These should be sufficient but there could be a better option.

Most printer makers have their own software and drivers which add significantly to the basic features provided by the Microsoft drivers.

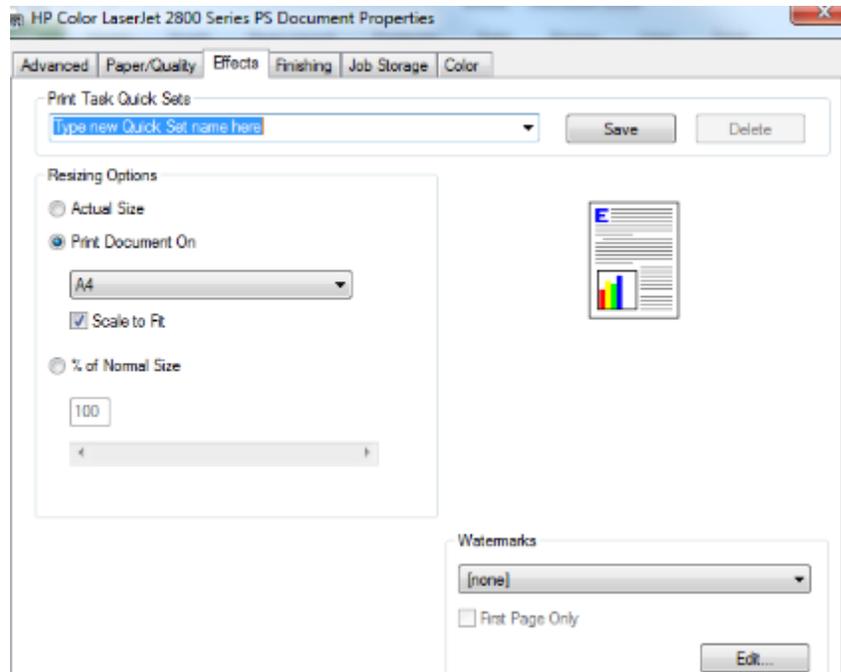
Here's a very simple printer properties supplied by Windows with the Advanced view as well.



If you have the better printer and print drivers from the manufacturer, then you can end up with a dizzying array of tabs and options. For example, here are the printer properties for a HP Color LaserJet that's typical for a modern printer:

# Windows 10 for Microsoft Office users

## Configure - Printers



There are many extra features in the printer supplied software over the standard Windows drivers. Some of those features won't interest you but others can be handy like multiple pages on one sheet, grayscale printing etc.

So head to the web site for your printer manufacturer, look up the printer and download the package for Windows 10 (or Windows 7/8 if there's nothing specific for '10').

Only use the main company web site (e.g. hp.com epson.com etc.) to download printer software. Don't use any third party site.

Don't use the CD/DVD supplied with the printer. It's very likely that an updated version of that software is available from the web site.

## DEFAULT PRINTER

A new option in the November 2015 release is at Settings | Devices | Printers and scanners | Let Windows manage my default printer.



**On** - the default printer is always the last used printer at that location.

# Windows 10 for Microsoft Office users

## Configure - Printers

**Off** – the default printer stays at your explicit selection. If you choose another printer for a particular job, it doesn't change the default. This has been the Windows behavior for many years.

### DEFAULT SETTINGS

A source of many questions is why default printer settings don't 'stick' and revert to the original settings.

Most commonly this is because of a misunderstanding about how printing works in Windows. There are TWO sets of default printer settings and to ensure your printer has a consistent set of defaults you have to change both.

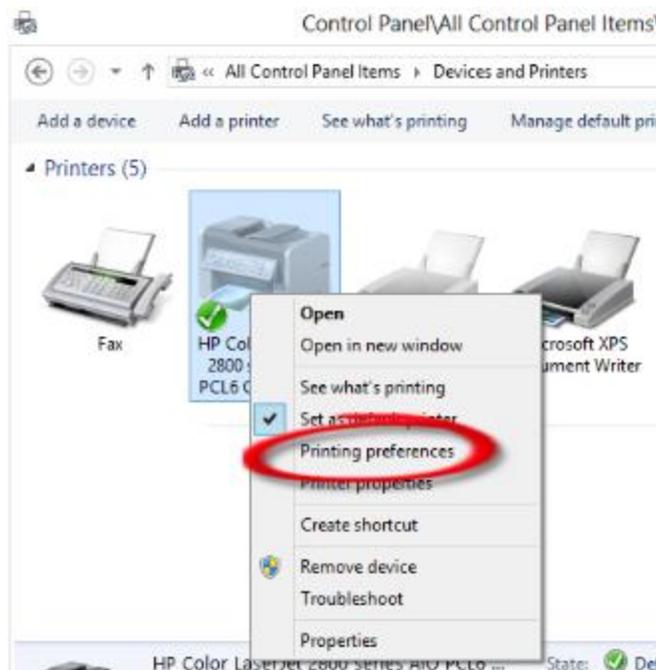
The application, like Microsoft Office, will have print settings that you can change and set as the default values.

The print driver (installed in Windows) also has default settings.

Techies will know there's often a third set of printer defaults, in the printer itself! However those settings should always be overridden by the print driver in Windows and can usually be ignored.

### PRINTER DEFAULTS

To change the printer defaults, choose the Printer then right-click on Printer Properties.



What you see will depend on the printer and what print drivers you have installed.

## Windows 10 for Microsoft Office users

### Configure - Printers

#### DEFAULTS TO CHANGE

OK, now we know where all the print default options are, what can be changed?

Page Size is a common issue. In the USA it's either Letter or Legal size but the rest of the world has mostly moved to the metric sizes (commonly A4). To change the default paper size and stop printer errors change the page size in both Office and the printer drivers.

---

*Word has a nice feature to automatically rescale documents between imperial and metric sizes at print time. This lets you use both paper sizes and print them without a second thought. Go to Word Options / Advanced / Scale content for A4 or 8.5 x 11" paper sizes.*

---

Printing quality. Most printers are set to print at best quality and, if available, color. This shows off the printer features to best advantage and uses up toner/ink more quickly. The print quality settings are in the printer drivers, so look there to see what is available.

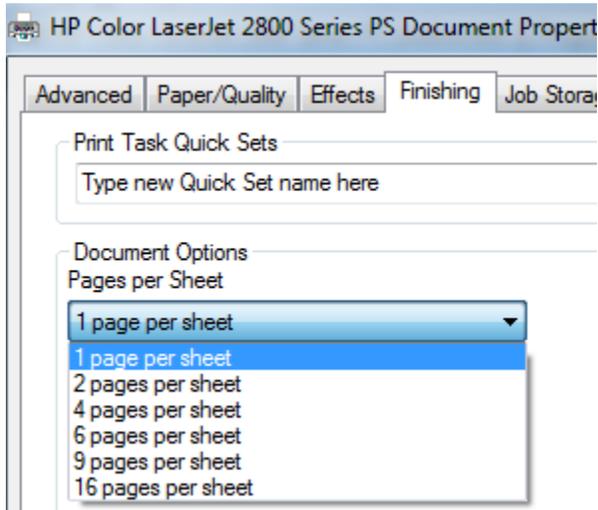
Color / Grayscale. In many cases you only need monochrome printing for drafts etc. Printing in grayscale/black ink only will save a lot of money in toner/ink costs.

Pages per sheet. Printing more than one page of a document on a single sheet of paper was once a major hassle with complex and cumbersome solutions. These days there is at least one, probably two simple options. Word has a 'page per sheet' option that makes it easy but not all programs let you choose.

# Windows 10 for Microsoft Office users

## Configure - Printers

Many print drivers have a similar option, here's the HP driver option to do the same thing for programs that don't support it themselves:



## Windows 10 for Microsoft Office users

Repair / Recovery - Recovery Drive

# REPAIR / RECOVERY

Once you have Windows installed plus all the software you like and configuration is done .... it's time to prepare for the worst.

Some preparation, that's usually overlooked, will help you fix Windows when it goes awry.

One part of that is making repair or recovery disks with information and tools to use.

The other part is taking an image/snapshot/backup of your entire computer at the post-install point. A post-configuration image is very useful if your computer goes '[pear shaped](#)' (as the British might say). Instead of re-installing and configuring the whole thing again you can restore all that in one process.

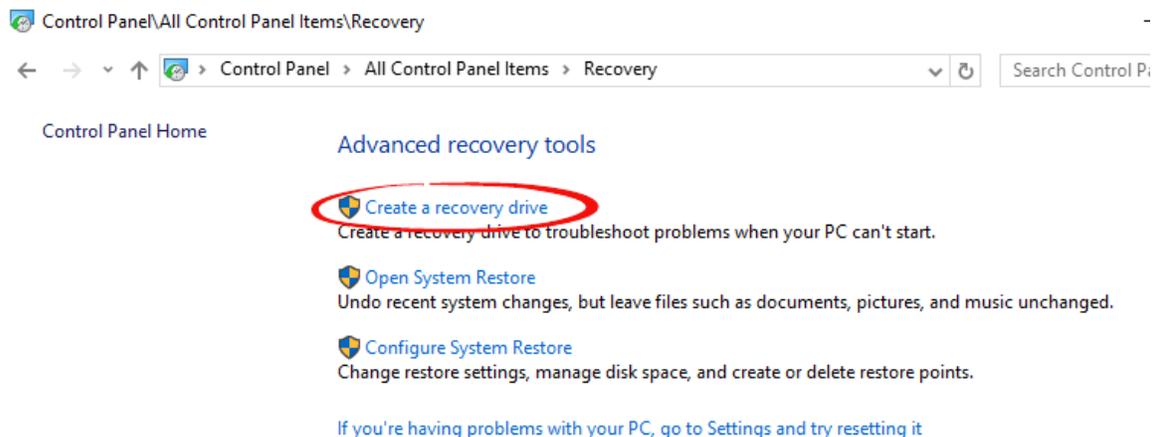
There are various options for doing this, depending on how much time and effort you want to allocate.

Windows also has options to reinstall itself and return to a 'clean' Windows without the clutter that can accumulate.

## RECOVERY DRIVE

At Control Panel | Recovery, you can create a 'recovery drive'. This is a bootable USB 'stick' that can be used to recover when the computer won't start properly.

The USB Recovery Drive is Microsoft's recommendation over the System Repair Disc/DVD. The USB drive can be used on any Windows computers/laptops, with or without an optical drive.



## Windows 10 for Microsoft Office users

Repair / Recovery - Recovery Drive

You'll need a spare USB memory stick, at least 8GB. A 16GB 'stick' is better but any larger is a waste. 32-bit Windows only needs a 4GB 'stick'.

---

*The entire memory stick will be wiped so, before you begin, make sure there's nothing else on it. This is good use for those old 'sticks' that many of us have lying around.*

---

Click on 'Create a recovery drive' and follow the wizard.

←  Recovery Drive

### Select the USB flash drive

The drive must be able to hold at least 8 GB, and everything on the drive will be deleted.

Available drive(s)  
G:\ (My Book 3.6TB)  
H:\ (PD 16GB)

The 'Select the USB flash drive' page is a little smart. If you plug in another USB drive while on this page, it will automatically refresh to show the new drive.

Choose the drive then click Next. There's one more warning ..

←  Recovery Drive

### Create the recovery drive

 Everything on the drive will be deleted. If you have any personal files on this drive, make sure you've backed up the files.

Once created, test the recovery drive by trying to boot to it. You only need to see the first menu of the recovery drive then reboot the computer normally. Booting to a USB drive may take some extra steps on your computer to make it start from the USB drive not the internal drives. Check the hardware manuals for your computer.

## Windows 10 for Microsoft Office users

Repair / Recovery - System Repair Disk

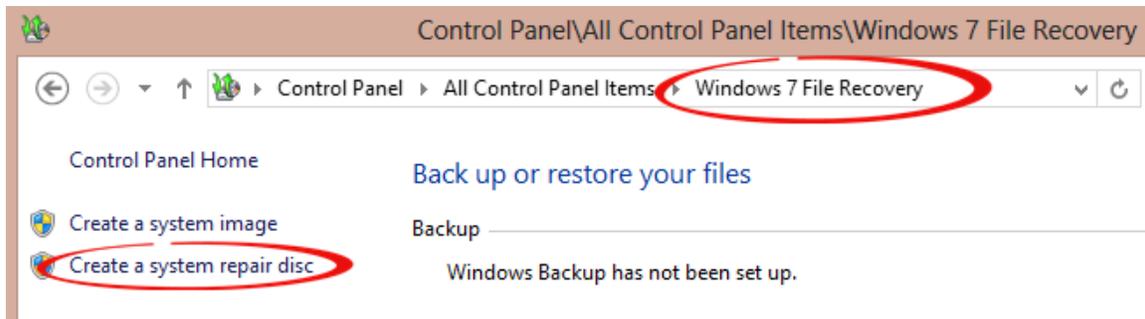
Label the recovery drive including the name of the computer and operating system, bitness etc. (“Win10 64-bit Recovery drive, bootable. For Bill’s office machine. August 2016”).

The recovery drive made on one Windows 10 computer can be used on another, non-bootable, Windows 10 machine. But only IF both computers use the same ‘bitness’ of Windows 10 i.e. Windows 10 32-bit or 64-bit.

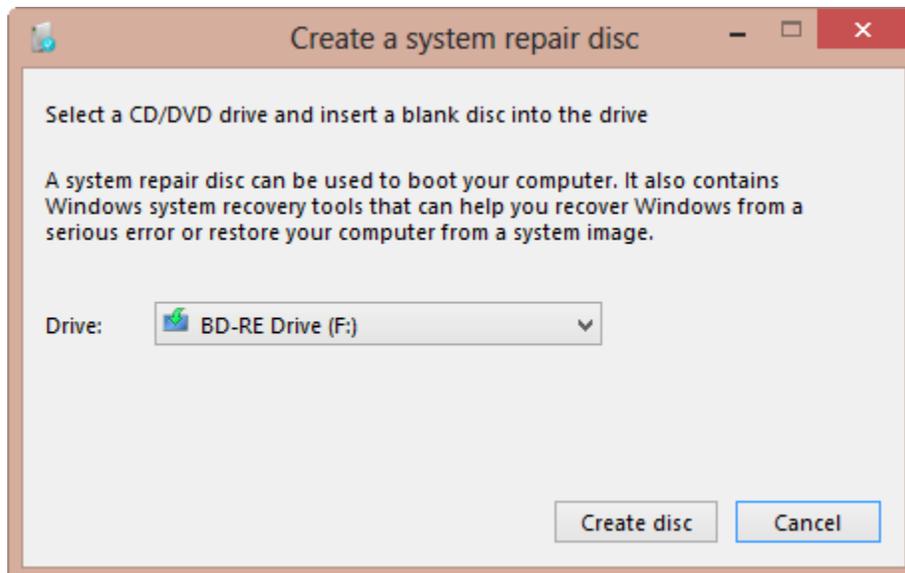
## SYSTEM REPAIR DISK

The system repair disk is a bootable CD or DVD that you can use to try recovering from a problem when you can’t start the computer. It’s similar to the Recovery Drive but, obviously, doesn’t apply to machines without an optical drive.

Go to Control Panel | Backup and Restore (Windows 7). Yes, it does say Windows 7! Then choose ‘Create a system repair disc’.



You’ll need a blank CD/DVD in your optical writable drive:



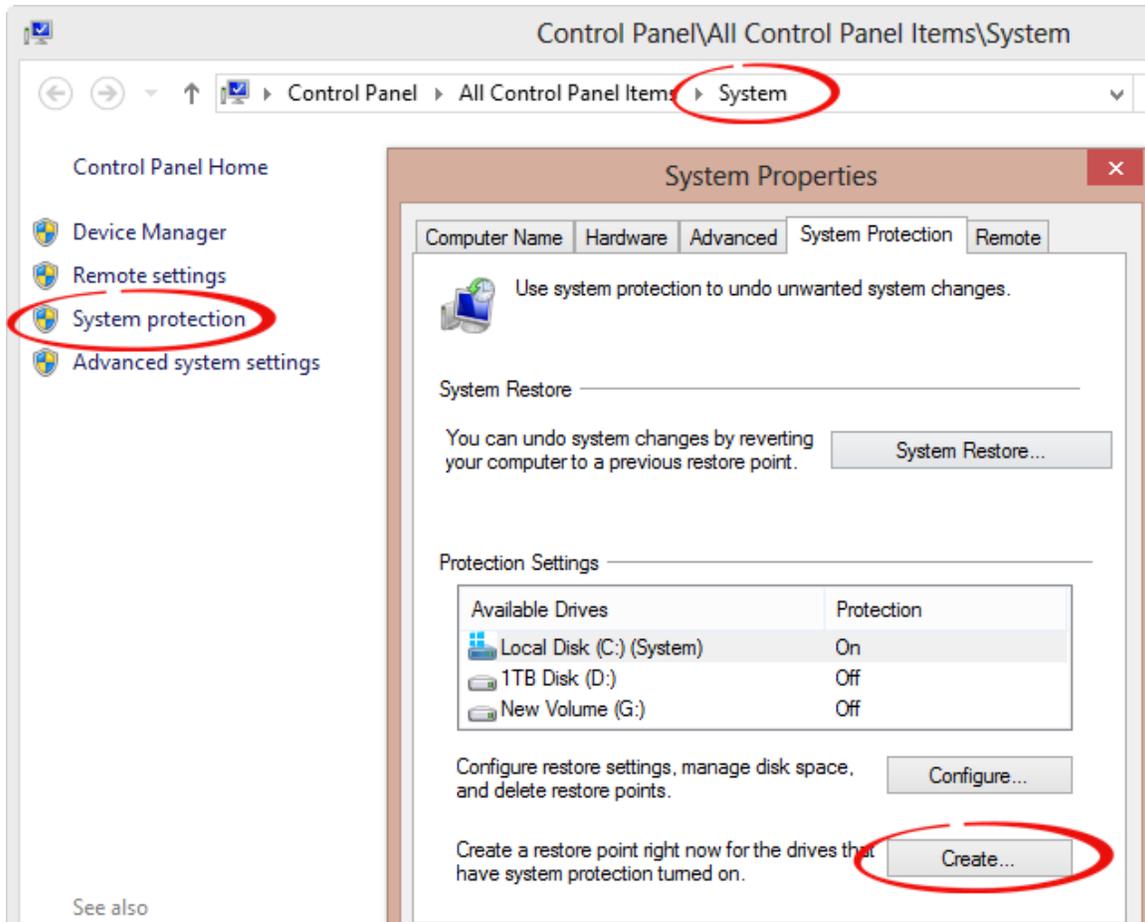
## Windows 10 for Microsoft Office users

Repair / Recovery - Restore point

When the disk is created, test it by booting your computer from the CD/DVD to make sure it works. You only need to see the first screen of the repair disk then reboot the computer normally. Label and store the repair disk carefully.

## RESTORE POINT

Go to Control Panel | System | System Protection or Control Panel | Recovery | Configure System Restore then click on Create ...



Give the restore point a name like 'Post install and configuration' then click OK. Making the restore point should take a minute or two at most.

You can manage restore points from the Configure button on the above dialog.

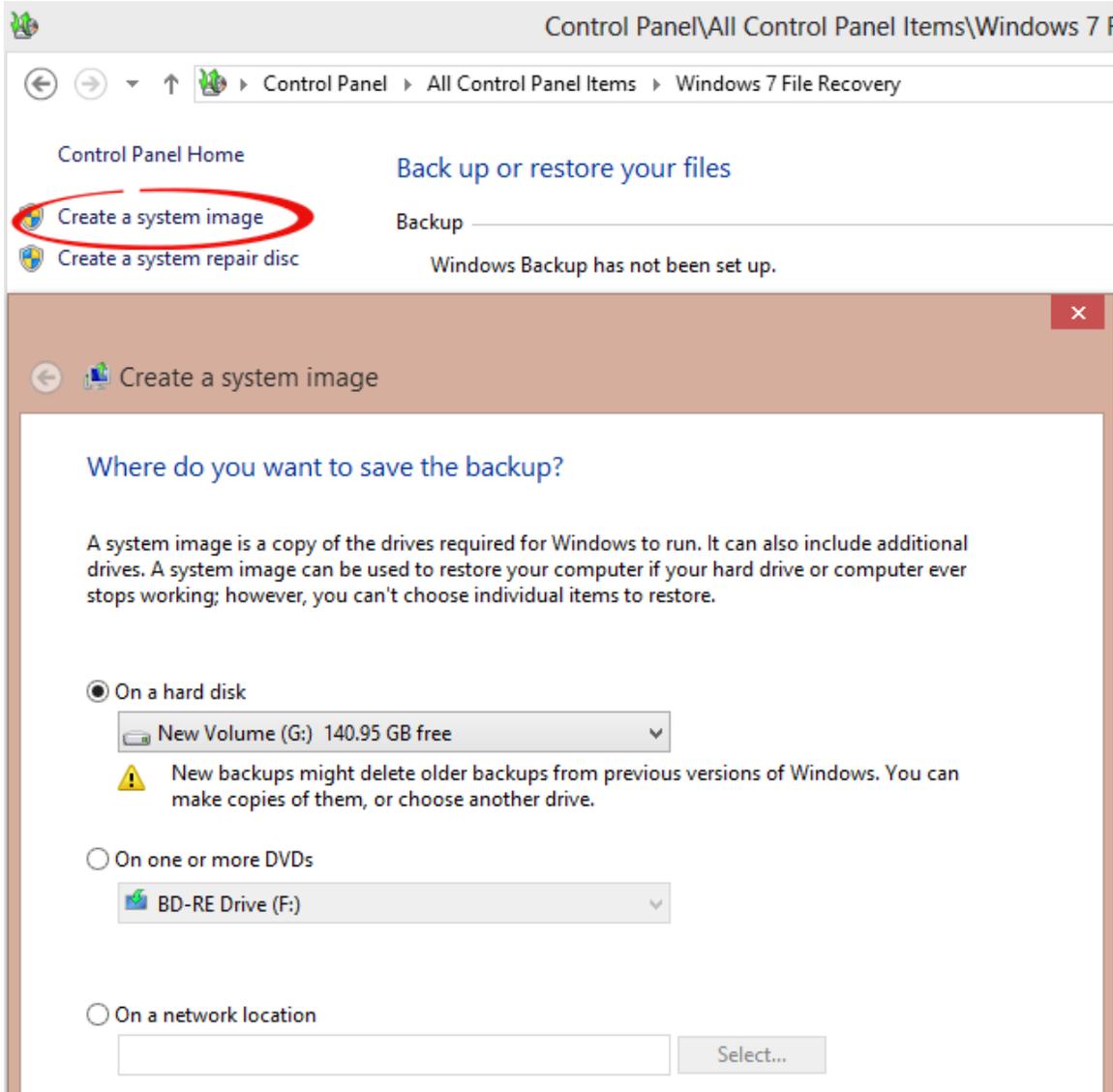
# Windows 10 for Microsoft Office users

Repair / Recovery - System Image

## SYSTEM IMAGE

Another option is the System Image, a backup of the drives that Windows uses to start up. Unlike other backups, this is an 'all or nothing' job, you have to back up the entire drive/s and can only restore the entire drive/s.

In Windows go to Control Panel | Backup and Restore (Windows 7). There's 'Windows 7' again.



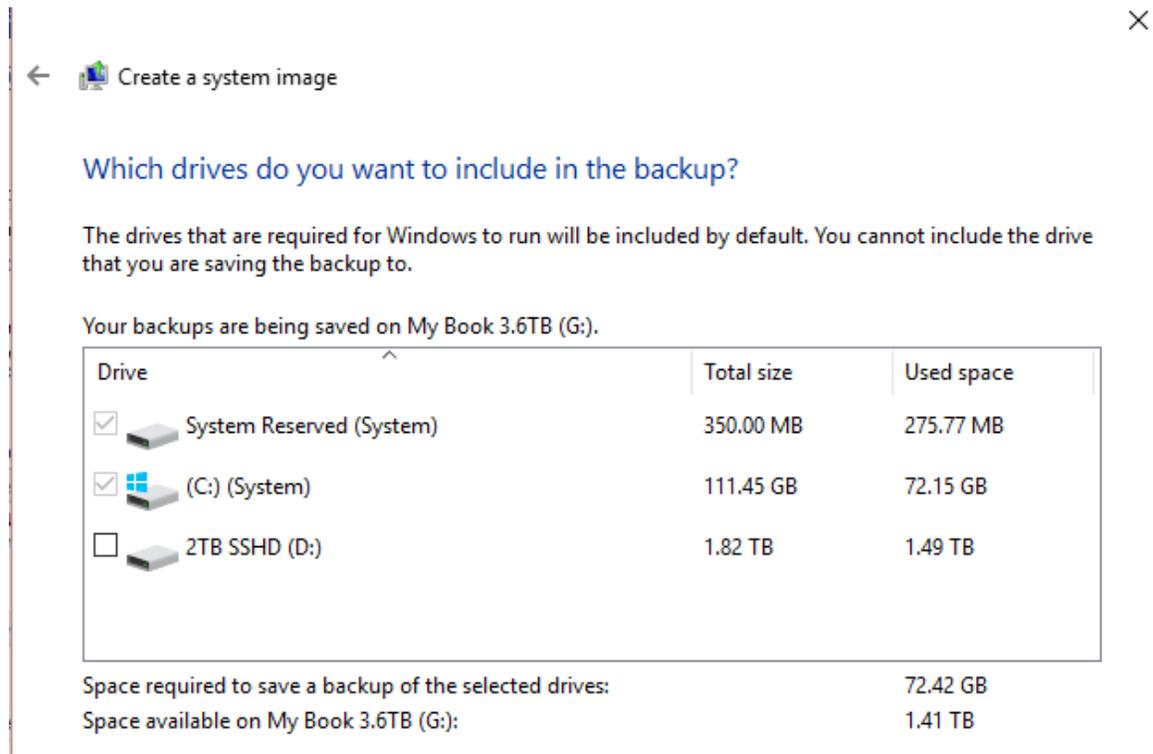
Windows has the same option hiding at the bottom left of the Control Panel | File History dialog.

As you can see, you can backup to a drive, network location or DVD. In practice multiple DVD's would be time-consuming, cumbersome and best avoided.

## Windows 10 for Microsoft Office users

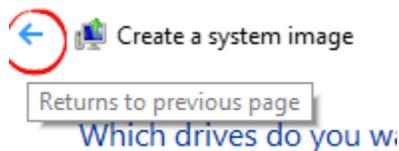
Repair / Recovery - System Image

Unfortunately, there's no estimate of the backup size on the above screen. To get that choose an option and click Next.



Now you can see which drives will be backed up. Only whole drives can be selected. In this case the System hidden drive and Drive C. (This is an example of a fast Solid State Drive as Drive C with a slower but much larger data Drive D).

Now you know how much space is needed, you may want to return to the previous page and select another destination. Do that with the left arrow at top left of the dialog.

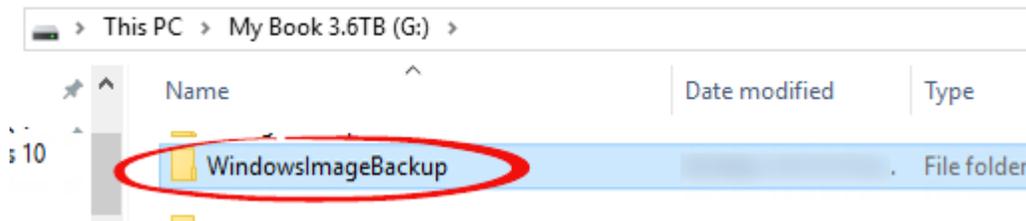


Start the backup to the selected destination then continue with your work. The backup will operate in the background.

# Windows 10 for Microsoft Office users

## Repair / Recovery - Backup

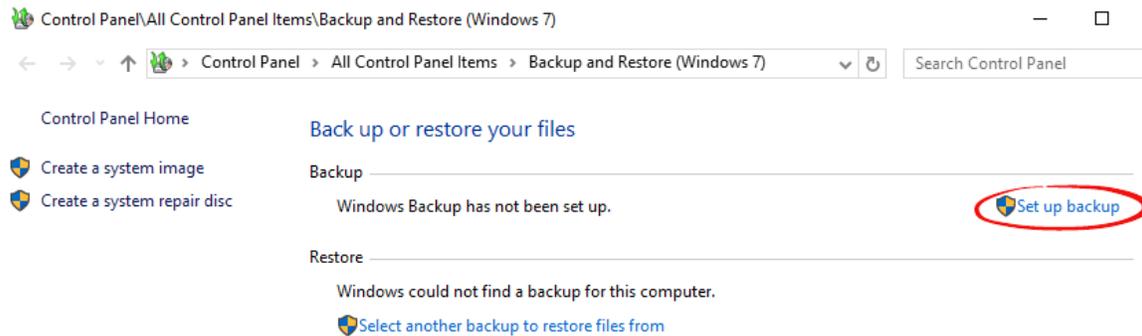
The backup is saved in a folder called WindowsImageBackup that's blocked from normal access.



You can save system image backups from multiple machines to the one destination drive. That means you can save many system images to a single portable drive or a common network share. Each system image has the computers identity saved so a restore will only use the correct backup.

## BACKUP

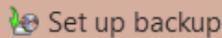
A traditional 'Windows Backup', as seen in Windows 7 and earlier versions of Windows is still available in Windows. At Control Panel | Backup and Restore (Windows 7).



## Windows 10 for Microsoft Office users

Repair / Recovery - Backup

From there it's the same as the Windows 7 backup. You can choose a preset backup of essential files or your own selection.

 Set up backup

### What do you want to back up?

Let Windows choose (recommended)

Windows will back up data files saved in libraries, on the desktop, and in default Windows folders. Windows will also create a system image, which can be used to restore your computer if it stops working. These items will be backed up on a regular schedule.

Let me choose

You can select libraries and folders and whether to include a system image in the backup. The items you choose will be backed up on a regular schedule.

Our [Office Backup Handbook](#) has a lot more on backups of Windows, Office documents and settings including Outlook.

### THIRD PARTY TOOLS

There are plenty of disk imaging tools available – these are similar to the [System Image](#) feature in Windows but with a lot more flexibility and features. Modern disk image programs allow selective viewing and restore of individual files. They should also let you restore to a different drive from the original source.

#### DRIVEIMAGE XML

[DriveImage XML](#) isn't always pretty but it's powerful and free for individuals.

This product's main boast is that images are stored in XML format so they can be accessed by third-party tools. We're not sure that's much help to most people but it may be reassuring.

At the time of writing, DriveImage XML is only marked as compatible up to Windows 8. However various reports confirm it works fine with Windows 10, which is to be expected.

#### NORTON GHOST

This is backup software for grown-ups. [Norton Ghost](#) has been around since 1995 and was originally an innovative but limited program. It could take a drive image and restore it later, albeit with difficulty.

## Windows 10 for Microsoft Office users

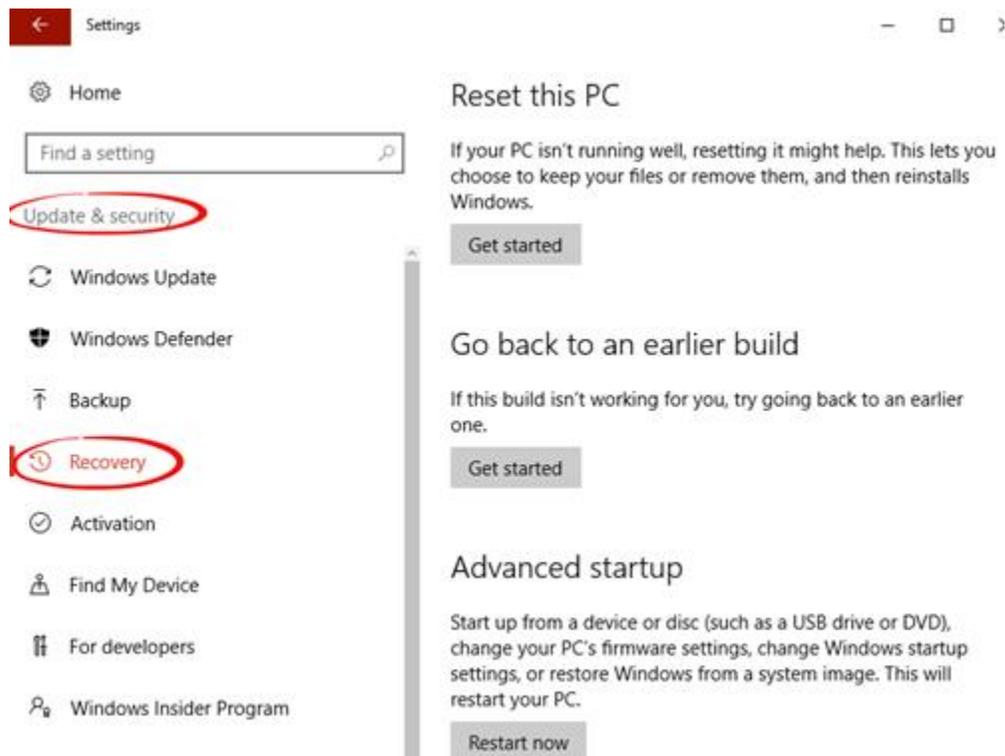
Repair / Recovery - Reinstall Windows

These days, Ghost is now called the 'Ghost Solution Suite' and is a comprehensive backup solution.

Windows users might be interested in the feature that will convert a backup into a virtual disk to be used by Hyper-V.

## REINSTALL WINDOWS

Windows 10 has various options for reinstalling Windows in various ways. Go to Settings | Update and security | Recovery.



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*Before you use ANY of these options, make sure you have full working backups of all your files, documents, programs and settings.*

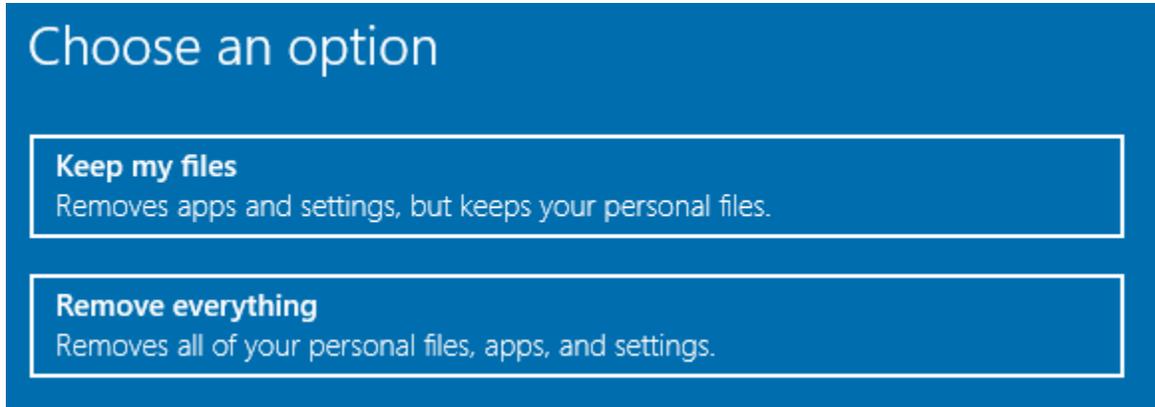
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## Windows 10 for Microsoft Office users

Repair / Recovery - Reinstall Windows

### RESET THIS PC

Windows is reinstalled. There is an option to keep personal files but otherwise everything is removed from the computer.



### GO BACK TO AN EARLIER BUILD

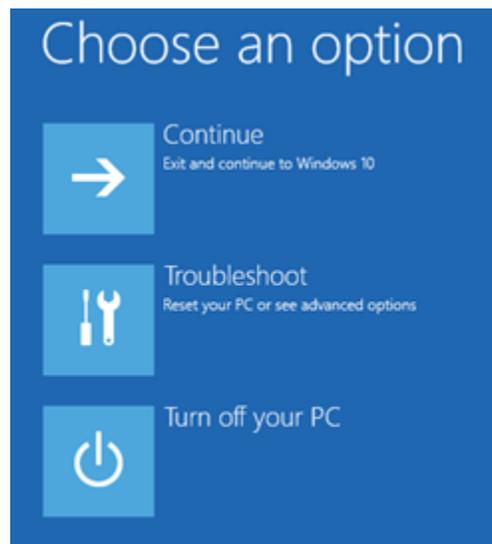
When Windows is updated it keeps the previous version (build) in a separate folder (/Windows.old). You can remove it via Disk Cleanup.

This option will 'roll back' to the previous build.

### ADVANCED STARTUP

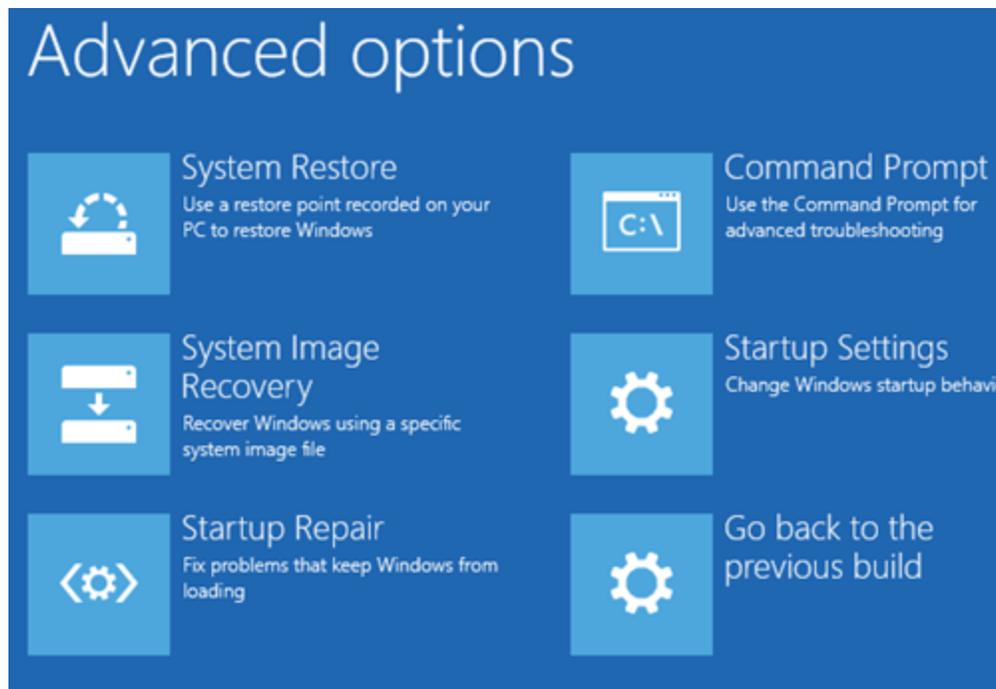
With the major changes in the way Windows starts, gone are the days of hitting a key repeatedly to reach a special startup menu.

That's been replaced with this button. Click it to restart Windows and see a series of troubleshooting menus.



## Windows 10 for Microsoft Office users

Repair / Recovery - Reinstall Windows



### START FRESH

At the bottom of this settings page is a new option, added relatively late in the development of the Anniversary update.

### More recovery options

[Learn how to start fresh with a clean installation of Windows](#)

## Windows 10 for Microsoft Office users

Repair / Recovery - Reinstall Windows

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*As we type this, the 'Start Fresh' option hasn't been fully integrated into Windows 10. It's still a separate downloadable tool intended for testers/insiders. Only three languages are supported. We suggest waiting a while before using this option.*

---

Start Fresh will reinstall Windows, removing all programs except any that come standard with Windows or from Microsoft, like Microsoft Office.

It's being promoted as a way to clear new computer of unwanted software added by the computer maker. Most of the software added by PC makers isn't necessary or is a lure to pay for extras.

Like 'Reset this PC', you get a choice to retain personal files.

## SETUP FOR MICROSOFT OFFICE

Here's some suggestions for setting up Microsoft Office programs on Windows 10.

Most likely you make heavy use of some Office programs, like Outlook and Word. Others occasionally, such as Excel or PowerPoint. While others rarely get a look; Access and Publisher.

Here's suggestions for how best to place launch icons for each type of program.

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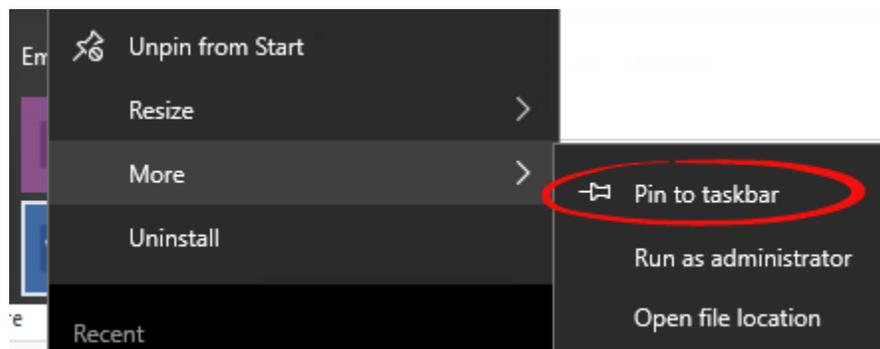
*You can use these tips for different Office apps and non-Office programs.*

---

### PIN TO TASKBAR

Just like in Windows 7 and 8, you can add some programs to the taskbar. This is great for regularly used programs like Outlook or Word that are probably open most of the time anyway.

Find the program on the Start or Apps menu, right-click and choose 'Pin to taskbar'.



Now PowerPoint 2013 shows up on the desktop taskbar whether it's open or not.



## Windows 10 for Microsoft Office users

### Setup for Microsoft Office - Pin to Start

## PIN TO START

We go into detail about the Start Menu in [this chapter](#). Here's an example group of the Office apps together.



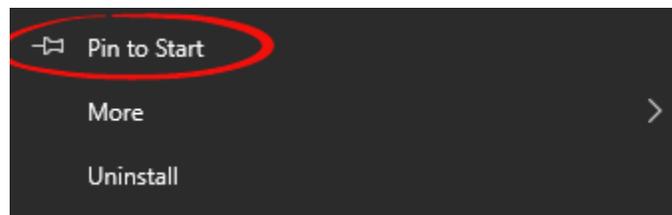
The Excel 2016 app is large because it's used occasionally, but not so often that it's pinned to the taskbar.

The OneNote and PowerPoint tiles are in the second column because they are called from time to time.

In the next column are Word and Outlook. These are also on the taskbar, but included here for the sake of completeness (and if you've gone to the Start Menu, forgetting that the icon is on the taskbar).

Finally, Publisher and Access which rarely get opened. These could have been dropped from the Start Menu entirely and opened from the All Apps list or Search.

To make these changes, right-click on an app in the taskbar or apps list and choose 'Pin to Start'.

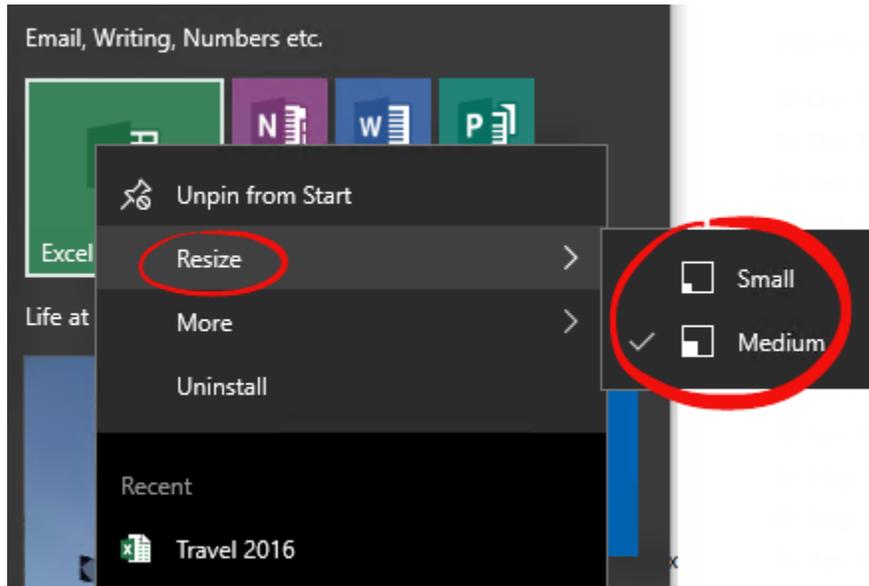


If it says 'Unpin to Start' then the tile is already on the Start Menu. Find the tile, click and drag it to the location/group you want.

## Windows 10 for Microsoft Office users

### Setup for Microsoft Office - Set Default Apps

Right-click on the tile and choose the size you prefer.



## SET DEFAULT APPS

In Windows, each file extension is linked to a default program to open that type of file. In Windows that's expanded to include Modern Apps as well as traditional Windows programs.

You can change the default program that opens for each file extension. See below for an example of how to change the default program for a particular file extension. While the dialog boxes have changed their look, the procedure is the same as in Windows 7/8.

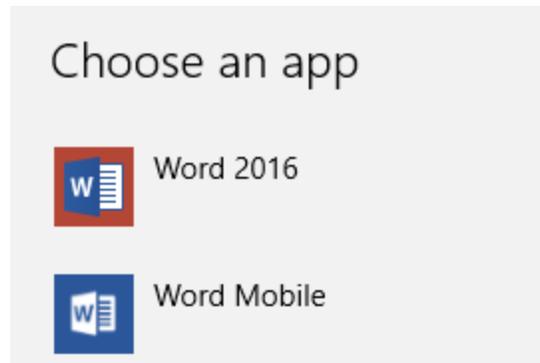
## WORD VS WORD

Microsoft Office users with Windows 10 might have two copies of Microsoft Word!

There's full Microsoft Word as part of the Office suite. Also Word Mobile, the modern app available free to Windows 10 users.

## Windows 10 for Microsoft Office users

### Setup for Microsoft Office - Set Default Apps



The icons of the two are almost indistinguishable.

There are also Excel and PowerPoint Mobile apps.

When you're choosing the default apps for Office files, make sure you choose the right one.

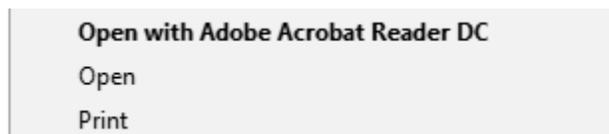
### PDF FILES

PDF files can be opened to a bewildering range of programs, depending on what you have installed on your computer.

Managing PDF defaults is a common question, so we'll use it as our example for how to change the default app from Explorer. This is the most common way to do it; via the right-click menu for a file of that type.

### CHANGE DEFAULT APP

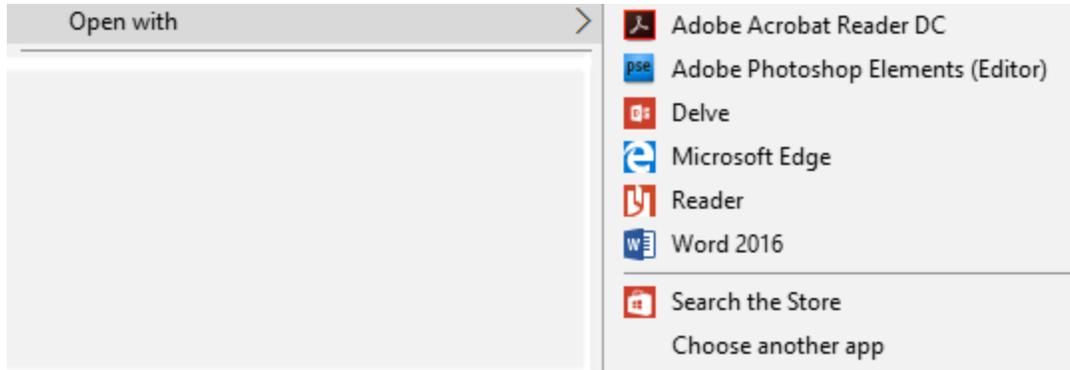
The default program (the one used when you double-click) is at the top of the right-click menu – in this case Adobe Reader desktop.



Here's a typical 'Open with ...' list when you right click on a PDF file in Windows.

## Windows 10 for Microsoft Office users

### Setup for Microsoft Office - Set Default Apps



The list on your computer will be different, but will include some of the following

**Adobe Acrobat Reader DC** is the standard Windows program as supplied by Adobe.

#### **Adobe Photoshop Elements**

**Delve** a tool from Microsoft for work and education users.

**Reader** is a multi-format reader app from Microsoft, supplied with Windows 10.

**Word 2016** is Word for Windows 2016 which can directly open and convert PDF files.

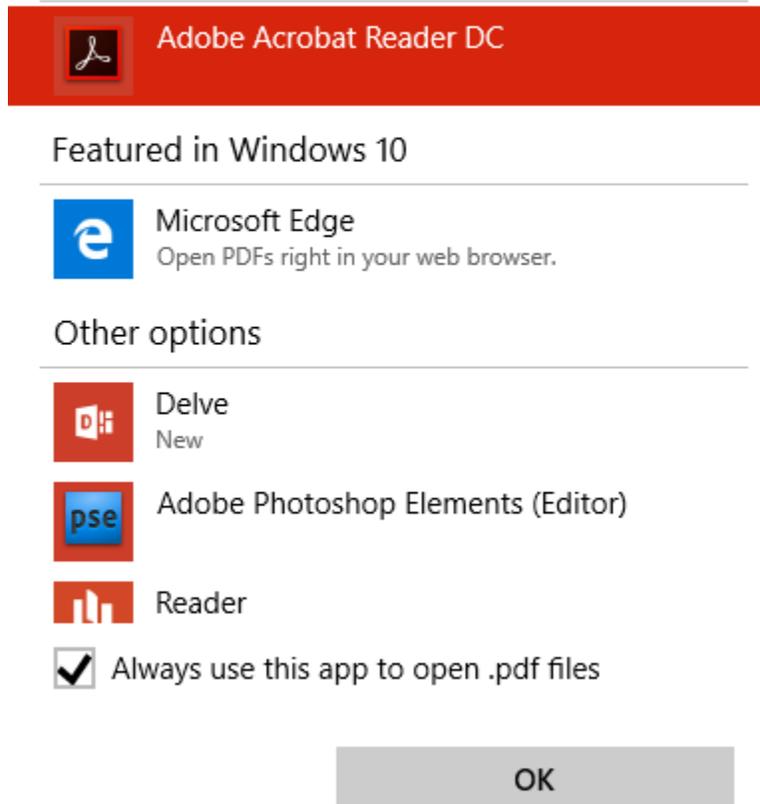
## Windows 10 for Microsoft Office users

### Setup for Microsoft Office - Set Default Apps

To change the default, right-click on a file with that extension, go to Open with ... Choose another app. Choose the program you want to use. If it's a permanent change check 'Always use this app to open .pdf files'. Click OK.

### How do you want to open this file?

Keep using this app



This dialog looks a little different to previous versions of Windows but does the same job. 'Keep using ...' confirms which program is the current selection. Scroll down to 'More apps' which lets you select other programs.

Note: the dialog talks about 'Use this app ...' but you can select either a Modern/tiled app or a Windows program.

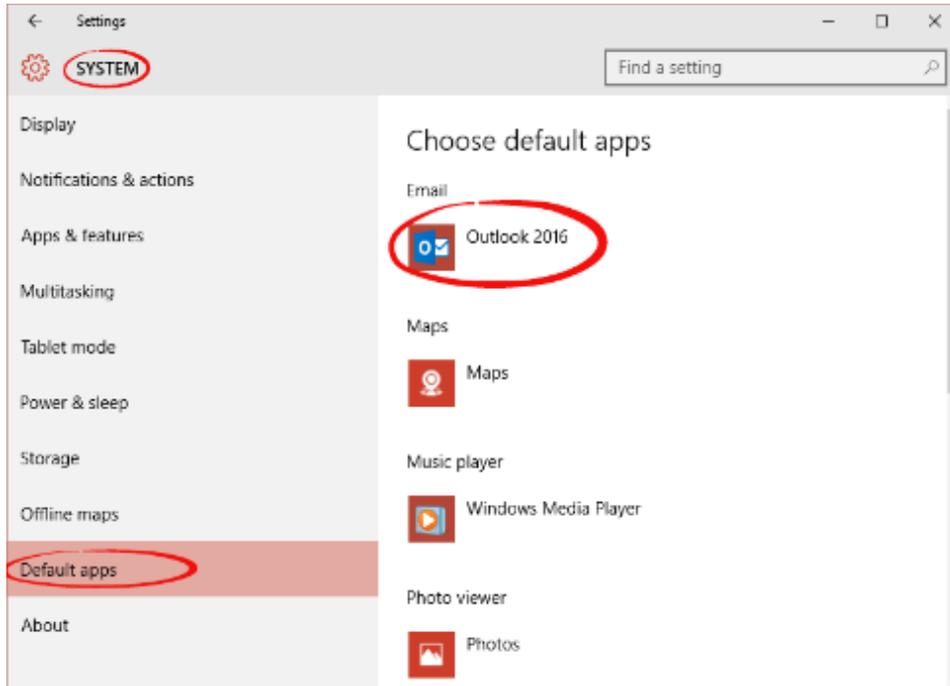
Do the same thing for any file type which you want to open in a desktop app. For example, music and video files to open in a player like VLC.

# Windows 10 for Microsoft Office users

## Setup for Microsoft Office - Set Default Apps

### DEFAULT APPS

Windows 10 has place to see the default apps for various file types. Settings | System | Default apps.



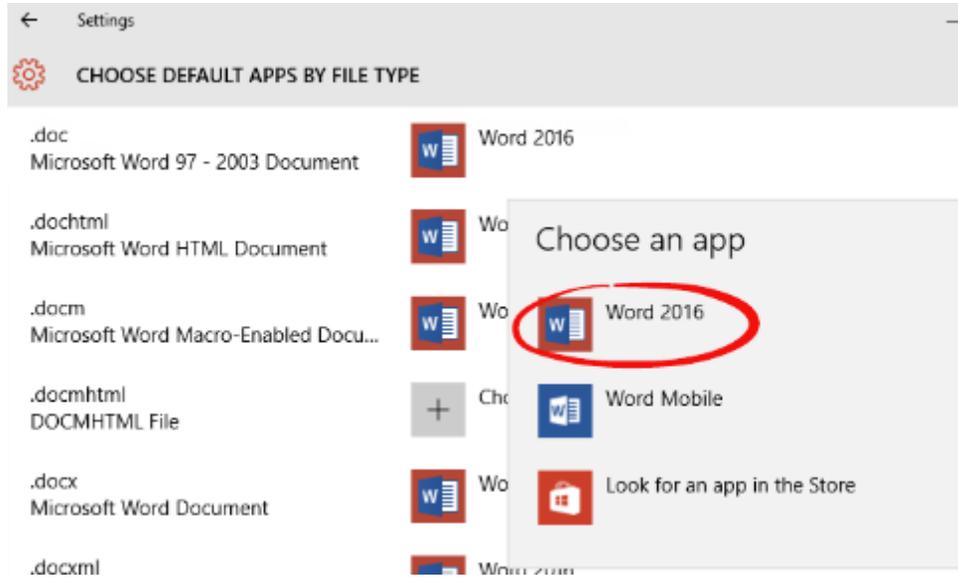
Here you can change the defaults for Email, Maps, Music, Photo viewer, Video player and Web browser. As you can see, this is where you can set Outlook to deal with email.

# Windows 10 for Microsoft Office users

## Setup for Microsoft Office - Set Default Apps

### DEFAULT APPS BY FILE TYPE

Settings | System | Default apps then scroll to the bottom for a link to Choose default apps by file type.



This list lets you see many file types at once. For example, .doc and .docx for Word plus other, less used, extensions like .dotx and .docm

# Windows 10 for Microsoft Office users

## Setup for Microsoft Office - Set Default Apps

### DEFAULT APPS BY PROTOCOL

Settings | System | Default apps then scroll to the bottom for a link to Choose default apps by protocol.

Most of the protocols and settings can be left alone, but occasionally they go astray. One that causes trouble is the Mailto: link. Most likely you'll want these links to open a new message in Outlook. If it stops doing that, come to this setting page to fix it.

The screenshot shows the 'CHOOSE DEFAULT APPS BY PROTOCOL' settings page. The 'MAILTO' protocol is circled in red. A 'Choose an app' dialog box is open, showing 'Outlook 2016' selected and circled in red.

Protocol	Default App
LYNC15CLASSIC URL:lync15 Protocol	Lync (desktop)
<b>MAILTO URL:MailTo Protocol</b>	Outlook 2016
MAPS URL:maps	Maps
MICROSOFT-EDGE URL:microsoft-edge	Microsoft Edge
MICROSOFT.WINDOWS.CAMERA URL:microsoft.windows.camera	Camera
MICROSOFT.WINDOWS.CAMERA.PICKER URL:microsoft.windows.camera.picker	Camera
MICROSOFT.WINDOWS.PHOTOS.CROP URL:microsoft.windows.photos.crop	Photos
MICROSOFT.WINDOWS.PHOTOS.PICKER URL:microsoft.windows.photos.picker	Photos

Choose an app

- Google Chrome
- Mail
- Outlook 2016**
- Look for an app in the Store

# MICROSOFT ACCOUNT SECURITY

Most Windows 10 users will have a Microsoft account but is it as secure as it should be? Two-step authentication is becoming essential for the key Microsoft account.

If you have Windows 10, Windows 8, Office 365, OneDrive, Outlook.com, Windows Phone or (likely) Skype then you'll have a Microsoft account. It's the single login for all Microsoft online services and, for most, their Windows computers too.

Your life can become very difficult and troublesome if your Microsoft account is hacked or taken over. The hackers can access your online documents, possibly send malicious emails, change the password to lock you out of your own account and many other 'unhelpful' things.

Two-step authentication is highly recommended for all key online accounts, especially email accounts. In this chapter we'll show you how to setup '2-fac'. As usual, we won't just give you the official, overly simplistic, line.

We'll show you the pitfalls and hassles of two-step authentication but, believe us, it's worth the trouble.

## MAKE IT HARD FOR HACKERS

Make the hackers job a lot more difficult instead. Set up Two-Step Authentication. This article will explain what it is, how it works and how to setup for a Microsoft account.

There's a similar process for other major services – most notably Google/Gmail (check the end of this article).

## WHAT IS IT?

Two-step authentication requires a second password or code from another source to open your account.

Instead of just entering a name and password. The second code is usually sent via text message to your phone.

Even if someone gets/guesses your password, they can't access your Microsoft account. Without the second code via your phone etc., the name/password combination is useless.

## OUT OF RANGE

Ah, I hear you cry ... what if I don't have a phone, it's lost or I'm out of mobile phone range?

# Windows 10 for Microsoft Office users

## Microsoft Account Security - Setup

Two-factor requires a pre-authorized mobile phone or another device – a smartphone is best but a simple phone or tablet is enough.

You can use a prearranged portable device (Apple, Android or Windows) to generate a security code if you're out of phone range.

We'll show you how to setup the other devices as part of two-factor authentication.

## TRUSTED DEVICES

Two-step authentication doesn't mean you'll be pestered with SMS each time you login to your Microsoft account. You can nominate devices or programs as 'trusted' so you can login from them using just name/password.

The extra, second, step is only required from a new or unexpected computer or device or a new Microsoft account related application in installed.

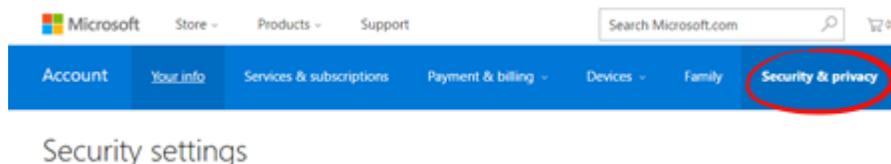
## SETUP

Setting up two-factor authentication isn't easy. Well, according to Microsoft and Google it is easy but the setup can get really frustrating. To do it properly and without raising blood pressure needs some preparation.

Make the setup easier and less frustrating we have some suggestions:

- Setting up two-step authentication is time consuming. It's time well spent. Set aside an hour or so ... though it may take a lot less depending on your exact needs.
- Be on a stable Internet link. It doesn't have to be particularly fast but it should be stable so you can browse the web easily.
- Have as many of your devices as possible (desktop, laptop, phones, tablets) on hand and connected to the Internet. That's so you can configure them and apps all at the same time. This isn't essential but it's a lot easier to do them all at once.
- Depending on the service you're setting up, you may need to be in mobile phone range to accept an initial SMS/text or voice message.

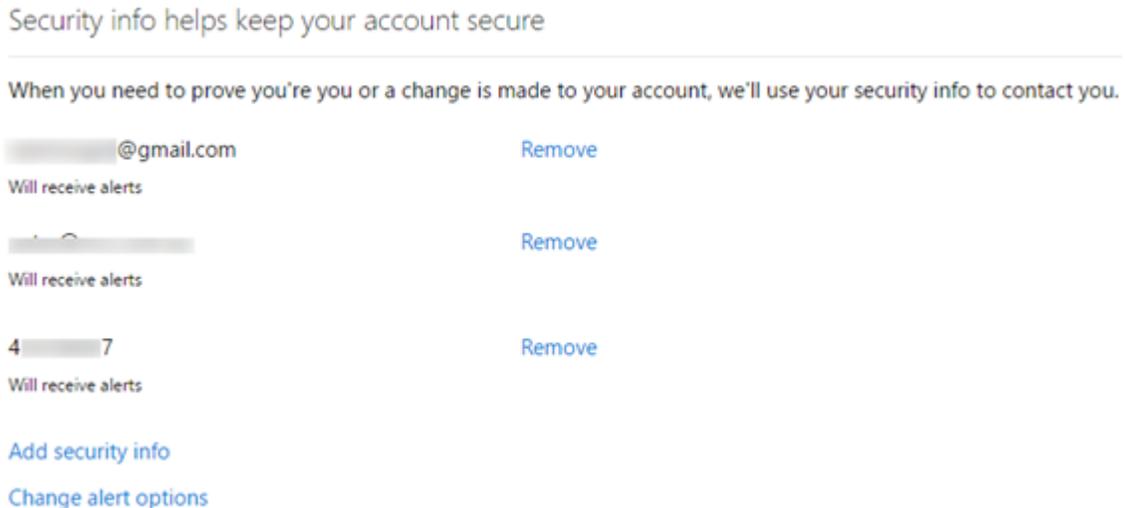
Now you can go online in your browser (Microsoft.com, Office.com etc) and login to your Microsoft account, Security and Privacy | Security Settings:



## Windows 10 for Microsoft Office users

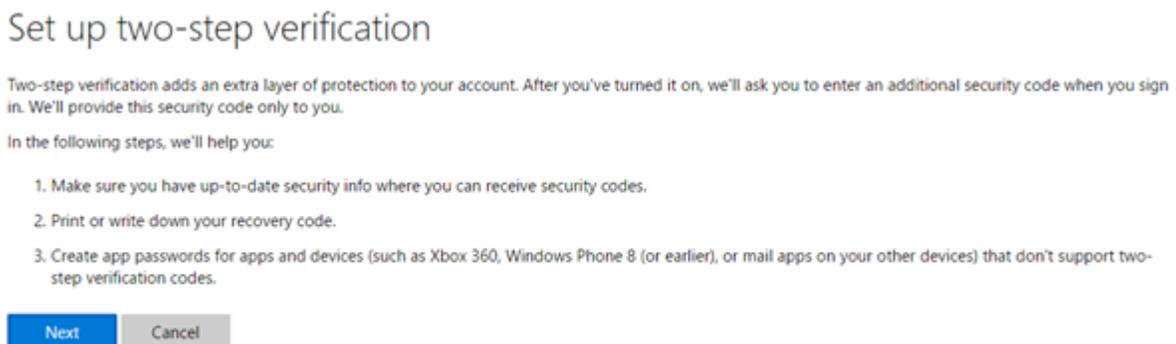
### Microsoft Account Security - Setup

- Make sure your phone numbers, alternate/recovery email addresses are correct in your Microsoft account. These are some contact methods that two-factor verification can use.



- Check that you have a recovery code and it's saved properly. If you don't, one will be created for you during the Microsoft two-step authentication setup. The recovery code is a 25 character code (it looks like an Office Product Key) that will let you unlock your Microsoft account if all else fails.

Now (finally!) you can setup two-factor verification. On the Security Settings page, click the two-factor verification link



If you haven't already, a web page will show make and show your Recovery Key.

As already mentioned, copy and save this Recovery Key somewhere safe. It's your 'last resort' way to access your Microsoft account if all other entry methods fail.

# Windows 10 for Microsoft Office users

## Microsoft Account Security - Authentication Apps

### AUTHENTICATION APPS

Authenticator apps (Microsoft calls them Identity Verification apps in some places) let you get an authentication code when you can't receive SMS or voice messages. Or you're charged for incoming voice/texts. Quite often, the authenticator app is the easiest way to use two-factor verification.

There are apps for Apple and Android that you can download from the iTunes Store and Google Play respectively. The Microsoft two-step authentication setup will give you links to each app or on the Security Settings page look for the 'Set up identity verification app' link.



Once you've installed the Apple/Android app, you need to authenticate it with your Microsoft account. Each app will take you through that process.

Naturally, there's a Windows Phone app too. Windows Phone app uses a QR code (Microsoft calls it a Barcode) to verify the phone app. In the app, it can take a photo of the QR code on your main computer screen and complete the verification.

## Windows 10 for Microsoft Office users

Microsoft Account Security - Authentication Apps

### Set up an authenticator app for your Windows Phone

1. [Install Microsoft's authenticator app.](#) (This link will open in a new tab.)
2. Open the app.
3. Pair the app with your Microsoft account by scanning this bar code.



[I can't scan the bar code](#)

4. Verify the pairing was successful by entering a code below.  
Code generated by app

**Important:** if you get a new phone or device, remember to install and verify the authenticator app.

The Security Settings page has an option to disable the existing authentication apps. Unfortunately, you can't disable a single app/device, you have to disable them all.

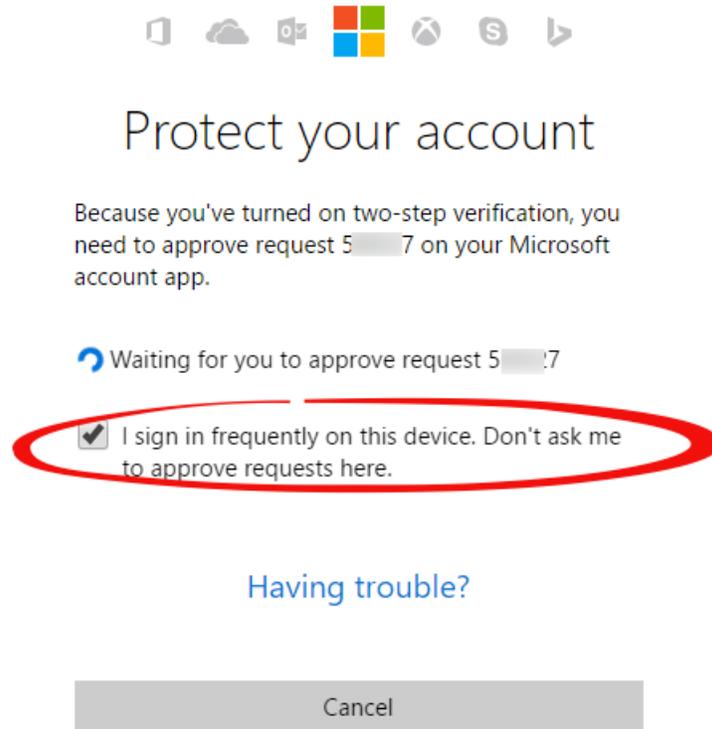
#### HOW IT WORKS

Once you have an authenticator app installed and verified, here's how it works.

## Windows 10 for Microsoft Office users

Microsoft Account Security - Authentication Apps

You try to login to a service, for example the Onedrive sync program in Windows 10. If you're prompted for a two-step authentication, you'll see something like this:

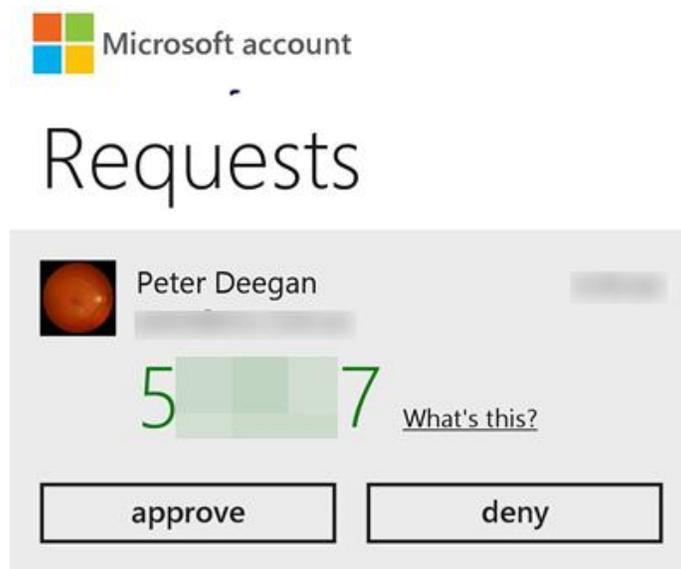


As you can see, there's a check box to stop further two-step approvals from that device. In other words, tick the box to give ongoing verification to requests from that device.

## Windows 10 for Microsoft Office users

Microsoft Account Security - Authentication Apps

Look on your device and the authentication apps. If the app is running and online it should receive the authentication request and all you need to do is tap a button to approve it.



Don't see the request you're waiting to approve?  
[Use a security code](#)

If the authentication doesn't happen in time you'll see a message like this:

### We didn't hear from you

We sent an identity verification request to your Microsoft account app, but we didn't get your approval in time.

[Send another request to my Microsoft account app](#)

#### Having trouble?

[Enter a security code](#) from your Microsoft account app instead.

If you can't use an app right now [get a code a different way](#).

Cancel

Your choices are:

## Windows 10 for Microsoft Office users

Microsoft Account Security - Authentication Apps

**Send another request** – maybe you had to find your phone, turn on the device or turn on the authentication app and simply ran out of time?

**Enter a security code** — the authenticator app can display a security code which you can type in to complete the identity verification. This works even if the device is totally offline.

### OFFLINE

Authenticator apps work best when they are connected to the Internet. However, the apps will work even if totally disconnected from the Internet.

Click on the appropriate 'Use a security code' link on the app and you'll be shown a code to type into page asking for authentication.



## Enter code

Because you've turned on two-step verification, we need to verify your identity. Open the Microsoft account app, tap "Use a security code" and enter the code below.

If you can't use an app right now, [get a code a different way](#).

[Send an identity verification request to my Microsoft account app](#).

This works, in part, because of all the devices are properly time synchronized. Modern computers and devices keep accurate time because of occasional checks with a special server. Don't be tempted to turn time synchronization off because it could eventually stop an authenticator app.

### OTHER AUTHENTICATION OPTIONS

If you can use an app, you'll be given options including 'get a code a different way'.

## Windows 10 for Microsoft Office users

Microsoft Account Security - Authentication Apps

# We didn't hear from you

We sent an identity verification request to your Microsoft account app, but we didn't get your approval in time.

[Send another request to my Microsoft account app](#)

## Having trouble?

Enter a security code from your Microsoft account app instead.

If you can't use an app right now [get a code a different way.](#)

Cancel

Click on that link to see the message options available to you. They are the phone numbers and email addresses setup in your security settings.



## Protect your account

You need to use a security code to verify your identity. How would you like to receive your code?

Use an app

Use an app

Text [redacted] 7

Email [redacted] \*@[redacted].com

Email p [redacted] @[redacted]

I don't have any of these

Cancel Next

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## Windows 10 for Microsoft Office users

Microsoft Account Security - Authentication Apps

If you don't have any of those available your choices are limited.

You need to use a security code to verify your identity. How would you like to receive your code?

I don't have any of these

If you can't access any of these, you need to update your security info at <https://account.live.com/proofs/marklost>.

### APP PASSWORDS

App Passwords are for programs or apps which need access to part of your Microsoft account like email (if you have Outlook.com or mail hosting) or OneDrive. These programs aren't able to verify themselves enough on their own (for example recent Outlook for Windows/Mac) and you need to separately let Microsoft know they are OK.

Each app password is a one-time code to authorize a particular app/program. You need a separate app password for each program/app. You can revoke approval for a particular app, if necessary.

On the Security Settings page choose 'Create a new app password'

## Use this app password to sign in

Enter the app password below in the password field of the app or device that can't accept security codes. If you're not sure how to update your app or device with an app password, [follow these steps](#).

App password

k [redacted] v

For each app or device that can't accept security codes, you need to create a new app password to use instead.

[Create another app password](#)

Done

## Windows 10 for Microsoft Office users

Microsoft Account Security - Google / Gmail

AND FINALLY ....

Things to close out the two-step authentication setup and reduce frustration later when an app won't work at the Moment of Maximum Inconvenience™.

- Sign into Microsoft.com (or some other MS site like OneDrive.com or Office.com) from all your computers / devices so you can get two-factor security codes and setup trusted devices.
- Start any apps which access your Outlook.com mail or OneDrive files to see if they work or perhaps need an app password. In our testing, the OneDrive app on a Windows 10 computer needed a separate two-factor verification.

Two-factor authentication can be frustrating at first. Unless you're more organized than 99% of the population, you'll find other programs/devices that need 'trusting' or a special app password. Keep your phone handy for a few days as requests for verification pop up.

But once all those issues are sorted, two-step verification will become an occasional matter rather than a hassle. It is definitely a good measure for anyone concerned about hacking or intrusion into their digital life.

## GOOGLE / GMAIL

Google accounts have a similar option called 2-step verification. It has the same basic features as Microsoft.

After the preparation we suggested above. Start from [My Account](#) | Sign-in & Security | Signing in to Google | 2-step verification.

## Windows 10 for Microsoft Office users

Microsoft Account Security - Google / Gmail



**Protect your account with 2-Step Verification**

Each time you sign in to your Google Account, you'll need your password and a verification code.  
[Learn more](#)

 **Add an extra layer of security**

Enter your password and a unique verification code that's sent to your phone.

 **Keep the bad guys out**

Even if someone else gets your password, it won't be enough to sign in to your account.

[GET STARTED](#)

The setup first requires a text or voice message to your phone number. You need to be in phone range for the setup.

[Google Authenticator apps](#) are available for Android (naturally), Apple and Blackberry devices but not Windows devices.

Once setup you'll be able to create app passwords where necessary. Most commonly this will be for mail programs (like Outlook for Windows/Mac) to access Gmail.

## MULTIPLE USERS

Windows lets you have multiple logins or Users on a single computer. It also lets you have multiple logins open and running at the same time.

Each account you've opened can have programs running in the background while you are logged into the account appearing on the screen in front of you.

Most of the same software is available to all user accounts. Certainly Office for Windows and the Office Mobile apps are available to all comers.

You don't have to restart the computer to login as a different user. More than one user can be running at the same time for you to switch between quite easily. Only one user appears on the screen, for the others are hidden but still running.

The intention is for each user to be a separate person who shares a single computer, but it doesn't have to be that way. One person can setup multiple logins to separate the different parts of their life, such as a login for personal matters, email etc, and another user linked to work (perhaps a special login to the work servers?). Maybe another account for a hobby or volunteer position?

Finally, a 'Guest' account for visitors who want to browse, check their mail etc. Windows 10 has an in-built Guest account but some people like to have their own version with more customization.

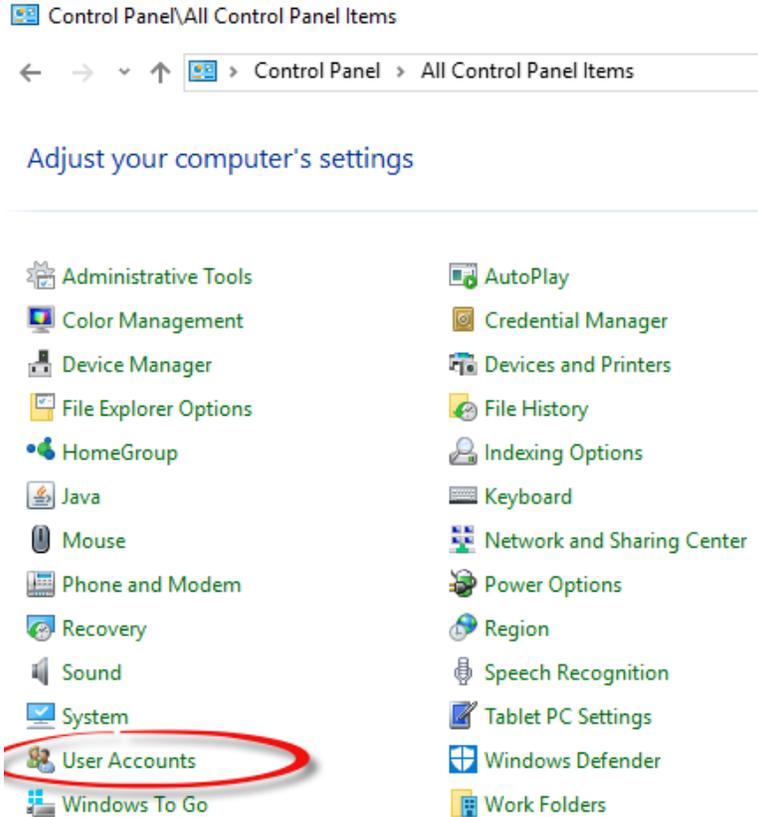
We'll show you how to create different user accounts, login to each one and quickly switch between users. We'll also explain how to share documents so they are available to multiple users on the same computer.

# Windows 10 for Microsoft Office users

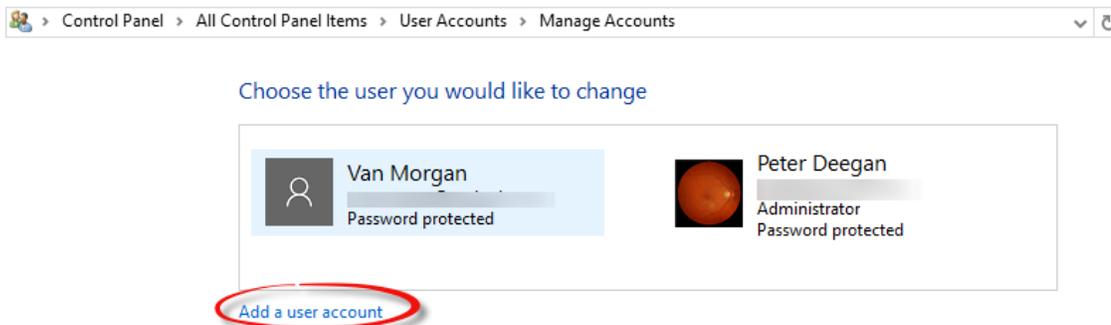
Multiple Users - Add Users

## ADD USERS

All the user controls are at Control Panel | User Accounts



Then choose Manage Accounts (you may need to verify your admin login at this point).



Click on Add a user account.

# Windows 10 for Microsoft Office users

## Multiple Users - Add Users

The first screen offers the option to add another Microsoft stored user account, meaning an existing Microsoft account. Or click on the link to create a new Microsoft account (aka Sign up for a new email address).



If you want to create another user account for yourself or a special account like 'Guest' then you'll want the option hiding at the bottom 'Sign in without a Microsoft account'. It's tagged 'not recommended' because there are some benefits to having a Microsoft account but mostly because Microsoft wants everyone to have one of their accounts.

## WITHOUT A MICROSOFT ACCOUNT

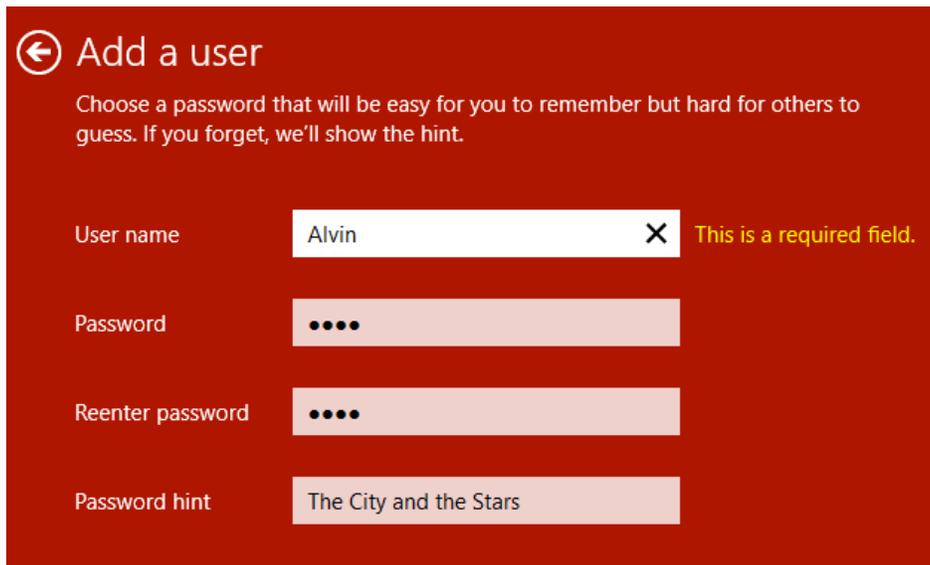
Just in case you missed Microsoft's preference, they make the point again on the next screen.



## Windows 10 for Microsoft Office users

### Multiple Users - Guest Account

Choose 'Local account' then enter a username, password and hint.



← Add a user

Choose a password that will be easy for you to remember but hard for others to guess. If you forget, we'll show the hint.

User name  ✖ This is a required field.

Password

Reenter password

Password hint

Now you have a new user in the list, click on the user for more options.



### GUEST ACCOUNT

There's been a Guest account for many versions but it's been dropped from the mid-2016 release of Windows 10 (for those keeping score, from build 10159 onwards). The options to turn the in-built Guest account on/off have been dropped from the main dialogs.

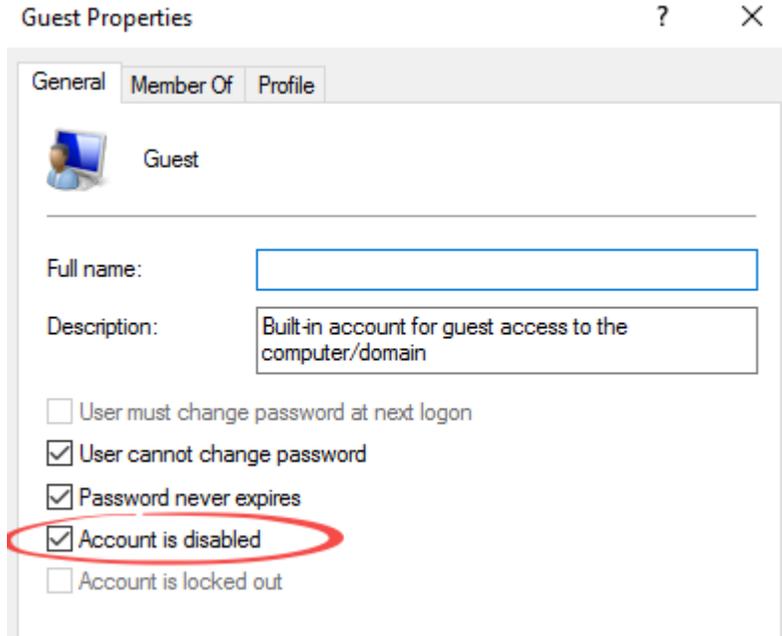
The Guest account was quite useful. You could quickly open it and a web browser

Various web sites offer fixes to restore the Guest account, but they don't work. At best, you'll see Guest in some lists of users, but you won't be able to login as Guest.

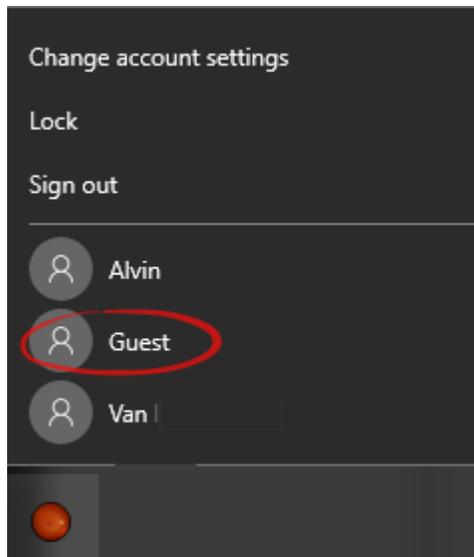
# Windows 10 for Microsoft Office users

## Multiple Users - Guest Account

You may find still see a Guest account in the Control Panel | Administrative Tools | Computer Management | Local Users and Groups list. UNchecking the 'Account is disabled' option won't restore the account to use.



With the Guest account enabled it appears on the user list.



But if you choose the Guest option, you'll just get a login screen with no Guest option.

### MAKE A 'GUEST' ACCOUNT

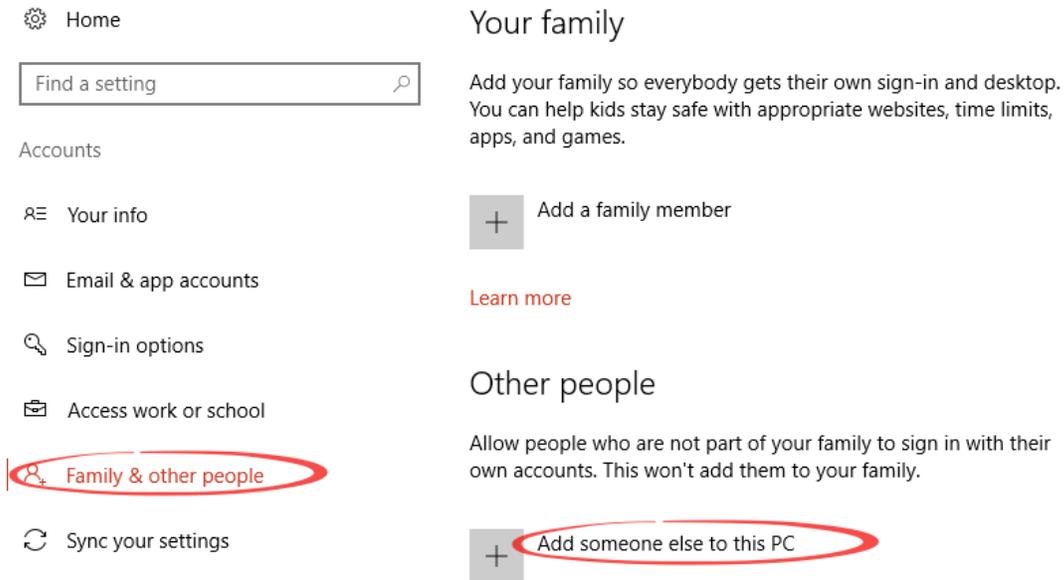
Microsoft may have dropped the Guest account but that doesn't stop you making one.

Simply add a user and call it 'MyGuest' with the password say, 'Guest' or 'MyGuest'.

# Windows 10 for Microsoft Office users

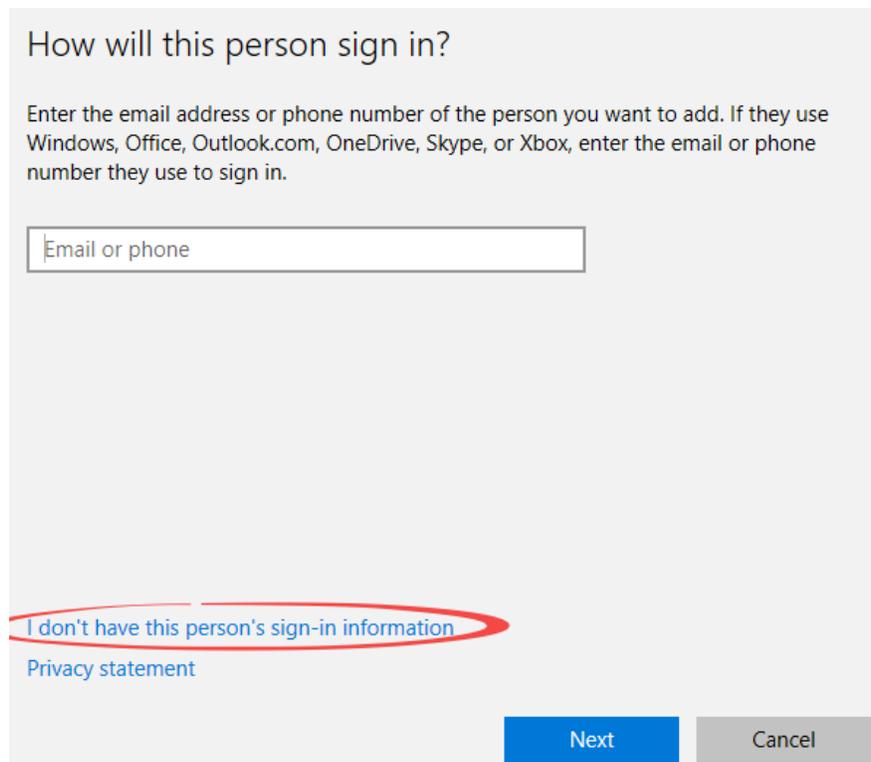
## Multiple Users - Guest Account

Here's how, start at Settings | Accounts | Family and other people:



'Add a family member' requires an email address but 'Add someone else to this PC' has the option to make a local account with no email address or Microsoft account.

Down the bottom of the next screen choose "I don't have this person's sign-in information".



# Windows 10 for Microsoft Office users

## Multiple Users - Guest Account

On the next screen ignore all the questions and click on the 'Add a user without a Microsoft account' link at the bottom.

Let's create your account

Windows, Office, Outlook.com, OneDrive, Skype, Xbox. They're all better and more personal when you sign in with your Microsoft account.\* [Learn more](#)

First name  Last name

[Get a new email address](#)

Password

United States

Birth month  Day  Year

\*If you already use a Microsoft service, go Back to sign in with that account.

[Add a user without a Microsoft account](#)

Next

## Windows 10 for Microsoft Office users

### Multiple Users - Guest Account

Now, finally, you get a place to create an account. The name 'Guest' is reserved so you have to choose another name for your guest account. We use 'MyGuest' and make the password the same as the user name.

Create an account for this PC

If you want to use a password, choose something that will be easy for you to remember but hard for others to guess.

Who's going to use this PC?

MyGuest

Make it secure.

.....

.....

Same Same ...

Next Back

Now you have a standard user account that you can open up for your guests.

### Other people

Allow people who are not part of your family to sign in with their own accounts. This won't add them to your family.

- + Add someone else to this PC
- Alvin  
Local account
- MyGuest  
Local account

# Windows 10 for Microsoft Office users

Multiple Users - Assigned Access / Kiosk mode

## ASSIGNED ACCESS / KIOSK MODE

Related to a 'guest' account is the Windows feature 'assigned access' which might be better called 'highly limited access'. A user can be limited to running a single Windows 10 app. In effect it's a 'Kiosk Mode' in another name.

Use Kiosk mode / Assigned Access to make your computer available but limited to a single app. Outside that app, the only choice is Ctrl + Alt + Delete to logoff entirely.

For a guest account, you could make a web browser the assigned app. That lets your guest check their web mail, news etc. but nothing else.

For a party, you could setup a Music app so people can select songs to play.

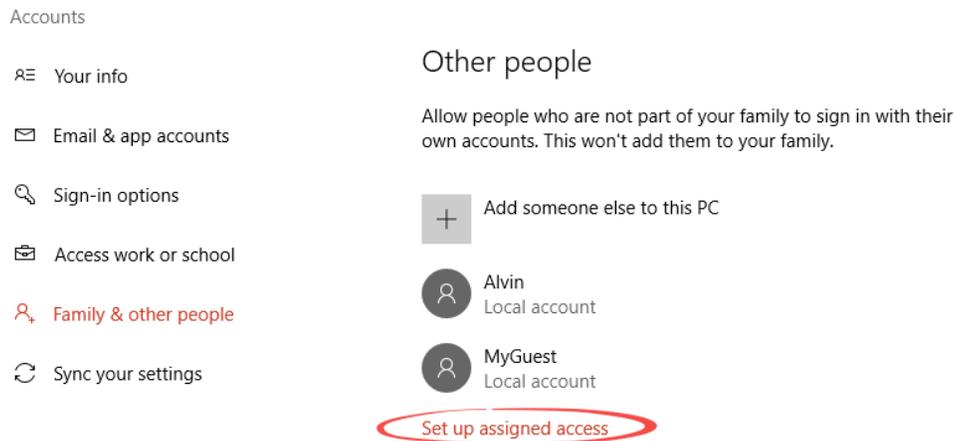
Setup a changing photo display or videos on repeat.

---

*It sounds great but don't get too excited. There's some catches which make 'Assigned Access' less than ideal.*

---

Setup 'Assigned Access' from Settings | Accounts | Family and other people | Set up assigned access.



Choose the user you want to assign access then choose an app.

## Windows 10 for Microsoft Office users

Multiple Users - Assigned Access / Kiosk mode



### Set up assigned access

#### Assigned access

You can restrict a local standard user account so that it only has access to one Windows app. Choose an app that is designed to work properly in assigned access.

[Learn more](#)

To sign out of an assigned access account, press Ctrl+Alt+Del.

Choose which account will have assigned access



MyGuest

Choose which app this account can access



Choose an app

When choosing the app you'll probably strike the curious catch in this feature.

#### Choose an app

If the selected account is currently signed in, you must sign out and sign in again to apply the changes.



Messaging



Microsoft Solitaire Collection



Microsoft Solitaire Collection Preview



Money

Scroll down the list of apps and you won't find a web browser (!) nor perhaps the app you want (of course what you see depends on which apps you have installed). Not even Microsoft's much hyped 'Edge' is available. That's because Edge is a traditional Windows application, not a Modern Windows 10 app.

Not all Windows 10 apps are available to Assigned Access. For example, only Groove Music is available as a Music player, not other music players.

# Windows 10 for Microsoft Office users

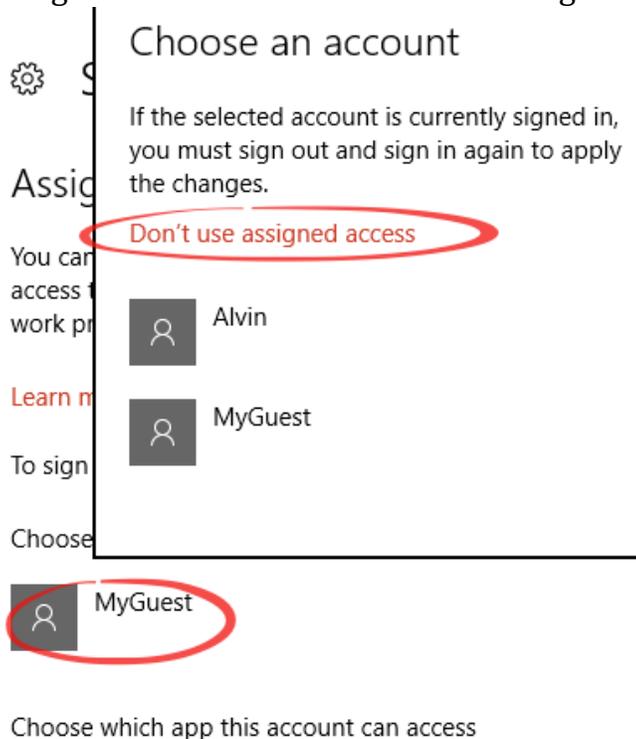
Multiple Users - Assigned Access / Kiosk mode

If you want the Assigned Access account to run automatically when the computer starts, you can use the [auto-login trick](#).

*You can only have one Assigned Access account at a time. It's not possible to have different kiosk modes ready to switch between quickly, for example a web browser only account and another to play music.*

## STOP ASSIGNED ACCESS

To stop assigned access return to the setup dialog box, choose the current user and you'll see the option to change the assigned access user or "Don't use assigned access".



# Windows 10 for Microsoft Office users

## Multiple Users - User Settings

### USER SETTINGS

Click on a user in Manage Accounts to see some choices.

#### Make changes to Alvin's account

[Change the account name](#)

[Change the password](#)

[Change the account type](#)

[Delete the account](#)

[Manage another account](#)



Alvin  
Local Account  
Password protected

Some of the important choices are:

### CHANGE PASSWORD

When changing passwords, note the warning on the screen. All EFS encrypted files plus personal certificates and stored passwords are deleted.

#### Change Alvin's password



Alvin  
Local Account  
Password protected

You are changing the password for Alvin. If you do this, Alvin will lose all EFS-encrypted files, personal certificates, and stored passwords for Web sites or network resources.

New password

Confirm new password

If the password contains capital letters, they must be typed the same way every time.

Type a password hint

The password hint will be visible to everyone who uses this computer.

### NO PASSWORD

To make a 'no password' account, leave both password fields and the hint blank.

Without a password, all you have to do is click a button on the sign-in page to login. Ideal for a Guest account.

### ACCOUNT TYPE

There are two broad types of Windows user account, Standard and Administrator.

# Windows 10 for Microsoft Office users

## Multiple Users - User Settings

### Choose a new account type for Alvin



#### Standard

Standard accounts can use most software and change system settings that don't affect other users or the security of this PC.

#### Administrator

Administrators have complete control over the PC. They can change any settings and access all of the files and programs stored on the PC.

[Why is a standard account recommended?](#)

Most accounts are Standard. They can change some settings but not interfere with the in-depth settings.

The Administrator can do anything. These days even Administrators have Standard level access for most of the time. There's a warning when about to enter an Administrator level area.

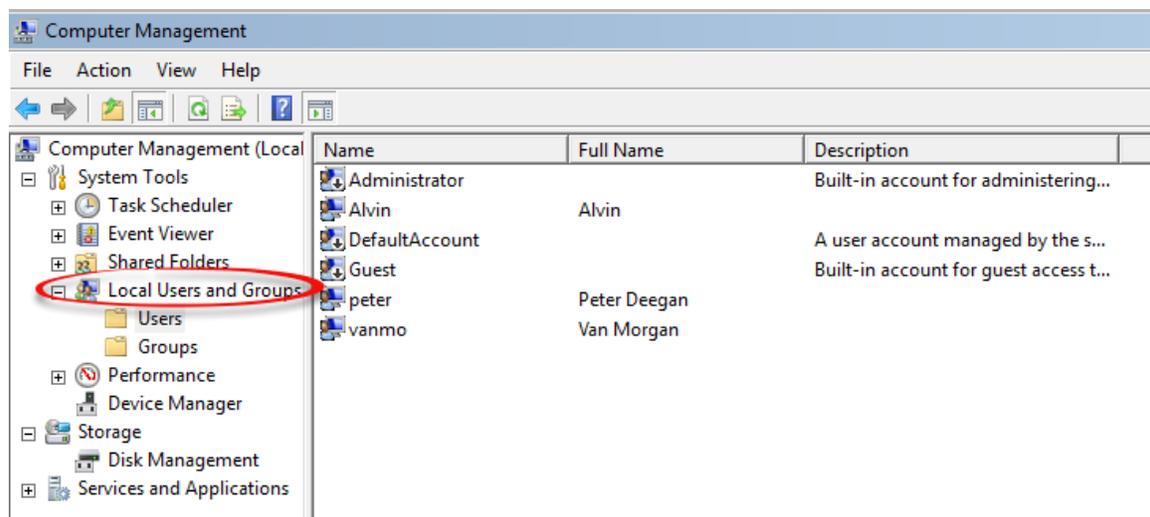
Keep most accounts as Standard with only one or two Administrator level logins.

## DELETE ACCOUNT

You can delete an account. All the folders and files will be moved to a folder on the current users' desktop.

## LOCAL USERS AND GROUPS

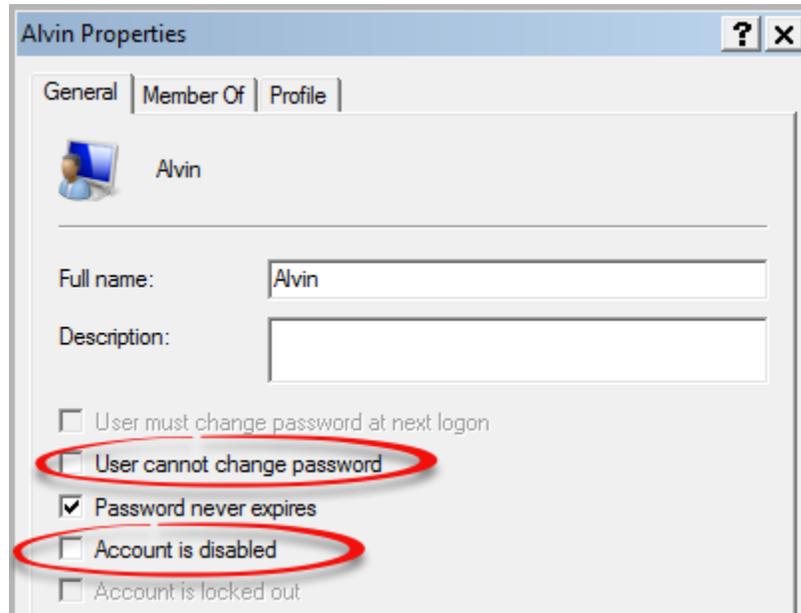
The User settings in Control Panel has only a few of the options available in Windows. For more control over user account options go to Control Panel | Administrative Tools | Computer Management | Local Users and Groups.



## Windows 10 for Microsoft Office users

### Multiple Users - Working with multiple users

Now you can see all the users, including the built-in Administrator, Default and Guest logins. Right-click on a user to see some options not available in the other screens.



#### CANNOT CHANGE PASSWORD

This stops the user from changing the account password. Only an Administrator can change it.

#### PASSWORD NEVER EXPIRES

Keep this on unless you want Windows to force a password change every few months.

#### DISABLE/HIDE ACCOUNT

This keeps the account on the computer but it doesn't appear on login screens as a choice.

## WORKING WITH MULTIPLE USERS

Now you have some other user accounts, how can you use them? We'll not just show you how to switch users but some of the practical issues you can have working with multiple running accounts.

#### SWITCHING USERS

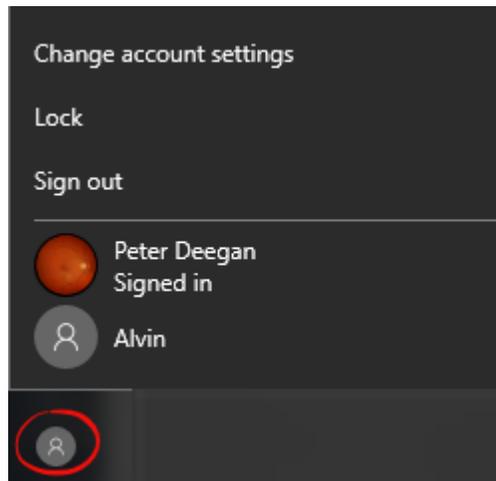
There are various ways to switch between the user accounts.

## Windows 10 for Microsoft Office users

### Multiple Users - Working with multiple users

#### START MENU

On the Start Menu, click on your user icon to see the other user accounts available.



Click on the user to go to a login screen.

#### KEYBOARD

Surprisingly, there's no direct 'switch user' keyboard shortcut but that doesn't stop Microsoft talking about 'Fast User Switching'.

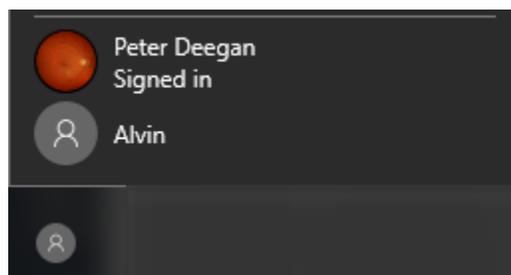
Some keyboard options are:

**Win + L** - takes you to the Lock screen for that user. Click/Tap to see the list of user accounts.

**Ctrl + Alt + Del** – this long-standing Windows key combination shows a full-screen menu including a Switch User option.

#### RUNNING OR NOT?

On the user selection list there's a 'Signed in' note against any user account that's currently running.

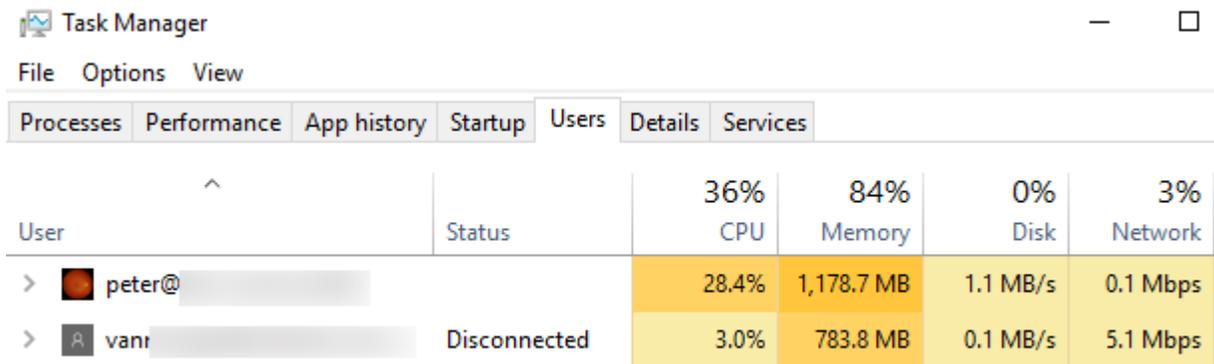


A 'Signed in' user is active and is using computer resources. If you don't need that account any more, log off from that user.

# Windows 10 for Microsoft Office users

## Multiple Users - Document sharing

In the Task Manager you can see which user accounts are active and the resources being used on each.



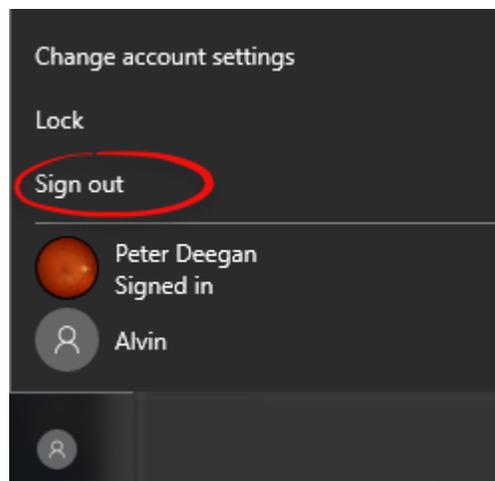
User	Status	CPU	Memory	Disk	Network
> peter@	Active	28.4%	1,178.7 MB	1.1 MB/s	0.1 Mbps
> vanr	Disconnected	3.0%	783.8 MB	0.1 MB/s	5.1 Mbps

As you can see, the 'van' user is marked 'Disconnected' which means the account is logged in but running in the background. Some CPU, memory, disk and network resources are being used even in that background state.

Keep this in mind if your computer is running slowly. Is there another user still logged in?

SIGN OUT

On the Start Menu | User menu is a Sign Out option.



This will close all programs running on the current user and log off from the account. It's then dormant until you log in again.

## DOCUMENT SHARING

Sooner or later you'll want to access a document saved on the computer, but saved in another user account. The main folders for each account aren't available to other users, but there are ways around that.

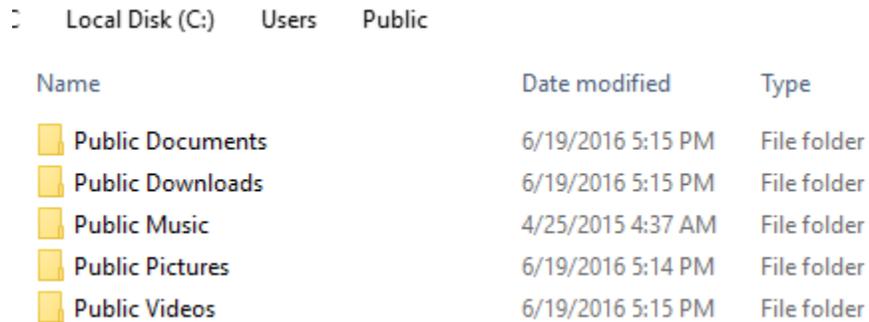
## Windows 10 for Microsoft Office users

### Multiple Users - Document sharing

This can happen if you want to open a Word document, Excel worksheet or PowerPoint presentation in a different user account. Office for Windows is available to all users but the documents are a different story.

### PUBLIC FOLDERS

The Public folders are there to make files available to all users on the computer and the local network.



Name	Date modified	Type
Public Documents	6/19/2016 5:15 PM	File folder
Public Downloads	6/19/2016 5:15 PM	File folder
Public Music	4/25/2015 4:37 AM	File folder
Public Pictures	6/19/2016 5:14 PM	File folder
Public Videos	6/19/2016 5:15 PM	File folder

Put the document into a public folder and you can open it from any other user account.

### CREATE FOLDER SHARE

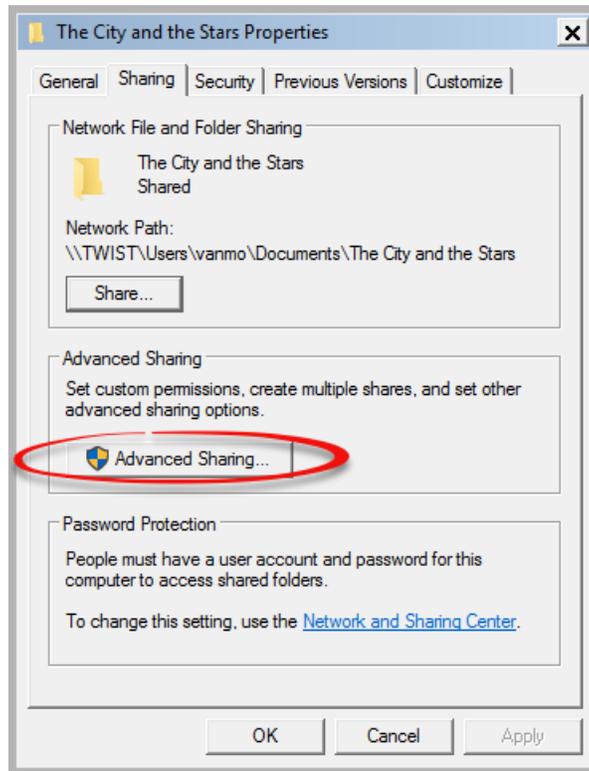
A folder 'owned' by one user can be made accessible to all or specific other users.

This is the same sharing technique that's used to make folders accessible across a local network.

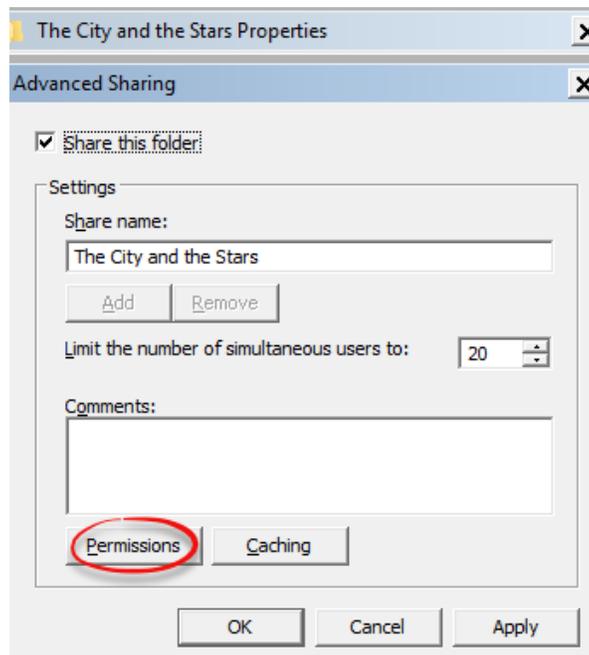
# Windows 10 for Microsoft Office users

## Multiple Users - Document sharing

In the user account that owns the folder, right-click on the folder and choose Properties | Sharing | Advanced Sharing ...



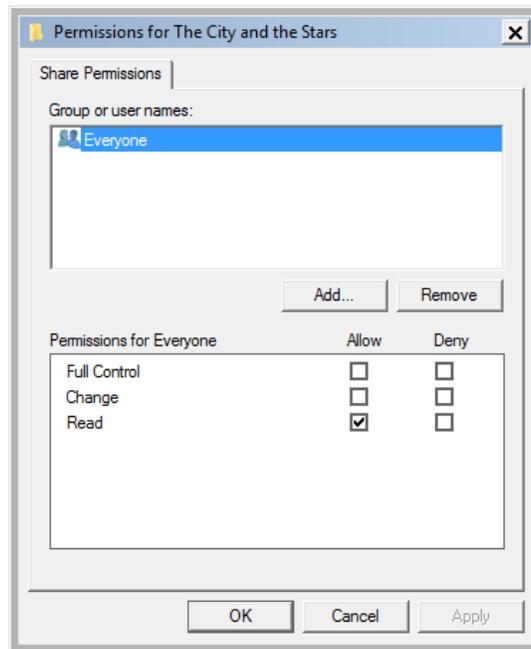
Check the box 'Share this folder' and, perhaps, change the share name (the default is the folder name).



## Windows 10 for Microsoft Office users

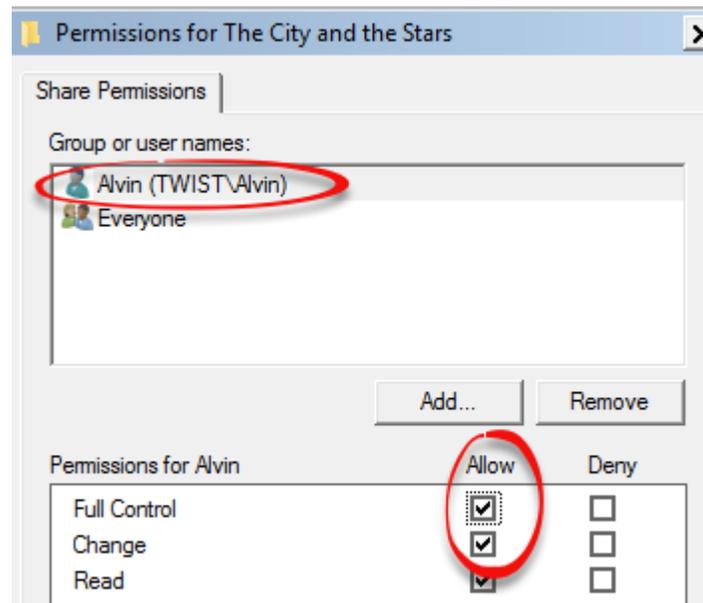
### Multiple Users - Document sharing

The default permissions give 'Everyone' read only access to the folder. 'Everyone' means all logged in users.



Click on Add ... to add a user or group to the permissions. Click on Advanced | Find Now to see a list of all users and groups.

Once you've added a user/group, remember to change the permissions. Allow either Change or Full Control.



Once the share is in place, to access it from another account, go to the folder like you would any other network share (even though it's on the same computer)

## Windows 10 for Microsoft Office users

### Multiple Users - Program Install Options

Go to the Network part of Explorer and look for the computer name on the list. Or type \\ plus the name of the computer in the address bar. The list of available shares will appear, click on one to open the folder.



## CLIPBOARD

The clipboard works on a 'per user' basis. You can't copy something, switch users and paste that content into another user.

If you want to share something between user accounts, you'll need to save it somewhere that's accessible to both users.

## FILE HISTORY

Windows [File History](#) (the main backup system) works on a per-user basis.

---

*For each new user account, remember to start File History.*

---

File History will offer to save copies to the same location as other users on the same computer. Of course, the files for each user are saved in a separate set of folders.

## PROGRAM INSTALL OPTIONS

If you decide to move to a multiple user setup, there is an option in some installation programs that will become relevant.

During setup of some programs you get a choice between installing for all users or just the currently logged in user.

The choice is yours depending whether you want a program available to all or just some users.

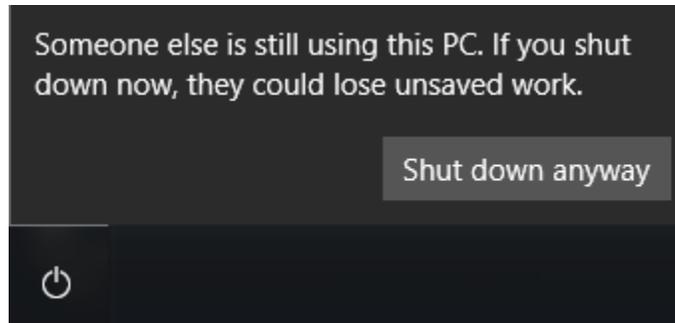
Recent versions of Office for Windows will install for all users. You can open Word, Excel etc. and work in each account as a different user. This is allowed by the MS Office license because you can only work with one instance (user account) of Office at any time.

## Windows 10 for Microsoft Office users

Multiple Users - Shutdown Warning

### SHUTDOWN WARNING

If you try to Shutdown a computer that has multiple users signed in, Windows will warn you.



You should sign out of each account then Shutdown from the last active user account.

## START MENU AND BEYOND

Windows 10's main claim to fame is the 'new' Start Menu that doesn't take up the whole screen. It's changed a lot after the first release of Windows 10 with many tweaks in the development of the mid-2016 'Anniversary' edition.



A core difference is that Windows 10 acknowledges that most users have a keyboard and mouse. The Windows 8 interface aimed for touch screen computers with keyboard/mouse users left with afterthoughts.

The Windows 10 Start Menu is an improvement but not entirely for us customers. If you look at the screen image above, many of the default tiles serve as ads for other Microsoft services and products.

---

*It's more important than ever to change the Start Menu to suit you and reduce its purpose as a Microsoft billboard.*

---

In this chapter we'll show you the secrets and tricks in the Windows 10 Start Menu. Including how to make the menu work for you and not as a billboard for Microsoft.

We'll also show you how to get the Windows Vista/Windows 7 Start Menu back.

# Windows 10 for Microsoft Office users

Start Menu and beyond - Start menu in Windows 10

*Microsoft is still tinkering with the Start Menu with changes made with almost every new build of Windows 10, long after the official release in 2015. There may be small differences between what we describe below and what happens on your screen.*

## START MENU IN WINDOWS 10

Your Windows 10 Start Menu will look somewhat like this after installation on a new computer.



Exactly how it looks depends on your screen resolution. With a smaller screen the tiles move to a single column and the Search/Cortana box becomes a single icon.

## Windows 10 for Microsoft Office users

Start Menu and beyond - Start menu in Windows 10



---

*Unlike the Windows 8, the Windows 10 Start Menu makes good use of the right-click menu (or Tap and Hold then release). Try right-clicking around the Start Menu to see what's hiding underneath.*

---

Some of the tiles have active content (aka a 'Live Tiles') which change depending on circumstances. The simplest of these is the Photos tile which cycles through the images in your Photos folders and cloud services.

There are four sizes for tiles – Large, Wide, Medium and Small. Not all tiles can change size or have all sizes available. '

See [Tile Options](#) for info on changing and rearranging tiles.

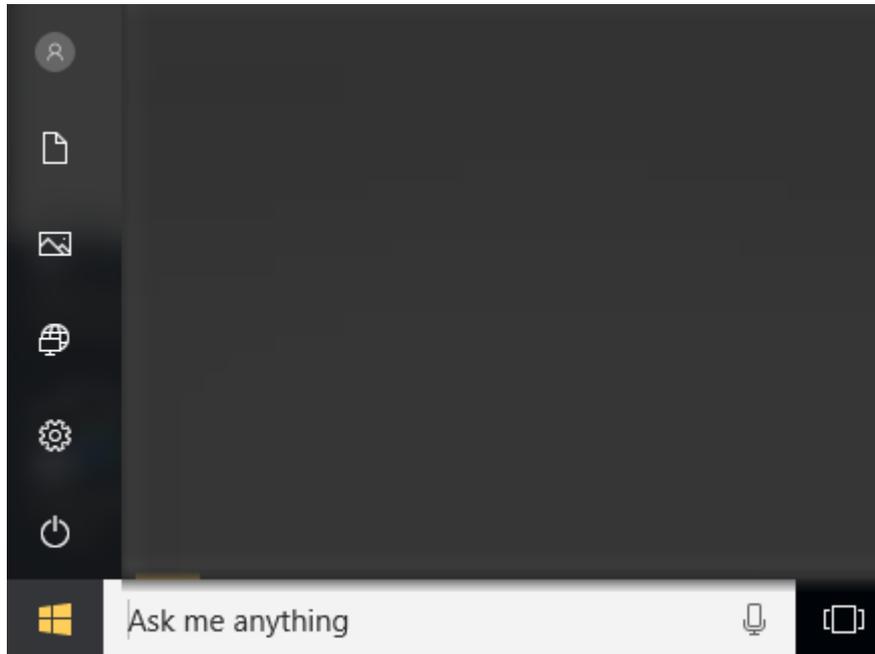
The circle will open up a Search pane with Cortana. But you can do the same thing by just clicking on the Start Menu (or the Win key) then typing your search, Windows will open the search pane automatically.

## Windows 10 for Microsoft Office users

Start Menu and beyond - Around the Start Menu

### AROUND THE START MENU

From the Start Button at bottom left, let's look around the Start Menu



#### START BUTTON

The Windows icon on bottom left is still there.

Next to it is a Search button or box but it's not really necessary. Another thing that hasn't changed from Windows 8 is the quick search trick. Tap on the Start button or press the Windows key then type in your search. This is the quick way to find any program.

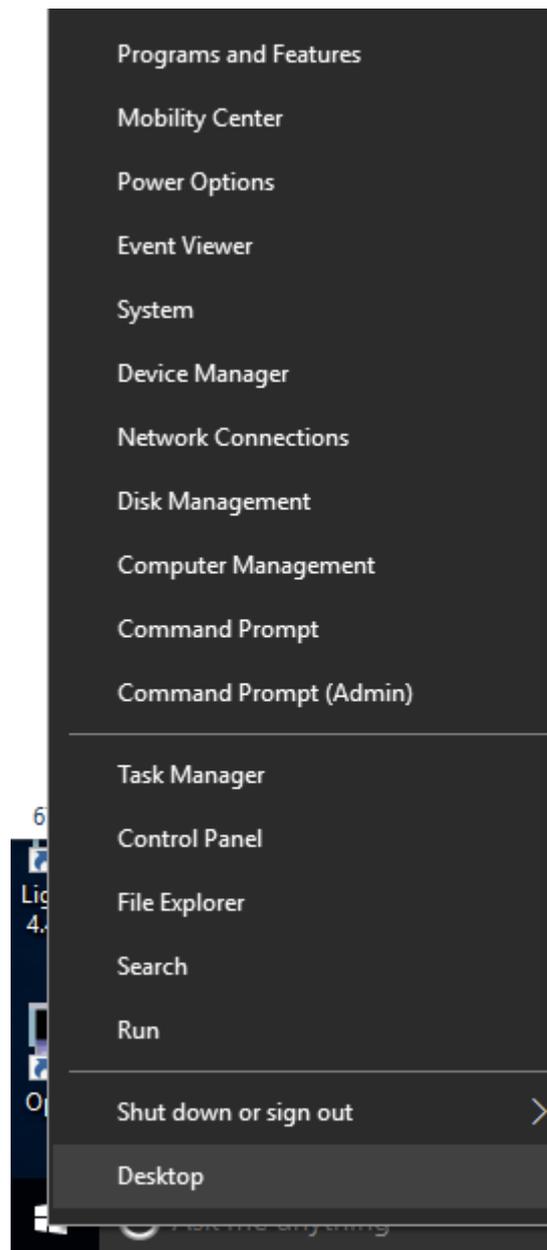
## Windows 10 for Microsoft Office users

Start Menu and beyond - Around the Start Menu

### ADMINISTRATION MENU

Also continued from Windows 8 is the right-click option on the Start button. This shows a long list of useful configuration and 'advanced' options. It's sometimes, wrongly, called the 'secret' or 'god' menu.

Annoyingly it doesn't have both of the configuration places for Windows 10 (yes, there's two). Control Panel is there, but Settings isn't (it's on the main Start Menu).



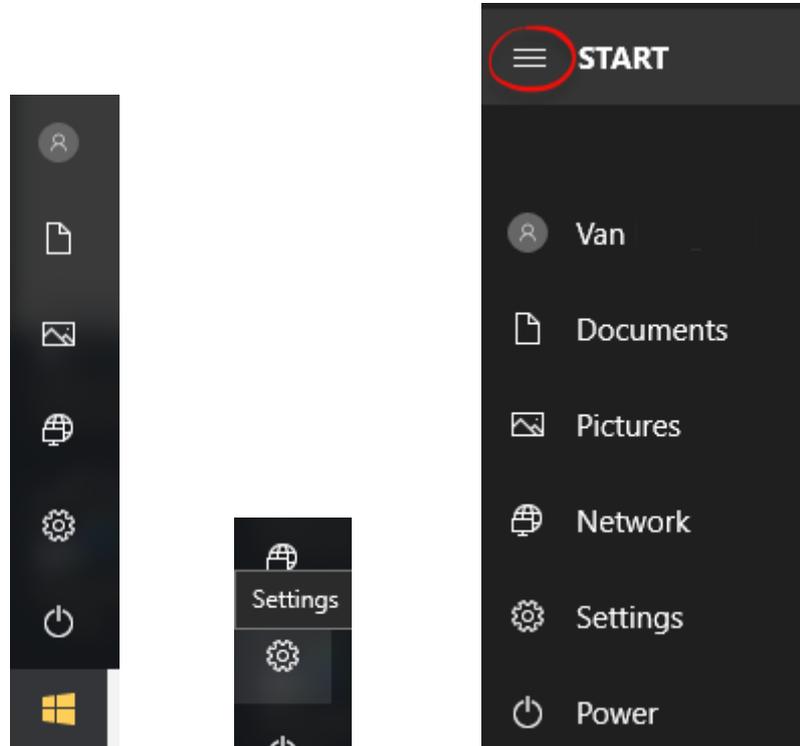
See [Administration menu](#) for more details.

# Windows 10 for Microsoft Office users

Start Menu and beyond - Around the Start Menu

## LEFT SIDEBAR

The left column is now a set of icons that you have some control over. If you're not sure what an icon is for, hover your mouse over it for a tooltip. Or click on the Expand button at the very top to see full labels.



## Windows 10 for Microsoft Office users

Start Menu and beyond - Around the Start Menu

To control what appears in this column go to Settings | Personalization | Start | Choose which folders appear on Start

### Choose which folders appear on Start

File Explorer



Settings



Documents



Downloads



Music



Pictures



Some buttons are fixed: Power (bottom), User (middle) and Expand (very top). You can turn on/off the following:

- File Explorer
- Settings
- Documents
- Downloads
- Music
- Pictures
- Videos
- HomeGroup
- Personal Folder

The named folders like 'Music' and 'Pictures' open the users folders not the Libraries of the same name.

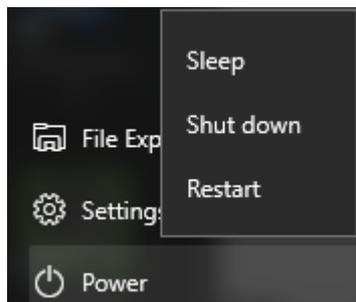
Right-clicking on an icon will reveal some more options relevant to that icon.

## Windows 10 for Microsoft Office users

Start Menu and beyond - Around the Start Menu

### POWER

All the available shutdown or restart options including Hibernate.

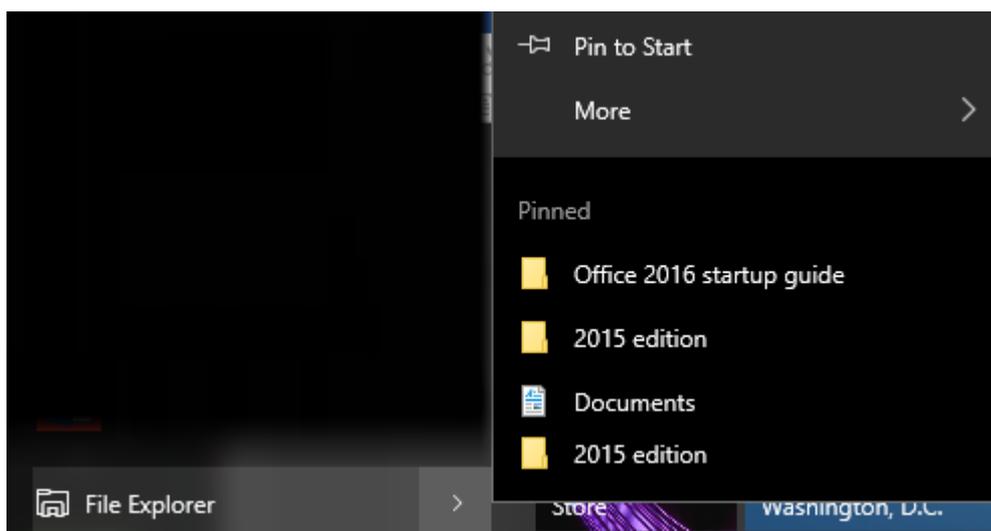


### SETTINGS

Opens the Windows 10 Modern version of Settings which is different from the Control Panel.

### FILE EXPLORER

Opens the File / Windows Explorer or right-click to see a jump list of recent or pinned folders.



Hover over a Jump List entry to see the full path name plus the pin/unpin option.

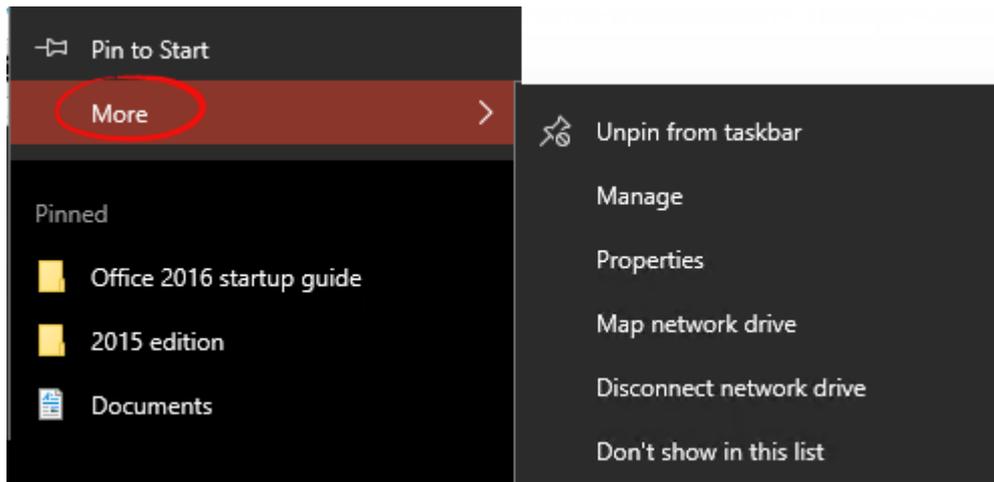


Pin to Start – adds File Explorer to the custom group on the Start Menu.

Recent builds have a 'More' option with links to some options that were previously under the right-click menu for 'This PC' or 'My Computer. Manage, Properties, Map network drive, disconnect network drive.

## Windows 10 for Microsoft Office users

Start Menu and beyond - Around the Start Menu

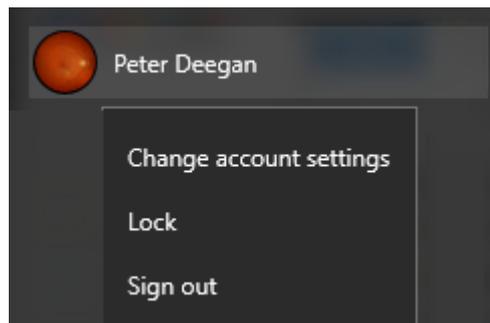


### ACCOUNT

At the top left is your account name. Click to see 'Change account settings' (to Settings | Accounts).

Lock takes you back to the login screen.

Sign Out closes down all the apps and the logged in account.



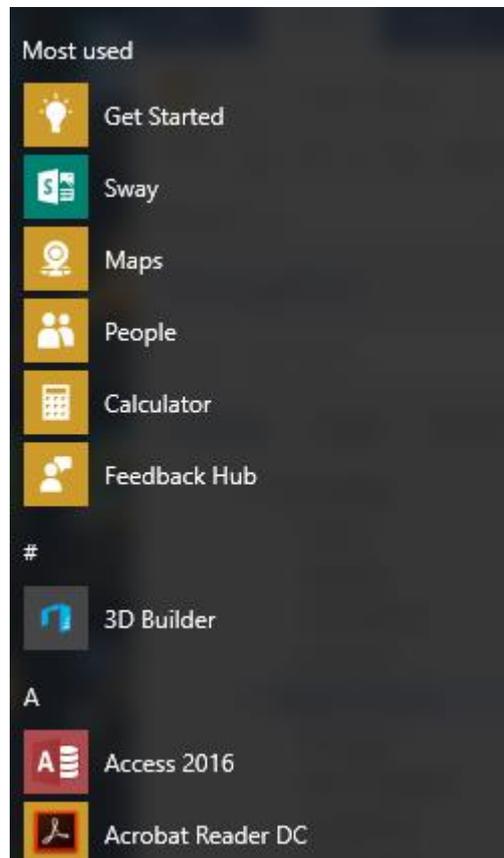
If you have [multiple user accounts](#) on the computer, the other users will also appear so you can quickly switch.

## Windows 10 for Microsoft Office users

Start Menu and beyond - Around the Start Menu

### MIDDLE COLUMN

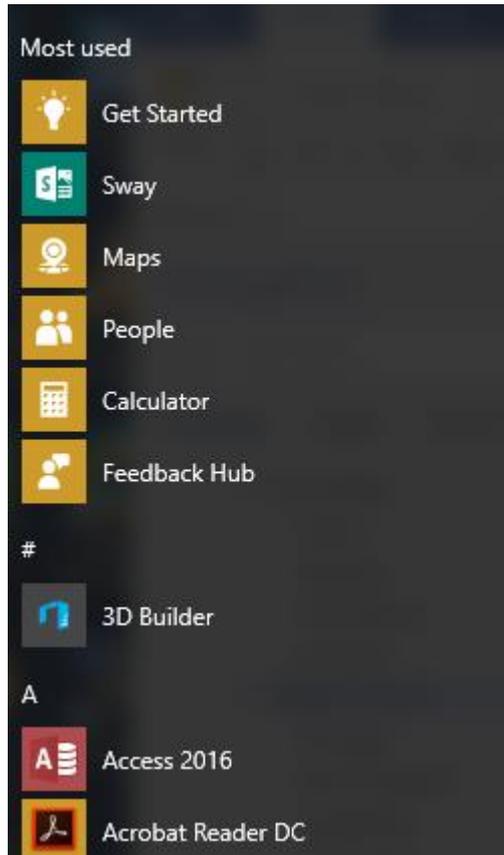
The middle column of the Start Menu is now the place for apps. The Most Used list at the top then an alphabetical list of applications.



## Windows 10 for Microsoft Office users

Start Menu and beyond - Around the Start Menu

Scroll through this list or tap on a letter to see a way to jump to each alphabetical section.



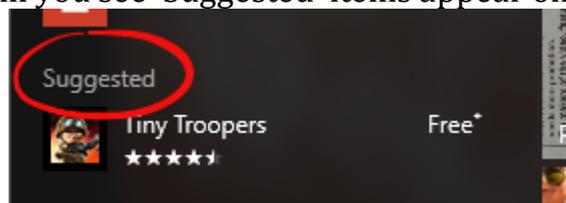
### NEW PROGRAMS

Newly installed programs are marked on the Apps list.



### SUGGESTED

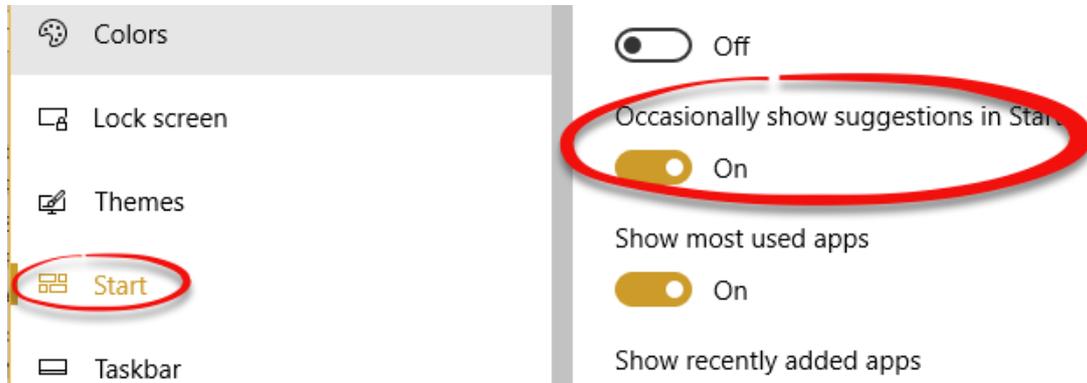
Remember us saying how the Start Menu was an advertising billboard for Microsoft? Wait till you see 'Suggested' items appear on your Start Menu.



## Windows 10 for Microsoft Office users

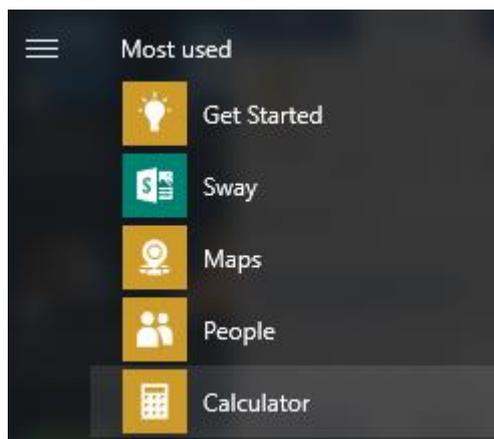
Start Menu and beyond - Around the Start Menu

Happily, this particular intrusion is optional. Turn it off at Settings | Personalization | Start (this choice was added in the November 2015 update).

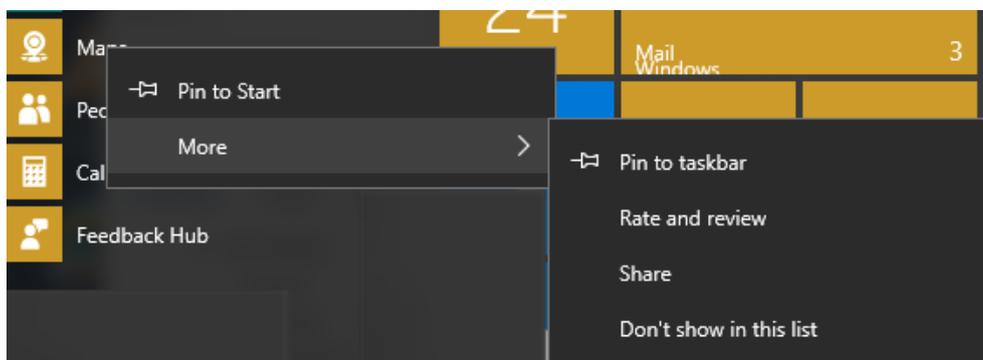


### MOST USED

As you start using Windows 10, it will figure out which programs and apps you use most regularly.



Right-click on any item to see some options, including “ Don't show in this list “.



You can't force a program onto the Most Used list except by opening that program often.

## Windows 10 for Microsoft Office users

Start Menu and beyond - Around the Start Menu

### JUMP LISTS

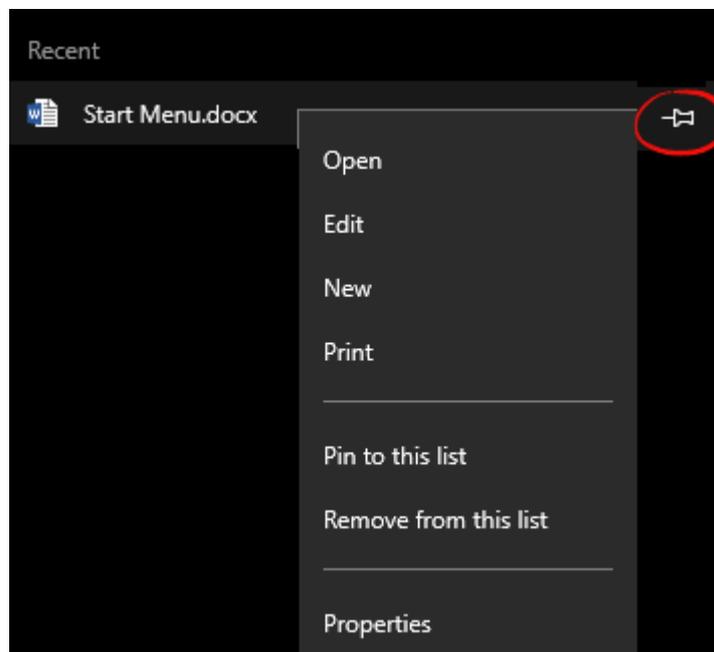
The Jump lists will take you to the Most Recently Used (MRU) documents for that program plus other items.

Choose an MRU item (like a Word document) to open it directly.

Right-click on a program to see MRU, for example in Word.



Right-click on the Jump List item to see more options. For example, with Word 2016 you can open, edit, create new document or print.



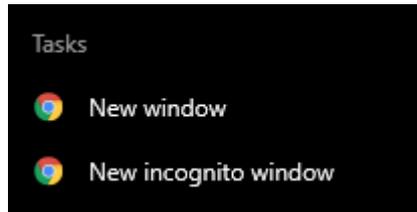
For any Jump List MRU item, you can 'pin' it permanently to the list by using 'Pin to this list' or the pin icon on right.

'Remove from this list' deletes unwanted MRU entries (but not the document/file itself).

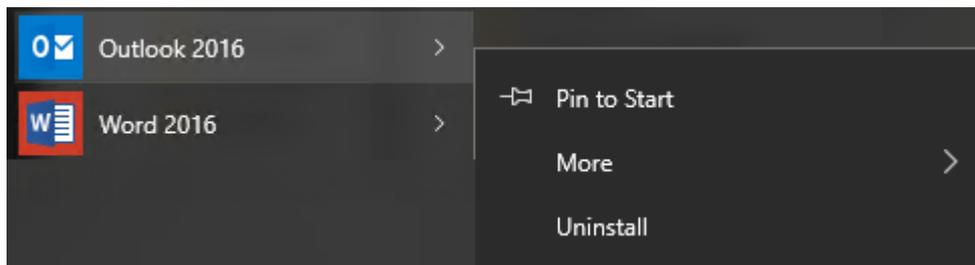
## Windows 10 for Microsoft Office users

Start Menu and beyond - Around the Start Menu

Depending on the program, you might also see some actions, like these for Google's Chrome browser:

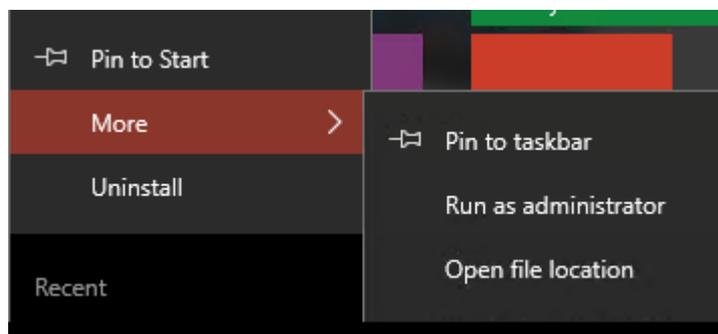


Strangely, there's no default actions for Office programs. Outlook should have 'new email', 'new contact' etc, but no. Another example of Microsoft's Windows and Office teams not getting their acts together.



Also on the Jump List are 'Pin to Start' and 'Uninstall'.

The More menu lets you choose 'Pin to taskbar' and 'Run as administrator' (if applicable). 'Open file location' opens the folder of shortcuts that controls the Start Menu (`\ProgramData\Microsoft\Windows\Start Menu\Programs`)

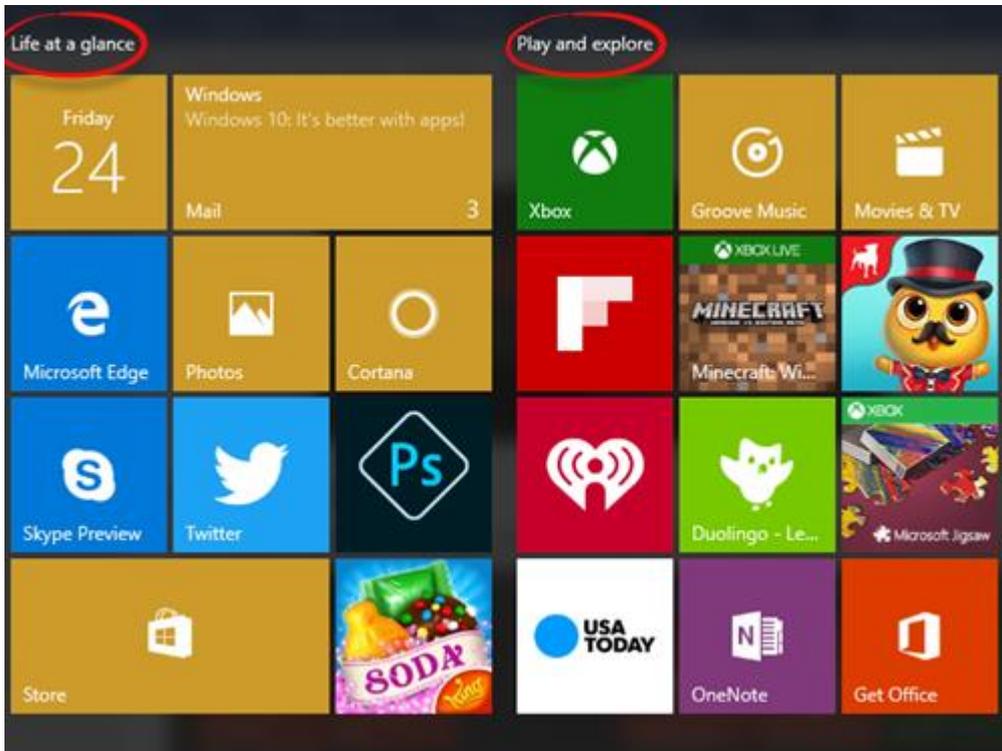


# Windows 10 for Microsoft Office users

Start Menu and beyond - Around the Start Menu

## MAIN START MENU

The largest space on the Start Menu is used by Tiles that are placed in Groups.

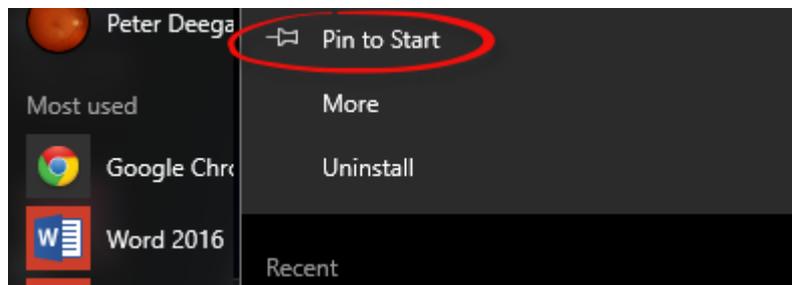


The supplied Groups are called 'Life at a glance' and 'Play and explore'. Together they might be called 'Microsoft billboard' since they mostly serve as advertising for other Microsoft products.

## CUSTOMIZING

### GROUPS

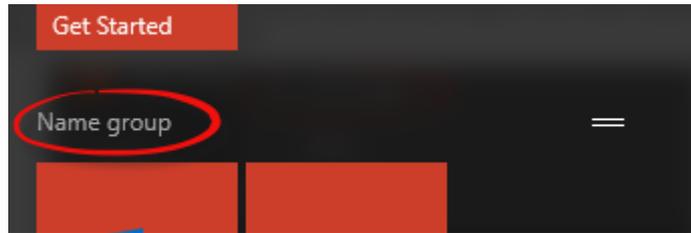
A third group is created when you add something to the Start Menu from a right-click action 'Pin to Start'



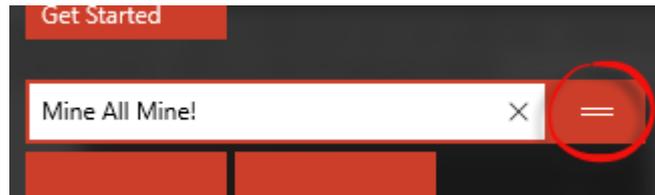
## Windows 10 for Microsoft Office users

Start Menu and beyond - Around the Start Menu

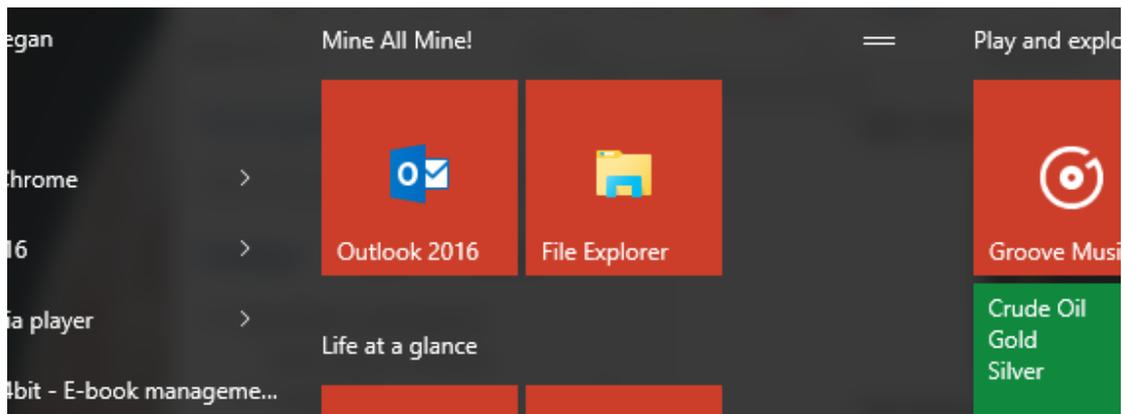
The third group doesn't get a title but you can add one. Hover over the area above the group then click to edit the group name:



Or tap on the double bars at right.



The double bars are the handle for the entire group. Tap and drag the handle to move that group to another location, for example above the Microsoft supplied group.

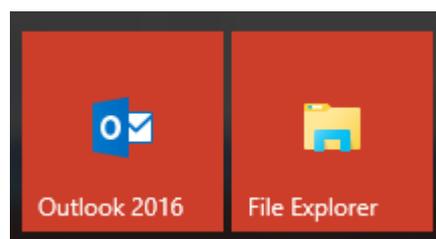


### TILES

Microsoft loves tiles, they are convinced that customers will love Tiles if they (Microsoft and customers) persevere long enough. So far they've not taken the world by storm. As we'll see, not even other departments of Microsoft seem interested in Tiles.

There are two types of Tiles, Static and Live.

Static tiles are just oversized icons with an image and text label.



## Windows 10 for Microsoft Office users

Start Menu and beyond - Around the Start Menu

Live Tiles change appearance based on information available. The Weather and Stock Tiles are examples of Live Tiles in action. The weather and stock data is grabbed from the Internet and displayed in the tile.

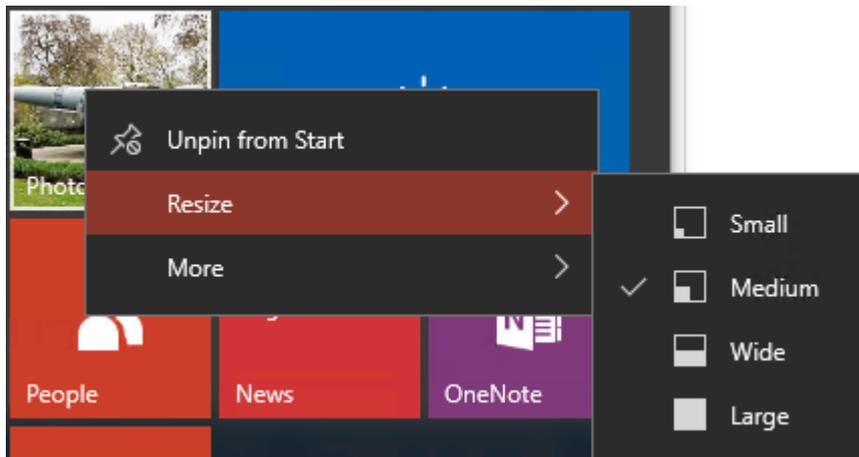


It's a nifty idea but few developers outside the Microsoft Windows team seem interested.

To configure a Live Tile, click on it to open the associated app.

### SIZES

There are four tile sizes, but not all apps support the full range; Small, Medium, Wide and Large.



The supplied Photos app does support all four, here they are in action:



The small size Live Tile only shows an icon.

### WHERE ARE THE MICROSOFT OFFICE LIVE TILES?

The notable omission from Live Tiles are anything to do with Microsoft Office.

## Windows 10 for Microsoft Office users

Start Menu and beyond - Around the Start Menu

There are no Live Tiles for parts of Outlook for Windows: Email, Calendar, Contacts and Tasks.

The workaround is to setup your Mail, Calendar and Contacts/People apps to link with the same online storage that Outlook uses (e.g. Office 365/Exchange Server, Google etc). The apps will then feed information to the Live Tiles.

That means your computer is accessing the same data store twice for the same information – once for Outlook and again via the Windows 10 apps.

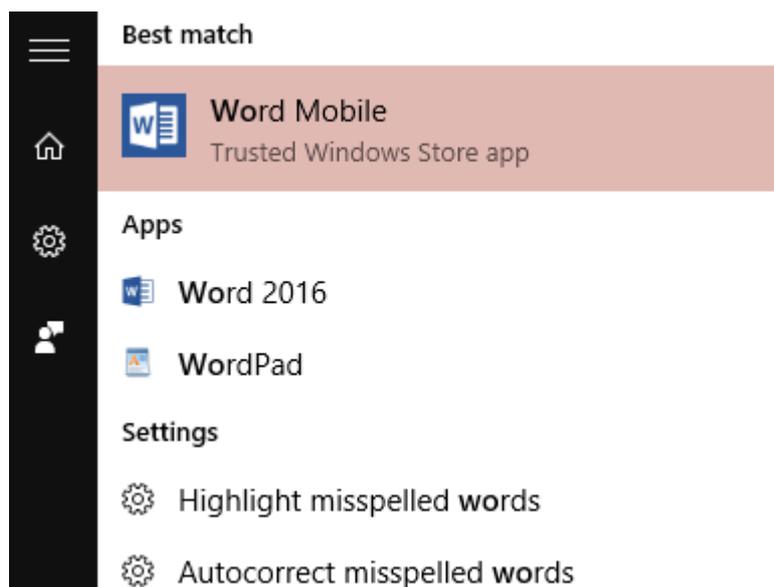
Also same information is stored twice on the same computer (once in Outlook and again for each app) taking up unnecessary disk space. That should offend the developer instincts of Microsoft staff, but it's been accepted as the 'new normal'.

### SEARCH

All these tiles and icons might seem like a tremendous waste of screen space (and you're probably right) but thankfully you can find the thing you want quickly.

Anywhere on the Start Menu, just type your search. As soon as you press the first letter, Windows figures you want to search and does that. There's no need to type in a particular part of the screen, any typing on the Start Menu is enough.

For example, pressing the Windows key then **W O** will show things starting with 'wo' including Word, Word Mobile (the Windows Modern app) and WordPad.

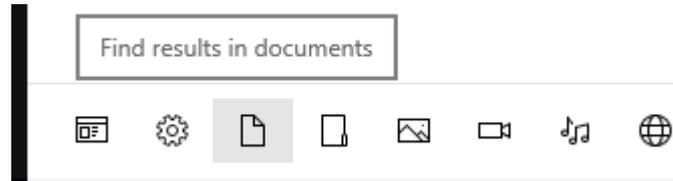


This search is much the same as in Windows 7 and 8. There you clicked on the Start button and typed a search in the search line provided. All that's changed is the way results are displayed.

## Windows 10 for Microsoft Office users

Start Menu and beyond - Around the Start Menu

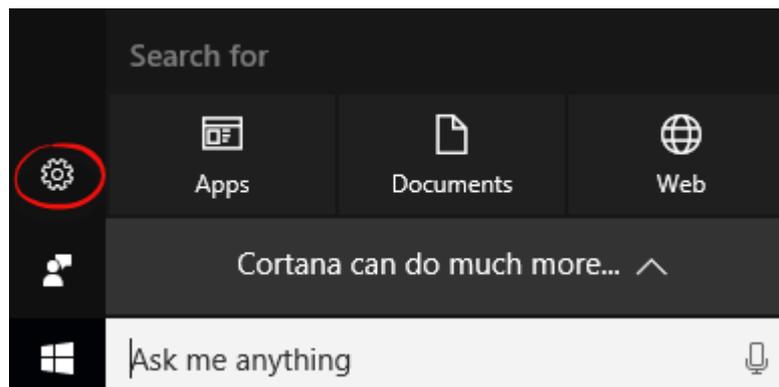
If you type and it doesn't find what you want, or too much, choose the Search options on the bottom row to change the search area.



The icons, from the left are:

- Apps
- Settings
- Documents
- Folders
- Photos
- Videos
- Music
- Web (the default)

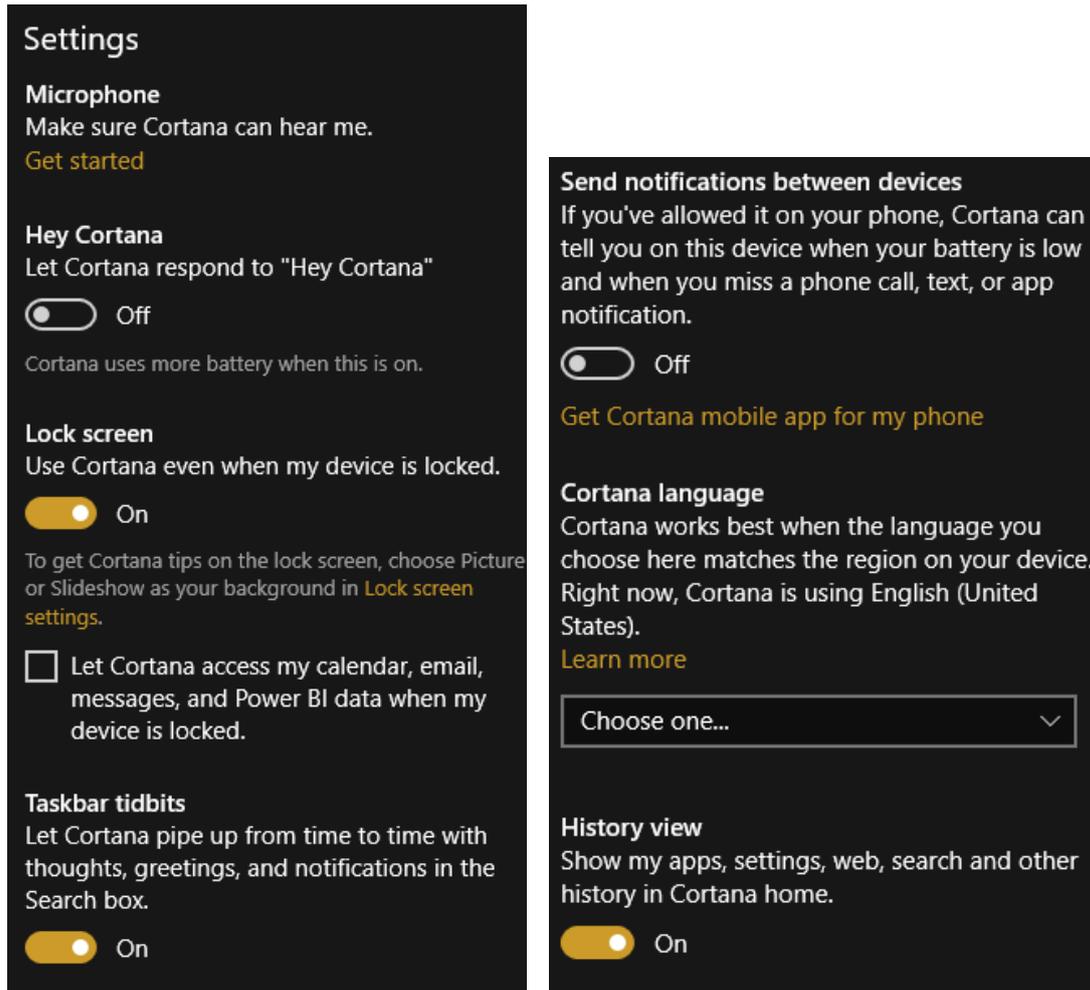
SEARCH SETTINGS



The search settings are in a very long column, which we've split into three images.

# Windows 10 for Microsoft Office users

Start Menu and beyond - Around the Start Menu



The image shows two side-by-side panels of Windows Settings for Cortana. The left panel includes sections for Microphone, Hey Cortana, Lock screen, and Taskbar tidbits. The right panel includes sections for Send notifications between devices, Cortana language, and History view.

**Settings**

**Microphone**  
Make sure Cortana can hear me.  
[Get started](#)

**Hey Cortana**  
Let Cortana respond to "Hey Cortana"  
 Off  
Cortana uses more battery when this is on.

**Lock screen**  
Use Cortana even when my device is locked.  
 On  
To get Cortana tips on the lock screen, choose Picture or Slideshow as your background in [Lock screen settings](#).

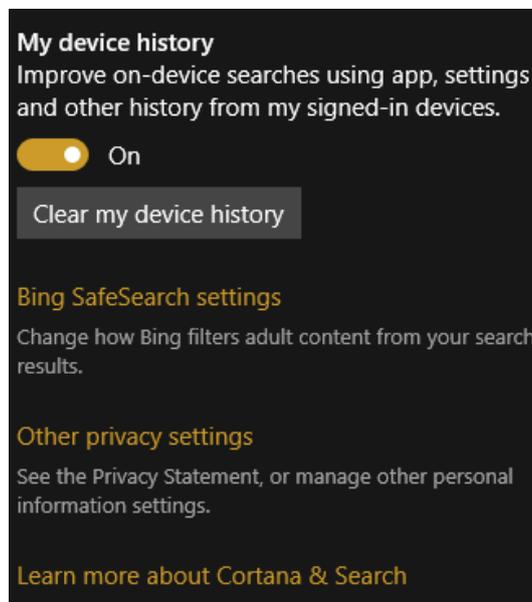
Let Cortana access my calendar, email, messages, and Power BI data when my device is locked.

**Taskbar tidbits**  
Let Cortana pipe up from time to time with thoughts, greetings, and notifications in the Search box.  
 On

**Send notifications between devices**  
If you've allowed it on your phone, Cortana can tell you on this device when your battery is low and when you miss a phone call, text, or app notification.  
 Off  
[Get Cortana mobile app for my phone](#)

**Cortana language**  
Cortana works best when the language you choose here matches the region on your device. Right now, Cortana is using English (United States).  
[Learn more](#)  
Choose one... ▾

**History view**  
Show my apps, settings, web, search and other history in Cortana home.  
 On



The image shows a screenshot of the 'My device history' settings page. It includes a toggle switch for 'My device history' which is turned on, a 'Clear my device history' button, and links to 'Bing SafeSearch settings', 'Other privacy settings', and 'Learn more about Cortana & Search'.

**My device history**  
Improve on-device searches using app, settings and other history from my signed-in devices.  
 On  
[Clear my device history](#)

**Bing SafeSearch settings**  
Change how Bing filters adult content from your search results.

**Other privacy settings**  
See the Privacy Statement, or manage other personal information settings.

[Learn more about Cortana & Search](#)

## MICROPHONE

Setup your microphone so Cortana can hear you.

## Windows 10 for Microsoft Office users

### Start Menu and beyond - Around the Start Menu

#### HEY CORTANA

Cortana can be setup to listen all the time and act when it hears you say 'Hey, Cortana'. This uses more power and some might consider a security risk.

#### LOCK SCREEN

Cortana can be live and active from the Lock Screen. For Cortana fans.

#### TASKBAR TIDBITS

Cortana can pop up with suggestions from time to time.

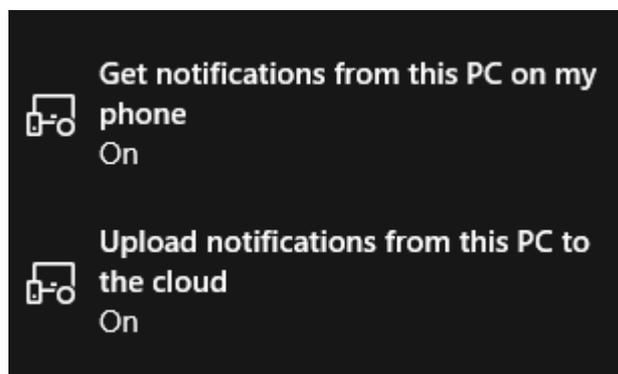
Microsoft thinks this is helpful and cute. Outside the Microsoft bubble it's more commonly greeted as an intrusive nuisance.

#### SEND NOTIFICATIONS BETWEEN DEVICES

This option is promising though, at present, it's not fully working.

The idea is for your devices to be able to exchange notifications with your desktop computer. Missed calls, instant messages notices on your phone can appear in Windows desktop, courtesy of Cortana.

Similarly, notifications on your Windows desktop or tablet can also appear on your phone.



You need the Cortana app on your Apple or Android phone to make this work. Naturally, each Cortana app plus Windows have to be logged into the same Microsoft account.

#### CORTANA LANGUAGE

If necessary, change the language setting. This may improve the voice recognition.

#### HISTORY VIEW

Show your computer 'history' within Cortana's home

#### DEVICE SEARCH HISTORY

Speed up searches by using past searches on the same device.

## Windows 10 for Microsoft Office users

### Start Menu and beyond - Changing the Start Menu

#### CORTANA

Cortana is Microsoft's version of Apple's Siri, the spoken word interface.

It started as a web voice search – speak some words and Cortana will return with search results via Bing.

Cortana (like Siri) has moved beyond that. You can, in theory, search your computer for documents by speaking the terms. Cortana can setup alarms, display calendar etc. To hear Microsoft gushing about Cortana, you'd expect it to rush out and buy lunch for you.

We have to be honest. We've used Cortana on desktop, tablet and phone (Windows and Android) and think it's little more than a novelty item. It's slow to respond, has poor voice recognition and the results aren't as relevant as you'd like.

By the time you've spoken a phrase and (assuming Cortana understood you properly) got some results ... you could have typed, clicked or tapped to the same thing and got on with your life.

The lack of integration with Microsoft Office, in particular Outlook for Windows, reduces its usefulness.

And I'll be damned if I'll be saying 'Hey Cortana' to a computer in private, let alone in public!

Cortana has some promising features. It's upcoming ability to share notifications and alerts between devices is especially interesting.

## CHANGING THE START MENU

There's no reason to leave the Start Menu as Microsoft supplies it and there's some options for controlling how it looks.

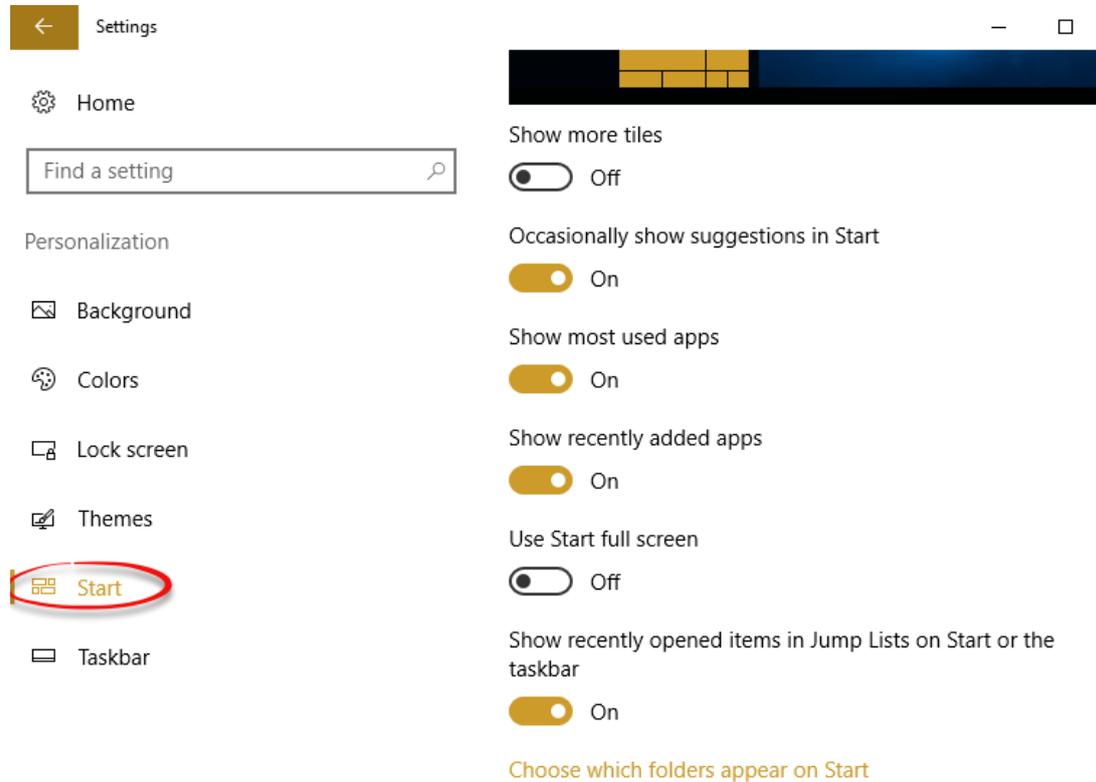
First, we'll go through the 'official' Start Menu settings, then some of the lesser known, but more useful, changes you can make.

# Windows 10 for Microsoft Office users

## Start Menu and beyond - Changing the Start Menu

### SETTINGS

The Start Menu options are at Settings | Personalization | Start



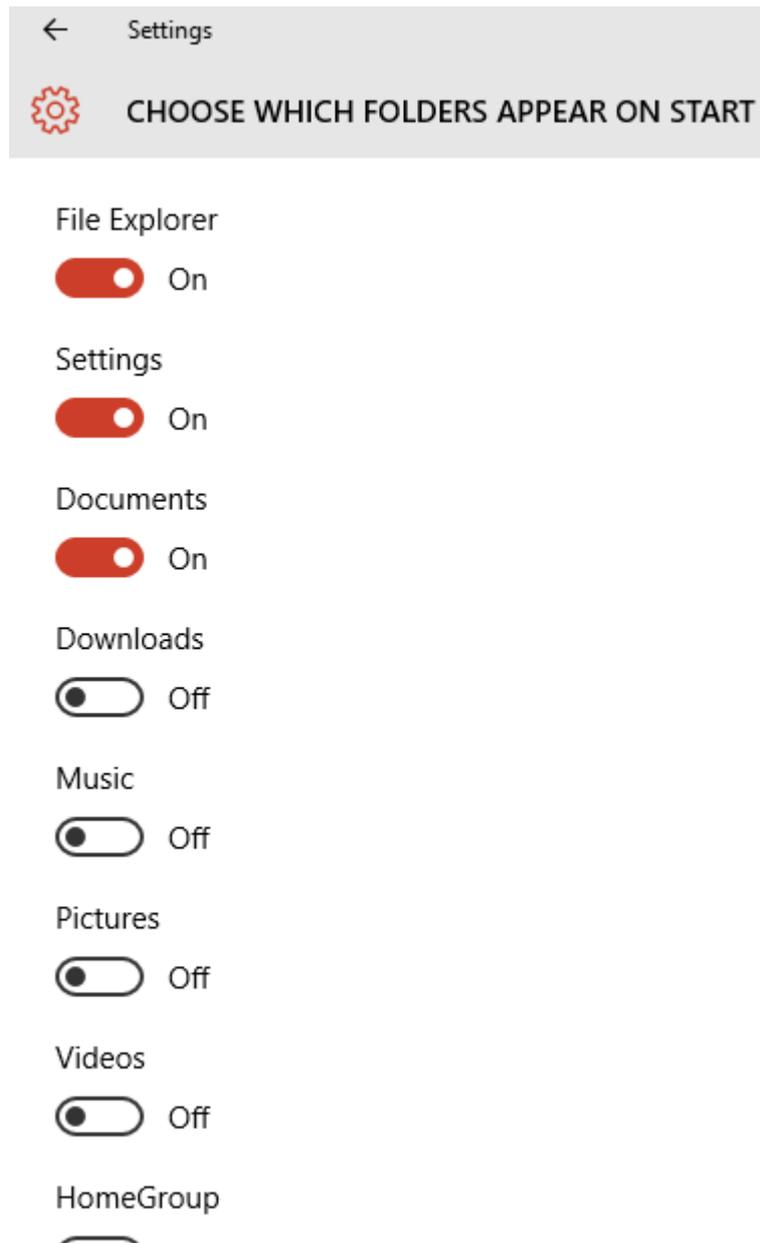
- **Show more tiles** – switches between groups in one or two columns
- **Occasionally show suggestions on Start** – ‘suggestions’ are attempts to sell you Windows apps. Turn off unless you like having ads on our Start Menu.
- **Show most used apps**
- **Show recently added apps** – handy for finding newly installed programs.
- **Use Start full screen** – for the few people who liked the Windows 8 look.
- **Show recently opened items in Jump Lists on Start or the taskbar**

### LEFT SIDEBAR

At the very bottom of Settings | Personalization | Start is ‘Choose which folders appear on Start’.

## Windows 10 for Microsoft Office users

Start Menu and beyond - Changing the Start Menu



The All Apps and Power buttons at the bottom of the left sidebar are fixed.

The next set of buttons are controlled from Settings | Personalization | Start | Choose which folders appear on Start. Your choices are:

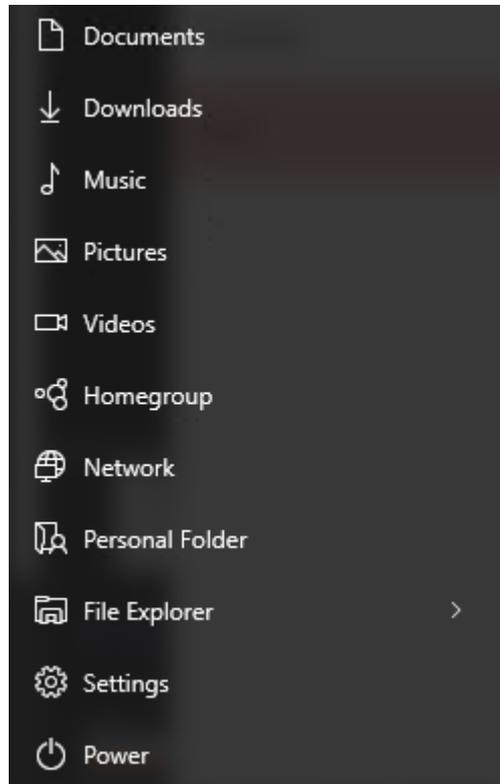
- **File Explorer**
- **Settings**
- **Documents**
- **Downloads**
- **Music**
- **Pictures**
- **Videos**

## Windows 10 for Microsoft Office users

Start Menu and beyond - Changing the Start Menu

- **Homegroup**
- **Network**
- **Personal Folder**

If you turn them all on, there's little room left for anything else!



Unfortunately, you can't configure this list any further. The Settings item is available but not the still essential 'Control Panel'.

You might expect that a right-click on any of these entries would reveal an option to remove it from the menu – but no. To remove an item from this list you have to return to Settings.

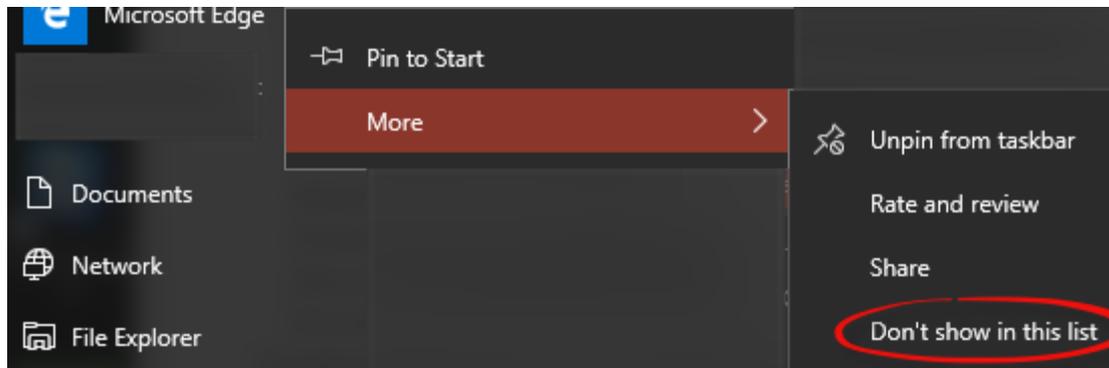
## Windows 10 for Microsoft Office users

### Start Menu and beyond - Changing the Start Menu

#### MOST USED

Turn the 'Most Used' off from Settings | Personalization | Start.

Individual programs/apps can be removed from the list permanently – right-click | More | Don't show in this list.

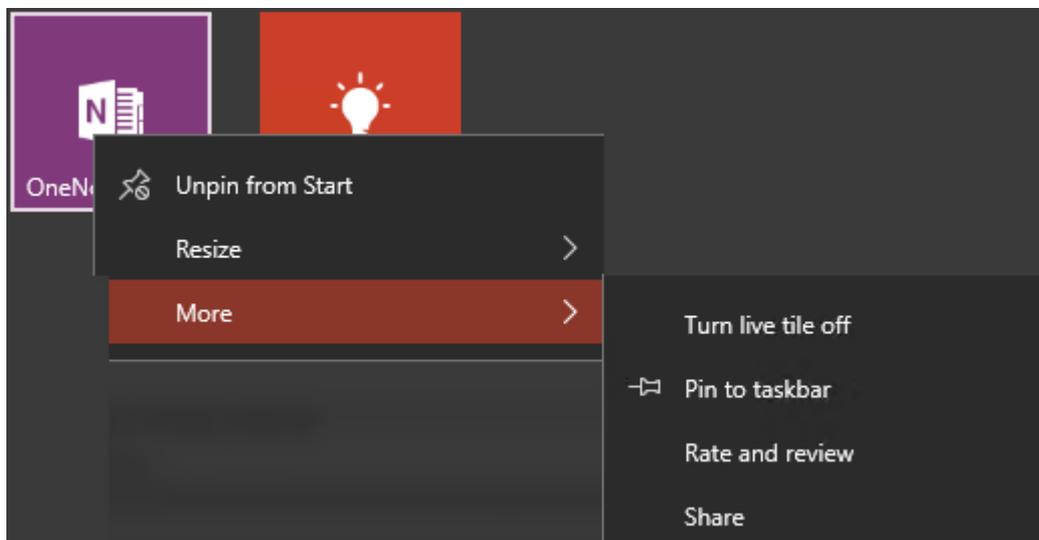


#### MOVING

Moving tiles around is as simple as clicking on a tile and moving it around the Start Menu. Other tiles will move to make room for the moved tile.

#### TILE OPTIONS

Access the controls for a tile by right-clicking on a tile.



The menu choices depend on the tile.

**Unpin from Start** – removes the tile from the Start Menu but leaves the program/app on the computer.

**Uninstall** – removes the tile AND the app/program from the computer.

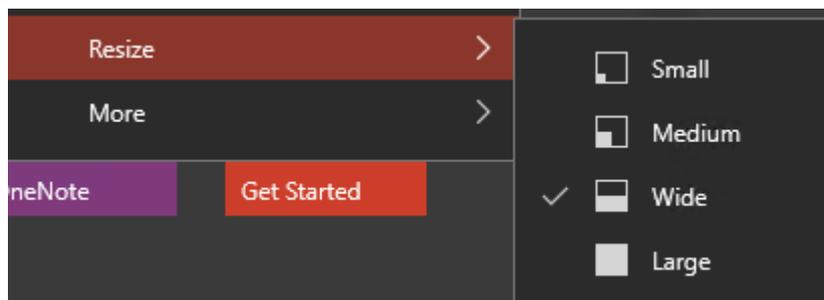
## Windows 10 for Microsoft Office users

Start Menu and beyond - Changing the Start Menu

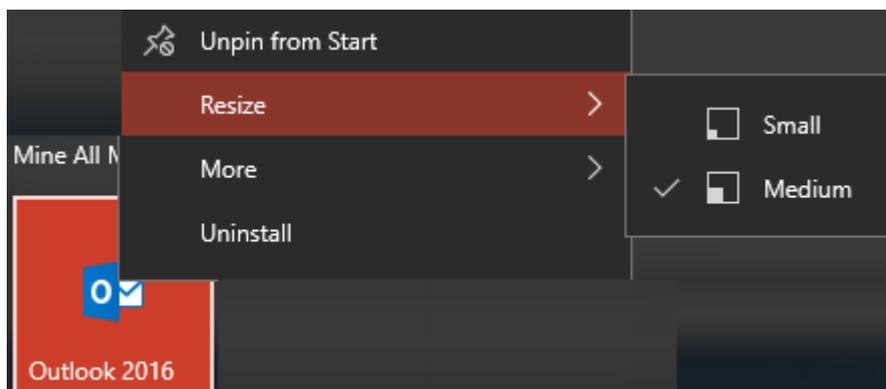
*This option is, perhaps, a little too accessible. Make sure you don't choose it accidentally!*

**Resize** – displays a menu to choose from available tile sizes

Not all tiles have all four possible sizes.



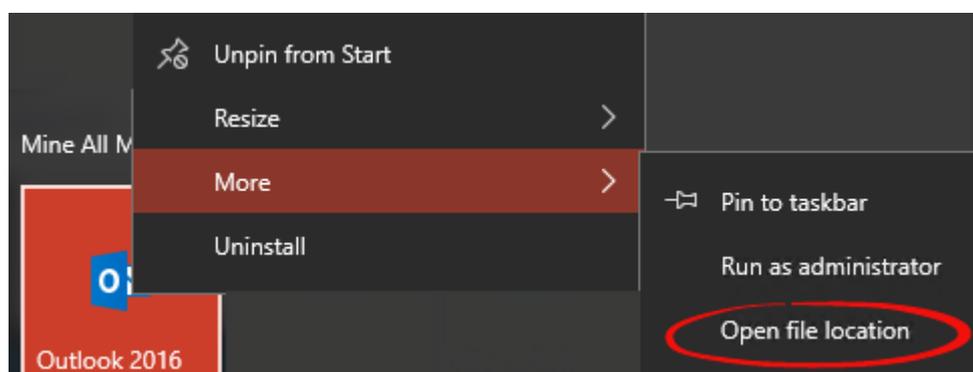
Microsoft Office tiles only come in Small and Medium:



### RENAMING

You can rename a Start Menu tile though it's not as obvious as in Windows 7.

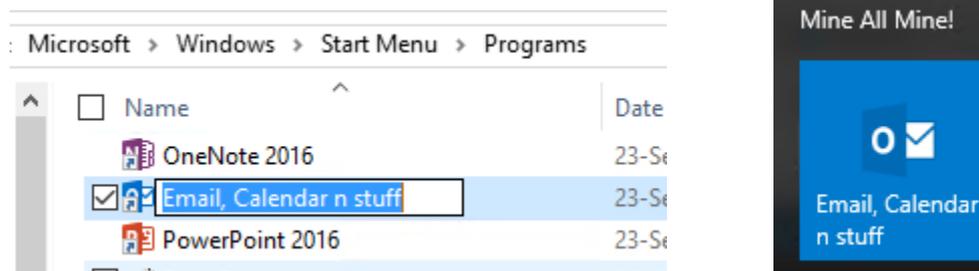
Right-click on the tile and choose Open file location from the right-click menu.



## Windows 10 for Microsoft Office users

Start Menu and beyond - Changing the Start Menu

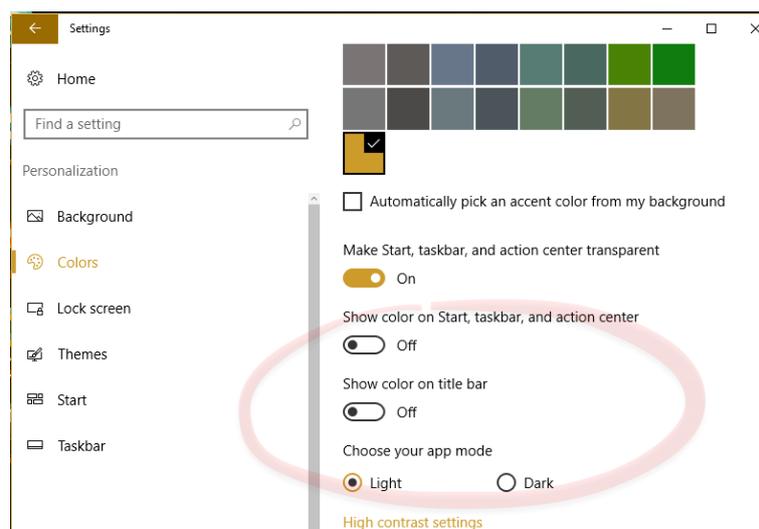
This will open Explorer to that shortcut and rename it as you like.



*Renaming tiles will affect the app search. If you change an app tile name to initials (eg 'Remote Desktop Connection' to 'RDC') then searching for 'remote' won't find it.*

## COLORS

At Setting | Personalization | Colors there are some color options for the look of Start Menu.



### Choose a color

This changes background color for the Start Menu etc . Normally this is chosen by Windows based on the current background. Try changing the Personalization | Background option to another color or image and the color for the taskbar and Start Menu will change. It works pretty well.

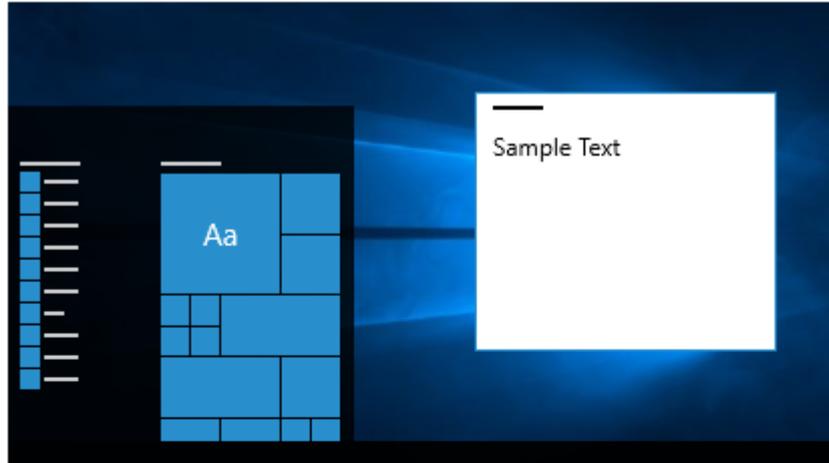
*If you have the Background set to Slideshow and this color option to Automatic, the Start Menu and taskbar color will change most times the background changes. That might be a little distracting so turn one of those options off.*

## Windows 10 for Microsoft Office users

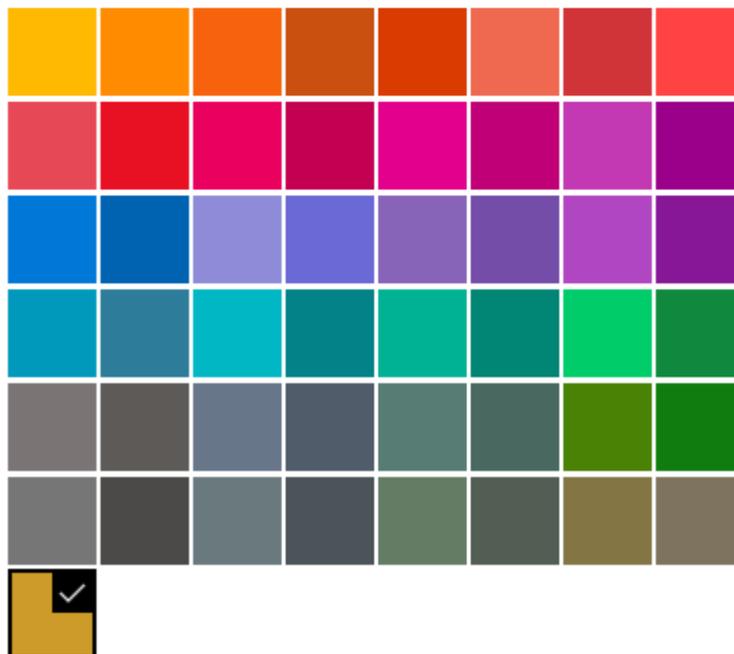
Start Menu and beyond - Changing the Start Menu

But if you don't like the automatic option, turn it off and choose a fixed color.

### Preview



### Accent color



Automatically pick an accent color from my background

MAKE START, TASKBAR AND ACTION CENTER TRANSPARENT

This is a subtle effect where there's a little transparency in the background instead of the solid color.

## Windows 10 for Microsoft Office users

Start Menu and beyond - Changing the Start Menu

SHOW COLOR ON START, TASKBAR AND ACTION CENTER

If Off, the Start Menu background will always be black. Otherwise it's the color chosen in the last option.



SHOW COLOR ON TITLE BAR.

Changes the color on title bars for Windows settings and Explorer.

HIGH CONTRAST SETTINGS

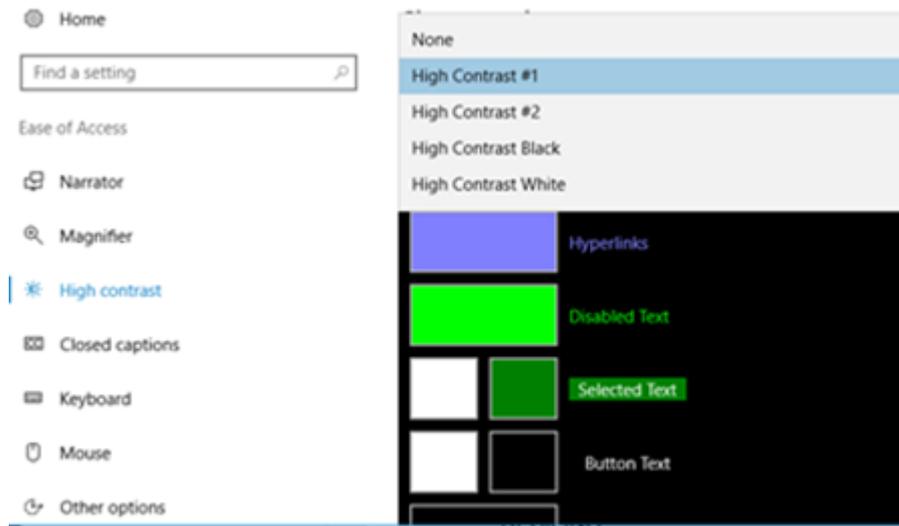
There are two major color options: Light and Dark.

For anyone who has trouble reading a standard screen. The High Contrast link takes you to Settings | Ease of Access | High Contrast.

## Windows 10 for Microsoft Office users

Start Menu and beyond - Changing the Start Menu

To those of us blessed with good vision, the High Contrast options can seem quite ugly. But for anyone with poor or degrading sight, they are very welcome options.



### RESIZING

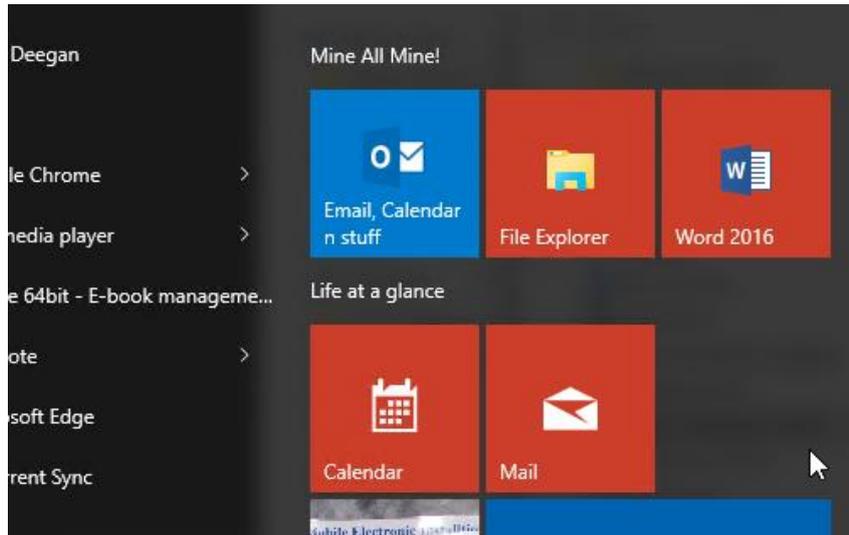
Resizing the Start Menu is possible and almost absurdly easy. Just drag the top or right edges (look for the double arrow mouse pointer)



## Windows 10 for Microsoft Office users

Start Menu and beyond - Changing the Start Menu

Moving from the right lets you reduce the menu to a single column of groups.



You can't shrink the Start Menu to zero columns using this trick.

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*To get rid of the tiles completely, remove all the tiles and groups. Then you'll have a small, more traditional, Start Menu.*

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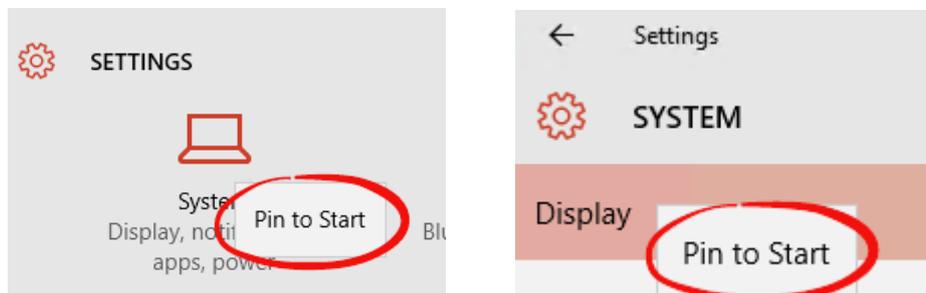
### GROUPING

As already noted, you can [rename and move](#) groups of tiles.

### FAST ACCESS TO SETTINGS

Windows 10 settings are still confusing. They are split between 'Settings' (the Modern interface) and the old, familiar 'Control Panel'.

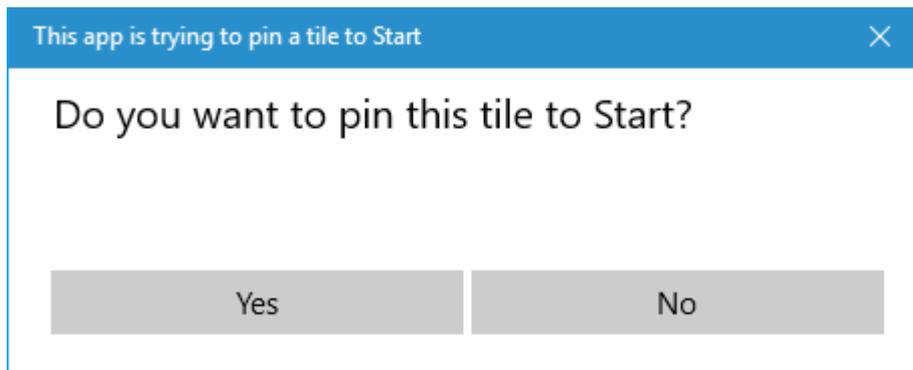
You can bypass the 'drill down' through Settings and Control Panel by right-clicking on icons or left-hand menu items and choosing 'Pin to Start'.



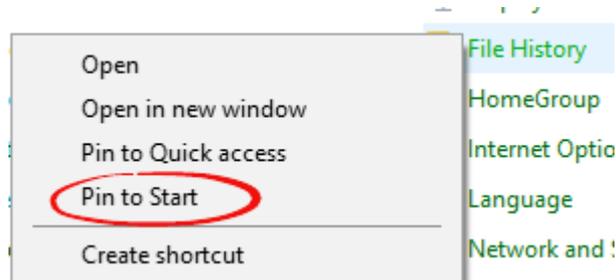
## Windows 10 for Microsoft Office users

Start Menu and beyond - Changing the Start Menu

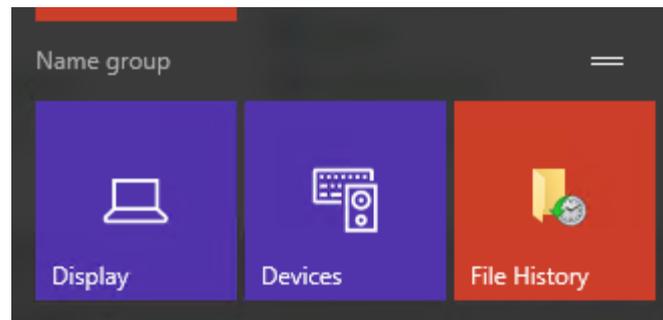
There's a warning when you try to do this, just click Yes.



It's also available on the Control Panel icons.



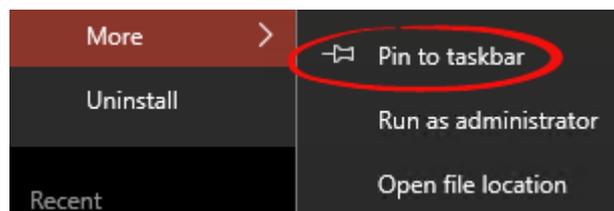
These pinned items are added to a new group.



From there you can move the tiles to another group or rearrange them into a 'Settings' group of your own.

### PIN TO TASKBAR

Right-click on a tile to see the options available.



## Windows 10 for Microsoft Office users

### Start Menu and beyond - Your own Start Menu

For commonly used programs like Word or Outlook, you'll probably want to put them on the taskbar. Click on 'Pin to taskbar' to do that. Here's a taskbar with Google Chrome, Word, Outlook and the Edge browser pinned:



You can pin any program to the taskbar for the easiest access.

Right-click on the pinned icon and choose 'Unpin from taskbar' to remove it.

### HOW BIG?

With the November 2015 release, you can now have 2,048 separate tiles (up from a 'mere' 512).

### SUGGESTIONS

Some Start Menu options to consider:

- The weather app can be nearby because it's nice to know what's going on in the real world without that tiresome business of looking out the window 😊.
- We regularly use Remote Desktop Connection so it gets promoted from 'All Apps' to the big leagues.
- We've turned off the Live Tile feature where available (for example News) because they can be yet another distraction from work! There are also privacy concerns.
- On the other hand, an Outlook Live Tile would be nice – it could display recent emails, upcoming appointments etc. Alas, despite all the boasting about Live Tiles from Redmond, Microsoft Office lacks any support for it.

## YOUR OWN START MENU

After installing Windows and Office you'll probably want to rearrange the Start Menu to put the most commonly used programs/tiles on the left where you can reach them without scrolling.

Here's what we suggest to make the Start Menu truly useful.

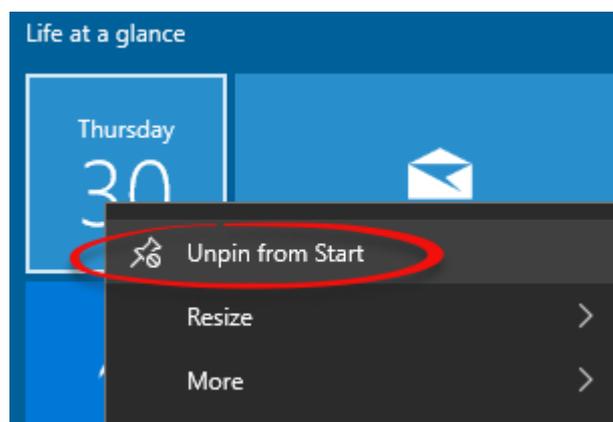
## Windows 10 for Microsoft Office users

### Start Menu and beyond - Your own Start Menu

Firstly, get rid of the entire Microsoft supplied collection of tiles. All of the 'Life at a glance' and 'Play and explore' groups.



There may be some tiles you like, by all means keep them, but otherwise dump them. Do that by right-clicking on each tile and choose 'Unpin from Start'.

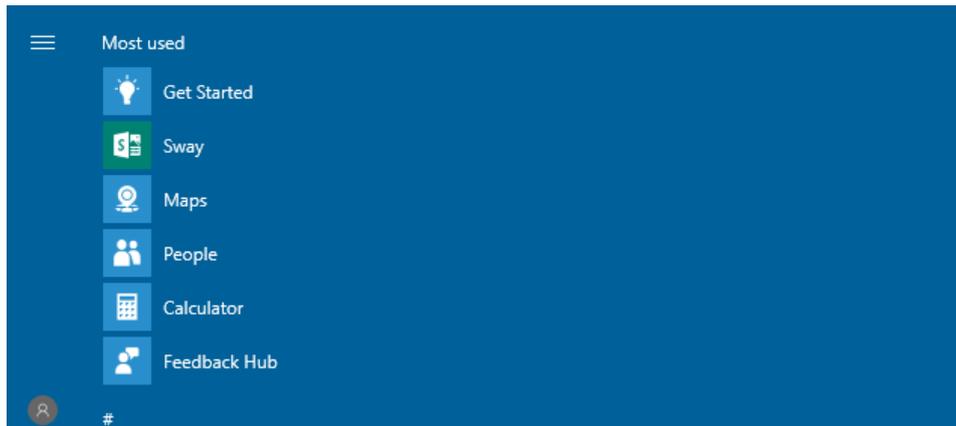


Why? Because any tiles you add to the Start menu are placed below the existing groups. For most people and screens, that means the new tiles don't show on the screen at all. You have to scroll down the Start Menu to see the tiles you've specifically added. By removing the 'Microsoft billboard' of tiles, you've made space on the screen to see tiles and programs you truly want.

# Windows 10 for Microsoft Office users

Start Menu and beyond - Your own Start Menu

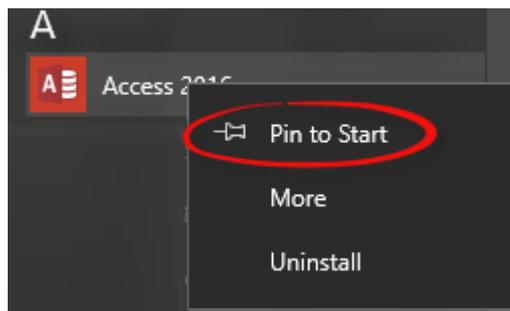
Now you have a 'blank' Start Menu that can be filled with what you want.



All the Office program tiles are put on the All apps list. Also, perhaps, added to the taskbar depending on which version of Office you install.

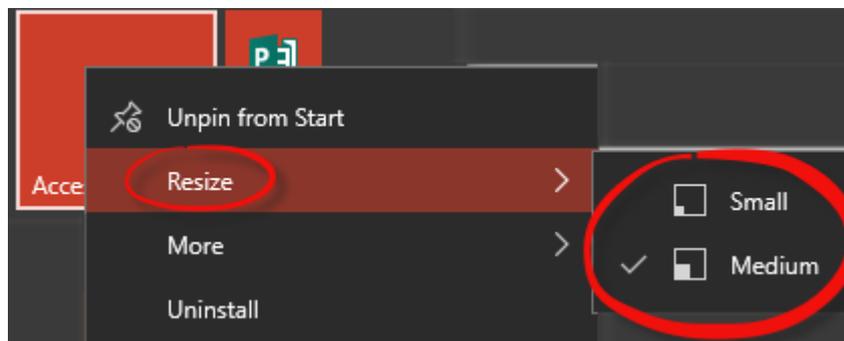
As an example of what you can do, we'll move key Office program tiles to the Start Menu.

Firstly, choose the apps from the All apps list and move them to the Start Menu. Right-click on an item and choose 'Pin to Start'.



It's faster and more accurate to drag an All apps items to a position on the Start Menu.

Once on the Start Menu, you can change the tile size.



## Windows 10 for Microsoft Office users

Start Menu and beyond - Replacing the Start Menu

Here's a rearranged and condensed group, just as an example of what is possible.



We've put Outlook, Word and Excel in prime positions at top. The other Office apps are smaller tiles on the second row.

In addition, Word and Outlook are invariably running so they are [pinned to the taskbar](#).

## REPLACING THE START MENU

With Windows 10, Microsoft took a step back from the reviled full screen version in Windows 8.

Many people, understandably, are more comfortable with the 'old' left hand, single column menu. That's quite possible in Windows 10.

There are three ways to do it. The Windows 10 Start Menu can be configured to remove the tile elements and leave only the single column. Or there are two main third-party tools that can bypass the Windows Start Menu completely.

### CHANGING THE WINDOWS START MENU

To get a single column menu with the Windows 10 system, remove all the tiles and groups. Sadly, there's no simple switch to do that.

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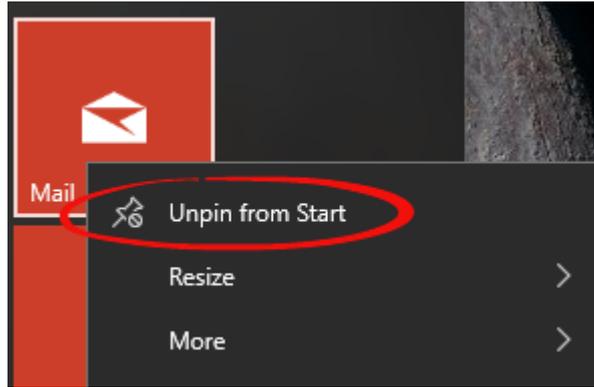
*There's no 'Undo' available. If you remove the all the tiles and then change your mind, you'll have to rebuild the Start Menu yourself.*

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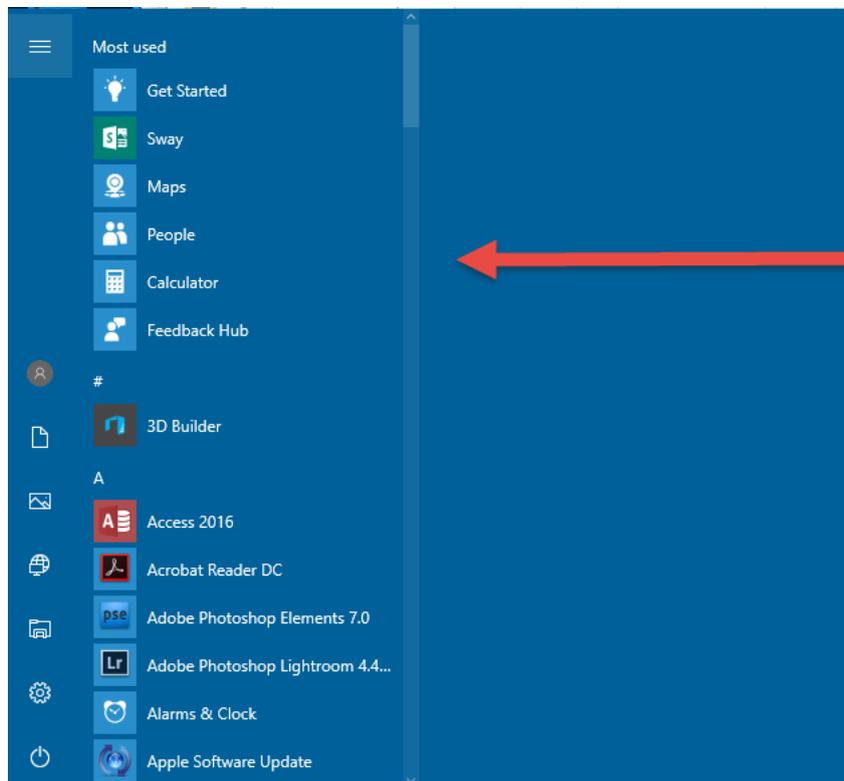
For each tile, right-click and choose 'Unpin from Start'.

## Windows 10 for Microsoft Office users

### Start Menu and beyond - Replacing the Start Menu



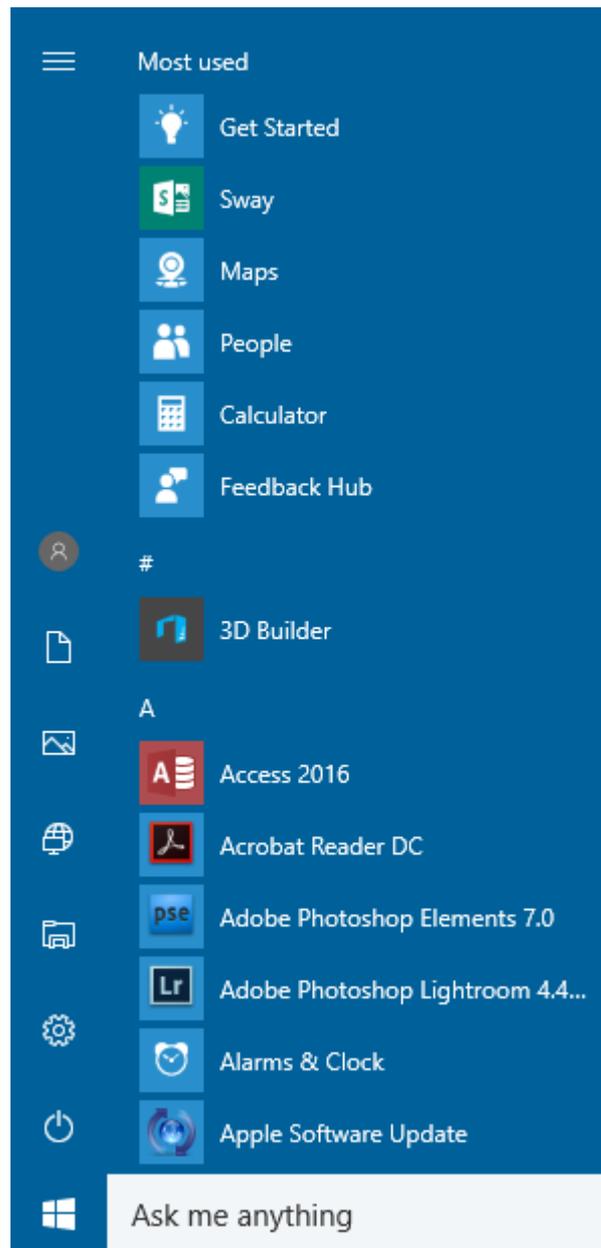
When all the tiles have gone, you're left with a big blank area on the screen. Remove that by grabbing the right edge of the Start Menu and dragging to the left.



## Windows 10 for Microsoft Office users

Start Menu and beyond - Replacing the Start Menu

Here's the final result.



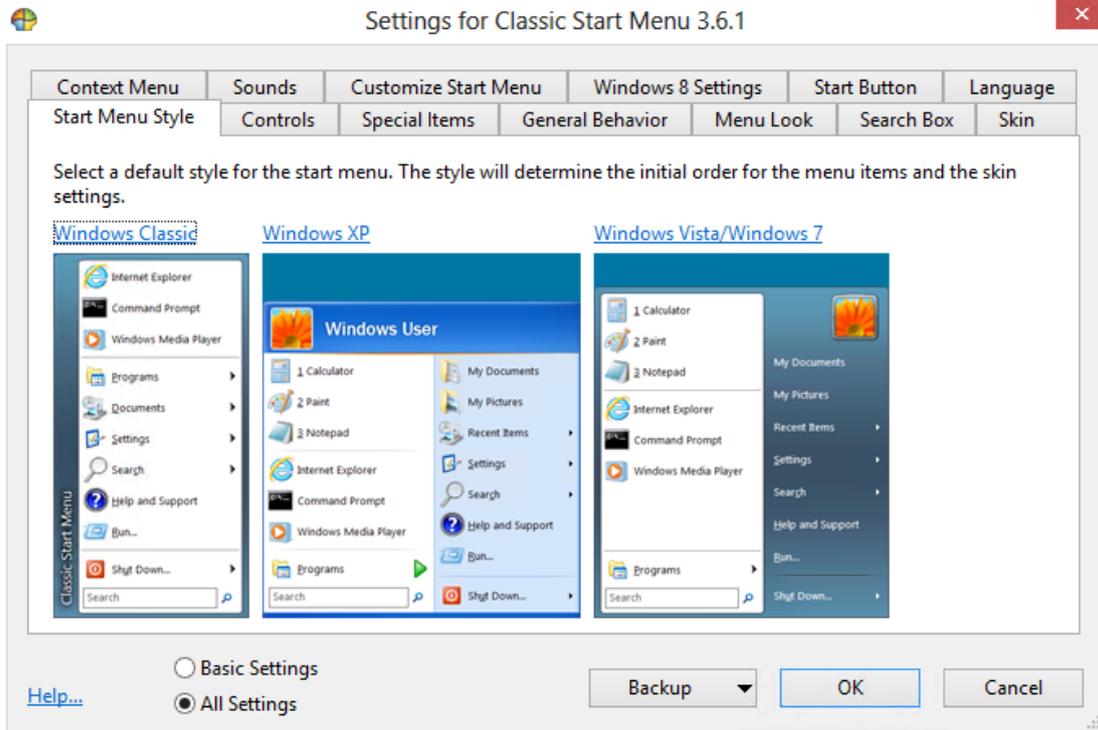
As you can see, it's a single column menu but there's no way to add your preferred programs to that column. That's why people are still dumping the Windows 10 Start Menu in favor of a more configurable replacement.

# Windows 10 for Microsoft Office users

Start Menu and beyond - Replacing the Start Menu

## CLASSIC START MENU

This is a highly configurable menu system with many options to choose from



Source: Classic Shell

Price: Free

[http://classicshell.sourceforge.net/features.html#start\\_menu](http://classicshell.sourceforge.net/features.html#start_menu)

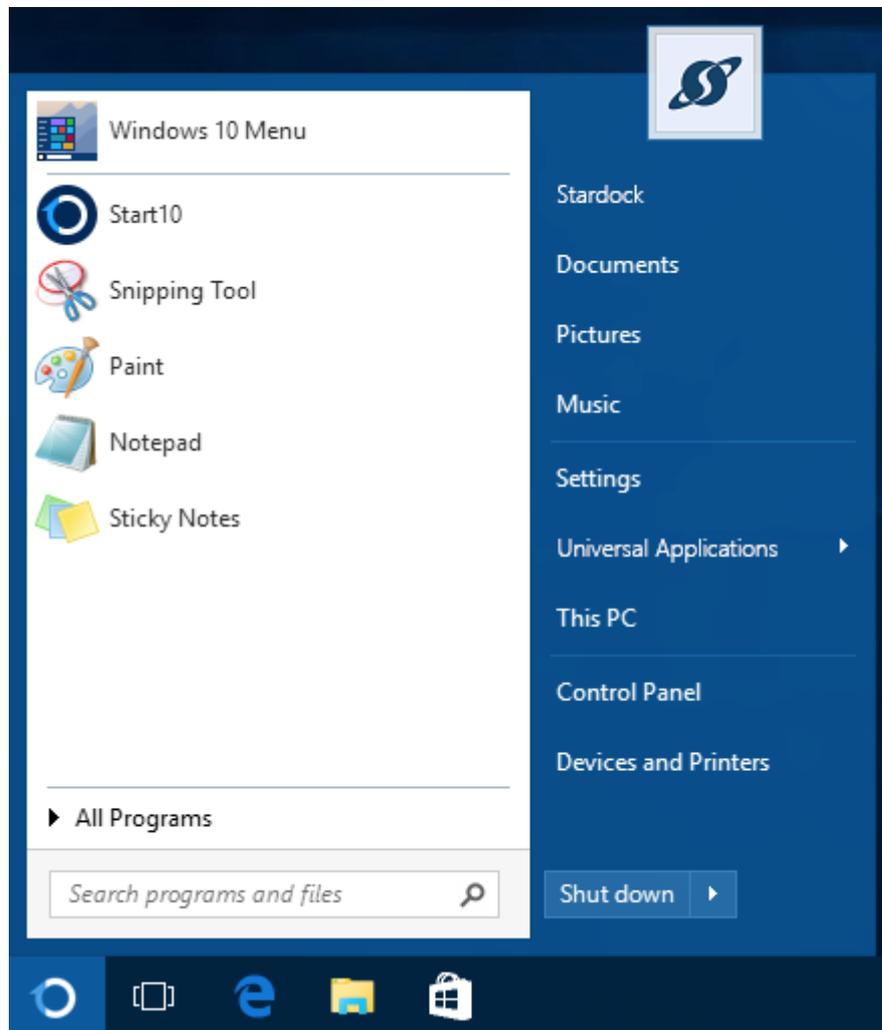
We've been using Classic Shell for many months on a laptop where screen space is limited and the Windows Start Menu becomes a real nuisance.

## Windows 10 for Microsoft Office users

Start Menu and beyond - Replacing the Start Menu

### START10

Stardock has made Windows interface add-ons for many years so they have 'game' in this field.



Source: StarDock

Price: Free trial then \$4.99

<http://www.stardock.com/products/start10/>

## Windows 10 for Microsoft Office users

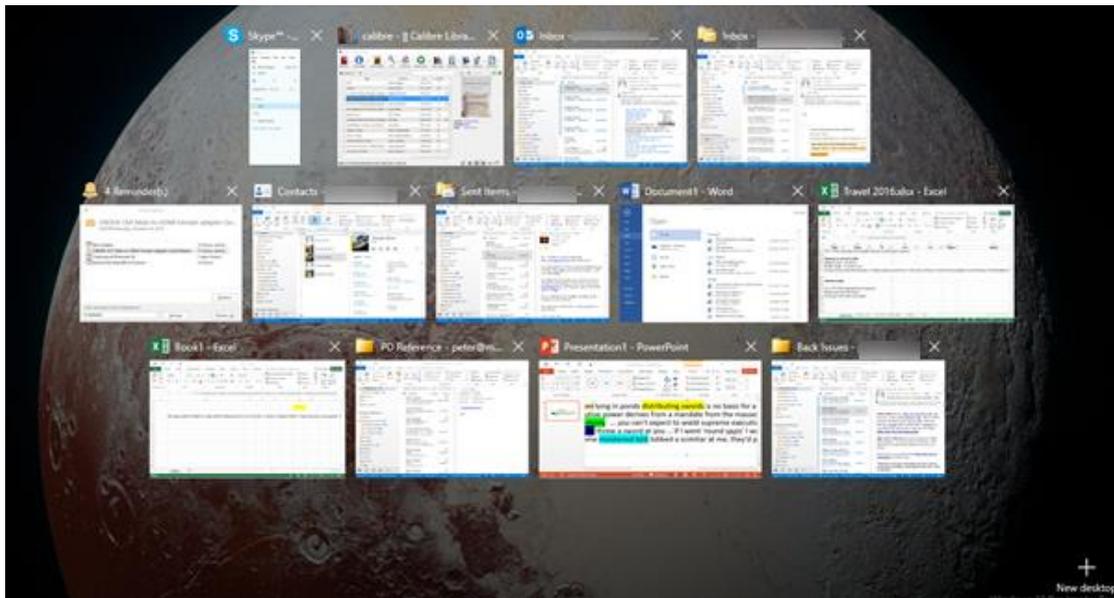
Around the Screen - Switch List

# AROUND THE SCREEN

Microsoft has dropped the concept of 'hot corners' that they tried in Windows 8. But there are plenty of options for moving between programs/apps.

## SWITCH LIST

On a touch screen slide your finger from the left of the screen inwards to see a list of all apps open on the current desktop.



**Win + Tab** will show the same switch list and let you cycle through the open apps.

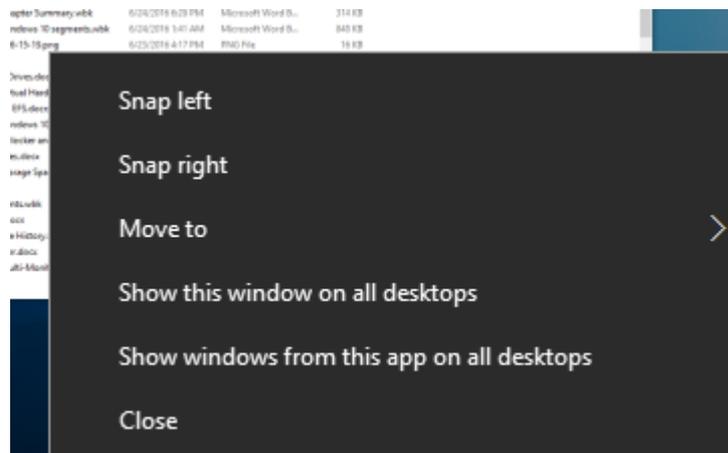
**Alt + Tab** does a similar thing but the screen only remains open while you hold down the Alt key.

Click on the X at top right of any thumbnail to close that window.

# Windows 10 for Microsoft Office users

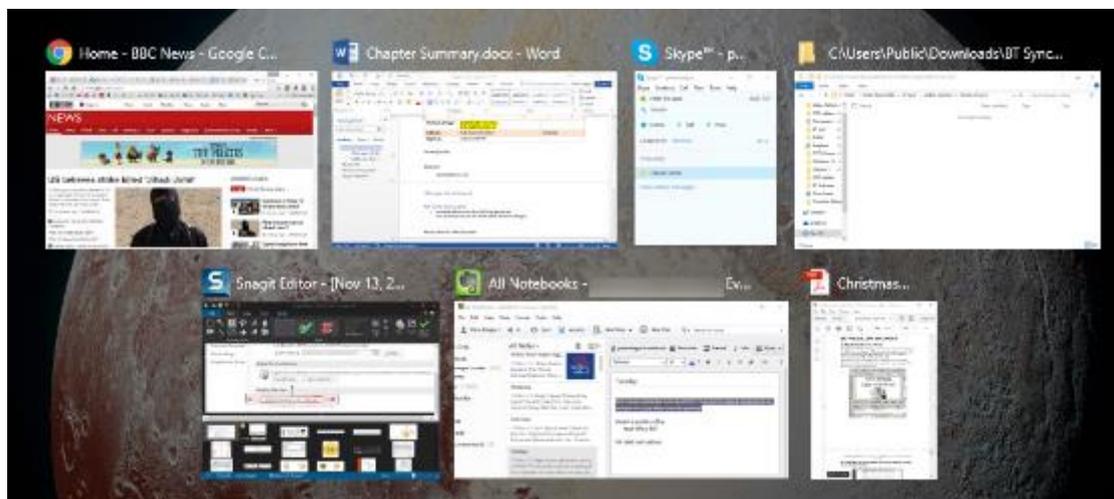
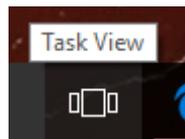
## Around the Screen - Task View

Right-click on an app thumbnail to Snap the window to the left or right, move it to another virtual desktop or close.



## TASK VIEW

Similar to the Switch List is the Task View available from the default icon on the task bar.

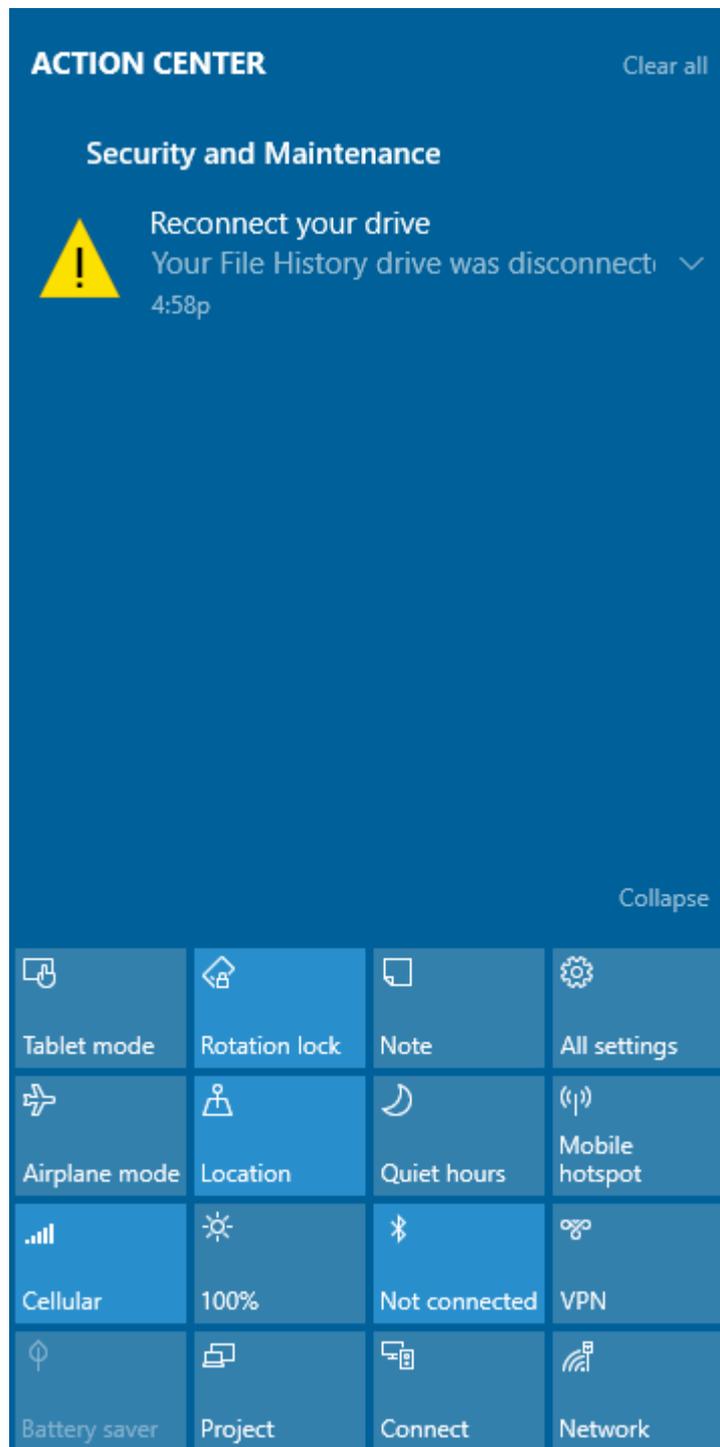


# Windows 10 for Microsoft Office users

Around the Screen - Action Center

## ACTION CENTER

Sliding from the right of the screen opens the Action Center.



**Win + A** opens the Action Center.

At the bottom are Quick Actions, an easy way to change some options such as:

**Tablet Mode** – useful with a laptop with touch screen where you might need to manually switch on/off Tablet Mode.

## Windows 10 for Microsoft Office users

Around the Screen - Action Center

**Rotation Lock** – when the screen auto-rotation gets annoying.

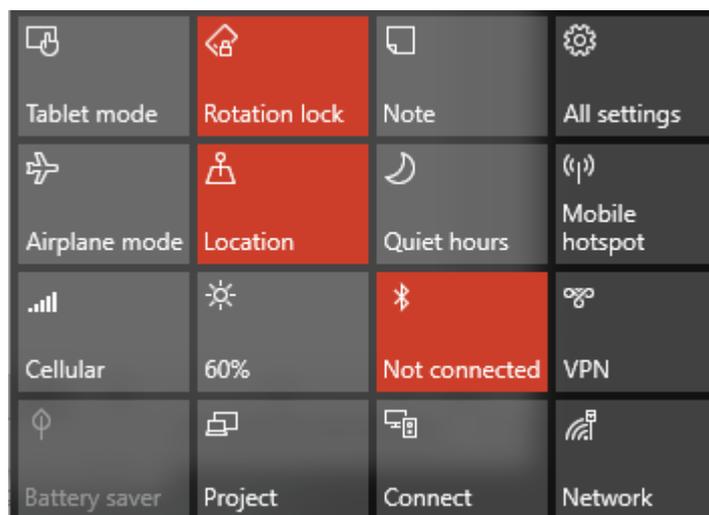
**Airplane Mode** – turns off all wireless functions.

Right-click on any Quick Action tile to see options that might be available.

### CONFIGURE

Settings | System | Notifications and actions lets you change the Quick action tiles.

A big part of clicking on the Action Center button (or Win + A) is to reach the Quick Action buttons:



It's worth spending some time trying out the Quick Action buttons because they can be useful shortcuts. Some worth checking are:

**Rotation Lock** – if your device auto-rotates the screen when it should not, turn this on.

**Note** – will open OneNote, if installed.

**Brightness** – click/tap to cycle through screen brightness settings.

**Project** – to extend the display to an external screen. Handy for PowerPoint users and anyone using a [wireless external display](#).

**Network** – opens the Network Pane.

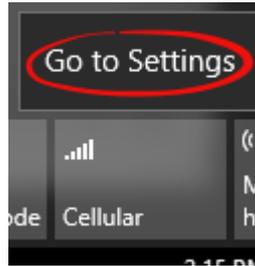
**Battery Saver** – reduces background tasks and hardware settings to preserve battery life.

**All Settings** – opens the Settings window.

# Windows 10 for Microsoft Office users

## Around the Screen - Action Center

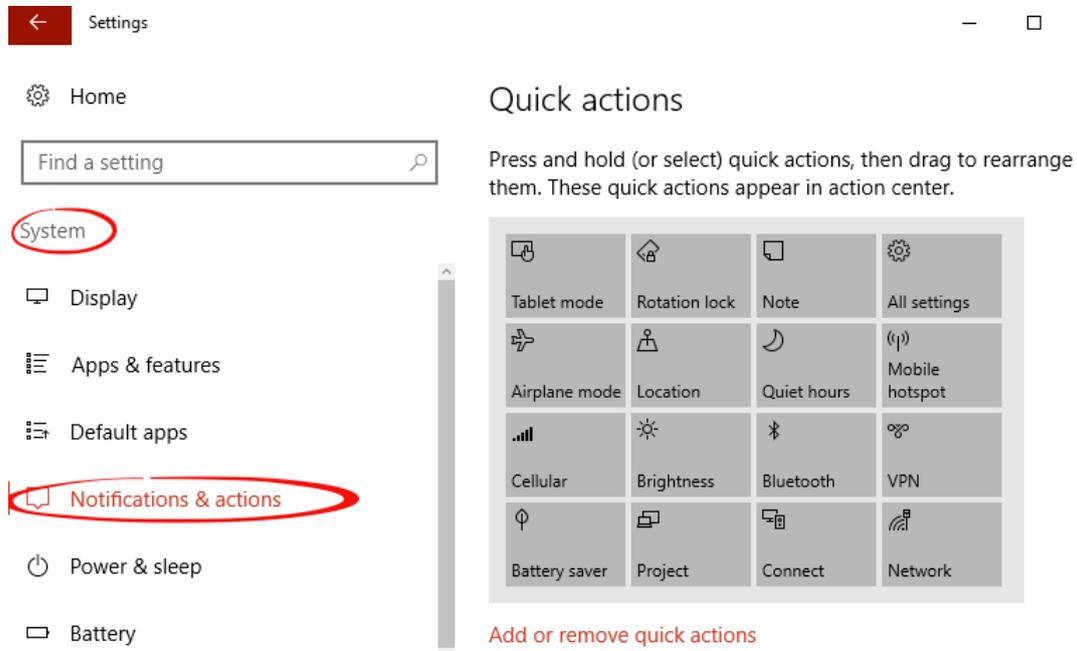
Right-click / long tap on any button to see a link to the related Settings.



### CONFIGURING QUICK ACTIONS

What isn't obvious from the Quick Action buttons is that they're configurable. Alas, there's no button or link to make it easy.

Go to Settings | System | Notifications & actions.



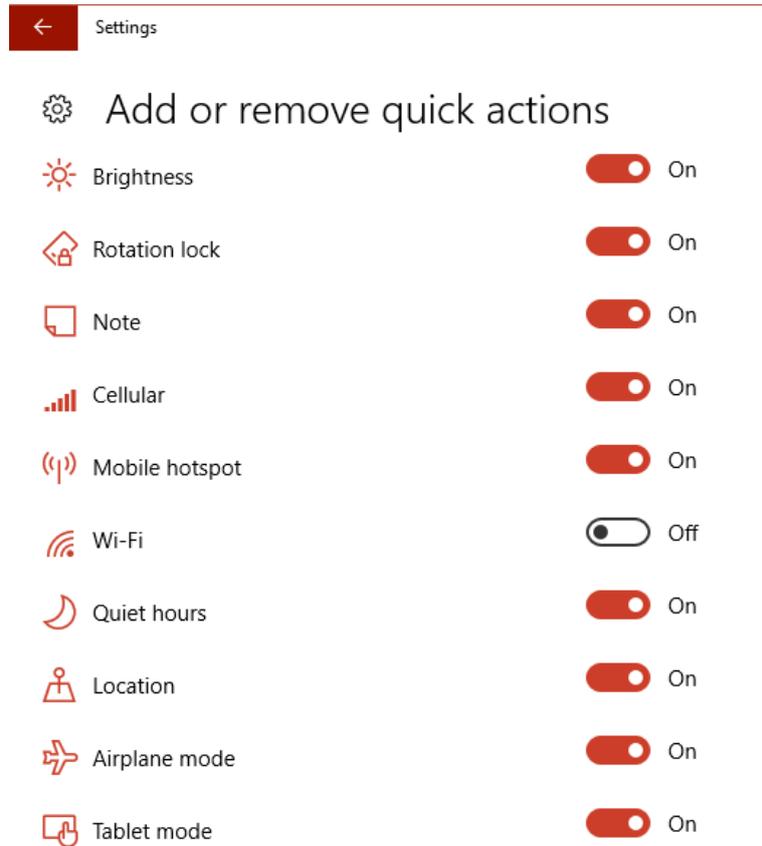
On this screen above you can rearrange the buttons to suit yourself.

The 'Add or remote quick actions' link could be lot more useful. At present the only button not displayed by default is Wifi (presumably because it's already on the Network pane).

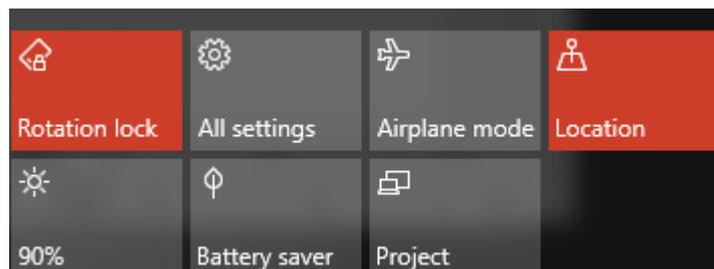
# Windows 10 for Microsoft Office users

## Around the Screen - Action Center

What you could do is disable some of the default Quick Action buttons to give you a smaller and easier to navigate list.



Here we've disabled some buttons that don't apply to our use of Windows 10 like VPN, Cellular, Quiet hours and Note.



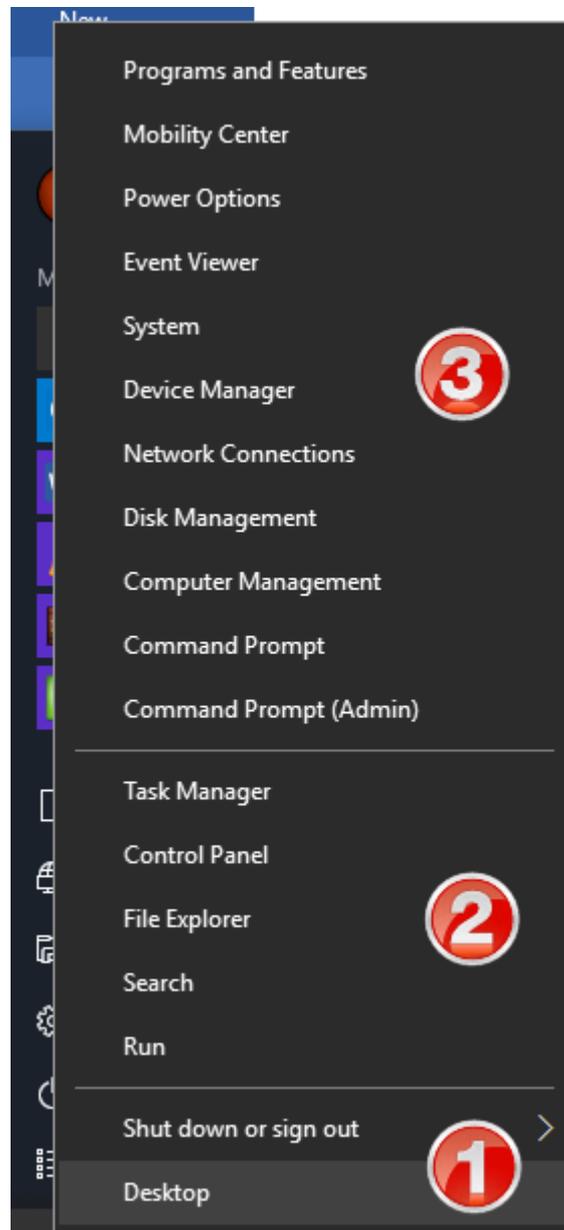
We can hope that Microsoft or other developers will add more options to this list.

## Windows 10 for Microsoft Office users

Around the Screen - Administration menu

### ADMINISTRATION MENU

Right-click on the bottom left Start Menu thumbnail to show the Administration menu which will also pop up with the Win + X shortcut.



The menu is made up of three groups, as shown above. The groups are used when configuring the menu.

### CUSTOMIZING

This menu is customizable but not easily. The entire menu is created from shortcut files stored in

`C:\Users\\AppData\Local\Microsoft\Windows\WinX`

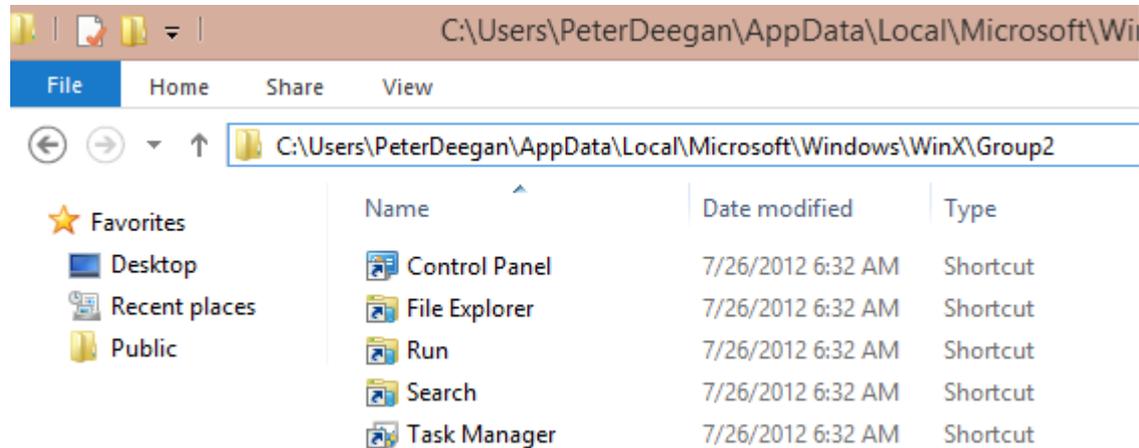
## Windows 10 for Microsoft Office users

Around the Screen - Search box

with three sub-folders; one for each section of the menu split with the gray horizontal lines.

This procedure hasn't changed from Windows 8.

For example, here are the shortcuts for a default Group 2



You can rearrange the shortcuts and even make a 'Group4' folder. However, making new shortcuts or renaming existing ones doesn't work as you'd expect. Any changes you do make only show up after a logoff from the computer.

## SEARCH BOX

By default, Windows 10 comes with a Search box on the taskbar. It's another shameless attempt by Microsoft to get you using their Bing search engine.



Searching is important in Windows and especially Windows 10. It's the easiest way to reach programs ... just press the Windows key then start typing.

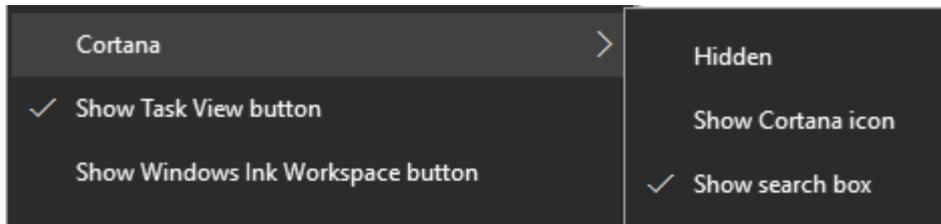
So you don't need the big box taking up room on the task bar. You don't even need the alternative icon that's available.



# Windows 10 for Microsoft Office users

## Around the Screen - Taskbar

The change away from the search box, right-click in the box (or blank part of the task bar) then choose Cortana and either Hidden, Show search icon or Show search box.

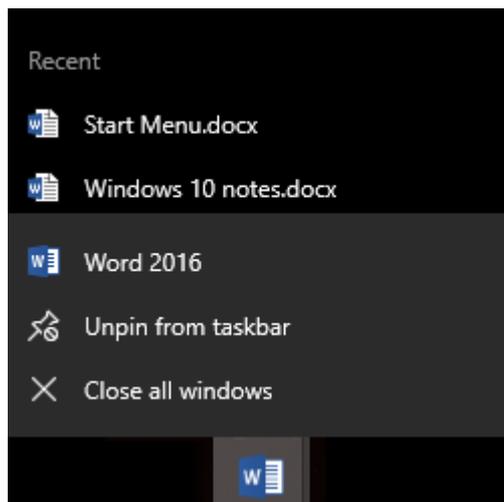


With searching just a keystroke away (the Windows key then type) both the box and icon aren't really necessary.

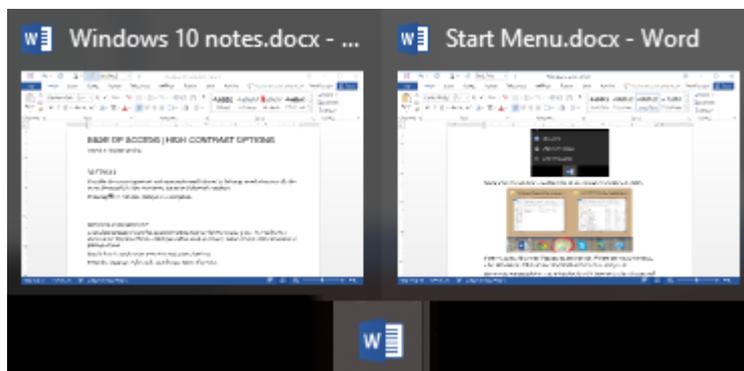
## TASKBAR

The desktop taskbar remains much the same as in Windows 7 and 8.

Right-click on a taskbar icon to see various options including, in some cases, recently opened documents. It looks different in Windows 10 but works the same as earlier versions of Windows.



Hover your mouse over a taskbar icon to see the open windows available.



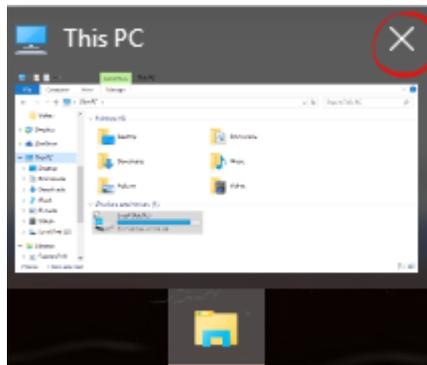
A small, but welcome, change is the appearance of the document name not the path.

## Windows 10 for Microsoft Office users

### Around the Screen - Taskbar

If there's only a few, they'll appear as thumbnails. If there are many windows, a list will appear. Click on any thumbnail or list item to jump to it.

Hover your mouse pointer over a thumbnail or list item and a close button will appear at top right. Click on that to close the window immediately. This is very handy for tidying up your screen quickly.



Another small but welcome change in Windows 10 is the indicator of open apps on the taskbar. A small horizontal bar indicates that the app is running.



In the above example the Store (middle) is pinned to the taskbar but not running. File Explorer and Word (left and right) are running as shown by the bar at bottom of the icon.

Sometimes programs will drop themselves onto the taskbar during installation whether you like it or not.

### REARRANGING

The taskbar icons can be moved into whatever order you like by dragging them along the taskbar and dropping to a new location.

### REMOVING

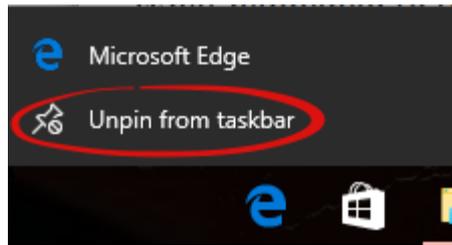
Microsoft puts some programs on the taskbar by default. Most notably, Microsoft Edge (their new browser) and the Shop (Microsoft's version of the App Store).

Other programs drop themselves onto the taskbar. Some Office 2016 installations put all the main program icons onto the taskbar.

It's likely you won't need those cluttering up the taskbar. Most people have their preferred browser (Chrome or Firefox) and the Shop is on the taskbar because Microsoft wants to sell stuff.

## Windows 10 for Microsoft Office users

Around the Screen - Insert / Snap

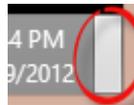


For those and any other unwanted taskbar icons, right-click on the icon and choose 'Unpin from taskbar'.

The app will still be available from the Start Menu.

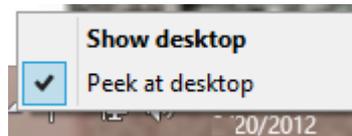
## BOTTOM RIGHT

Next to the bottom right corner, when there's a taskbar, is the show/hide desktop button that was in Windows 7 and 8.



It doesn't show up unless you press on it.

Right-click on that hidden button to see a 'peek' option.



With that option enabled you only have to hover the mouse pointer over that bottom right button to temporarily hide all programs and let you view the desktop.

## INSERT / SNAP

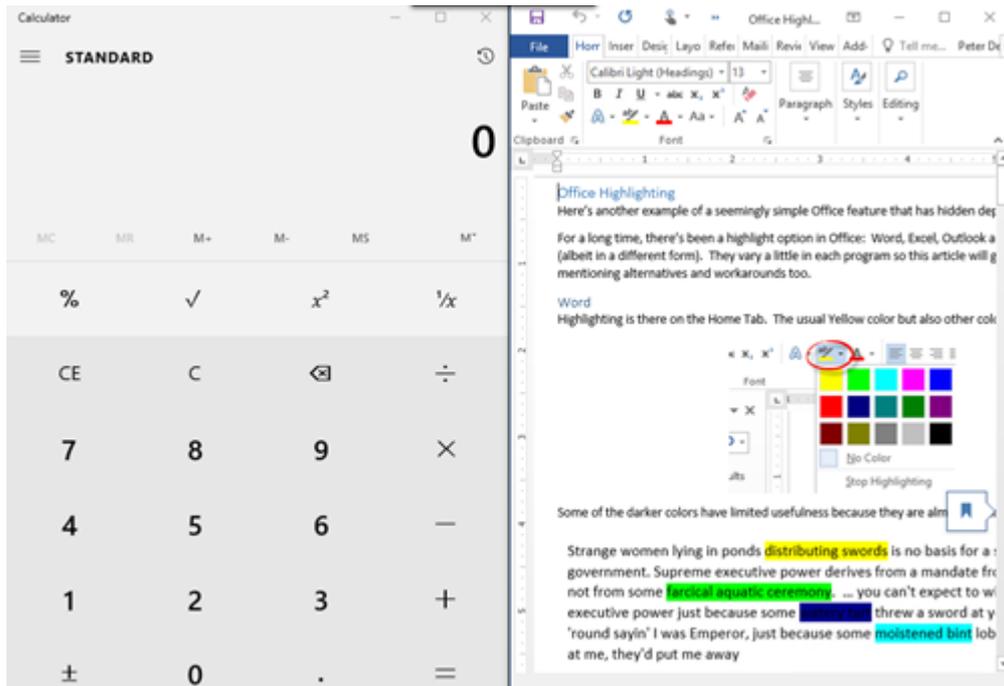
We've already mentioned the 'Snap left' and 'Snap right' options available when you right-click on an app thumbnail in the [switch list](#).

Snap is a way to quickly position an app or program on one half of the current screen.

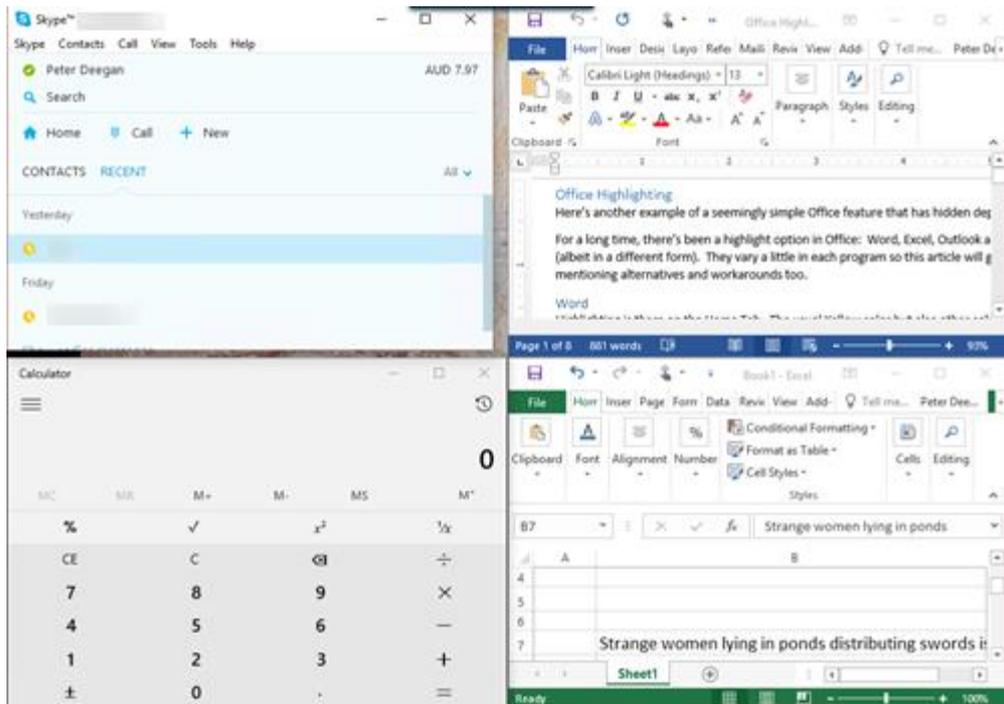
# Windows 10 for Microsoft Office users

Around the Screen - Insert / Snap

Here's Word and the Calculator app snapped to each side of the screen.



It's also possible to snap programs to each of the four corners.

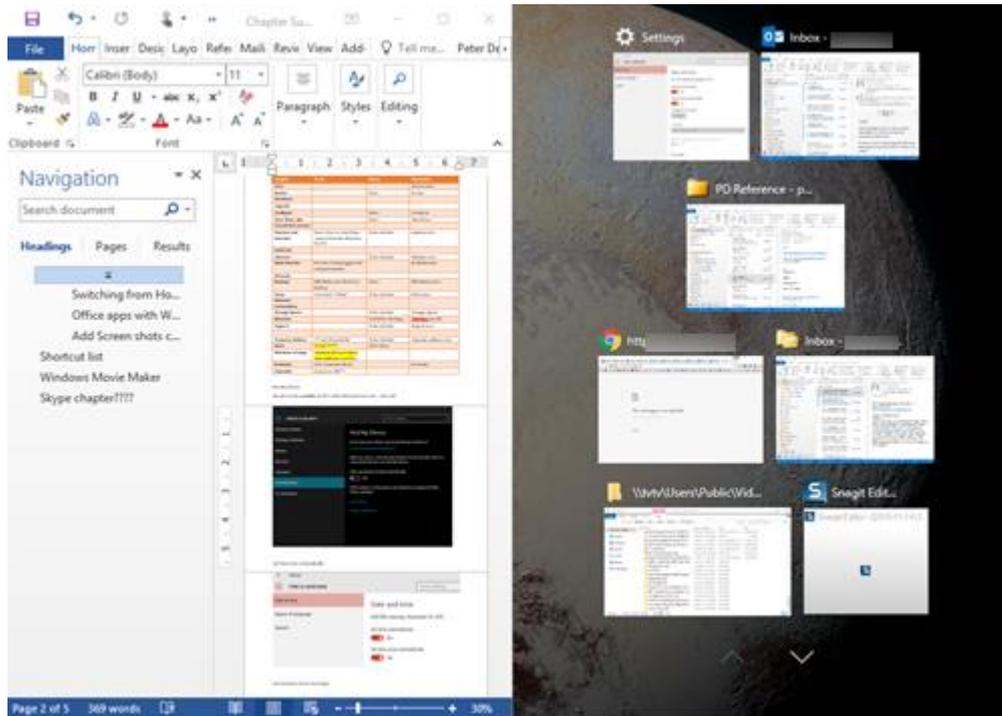


Windows 10 has a more convenient way to select the second app for a split screen. Position/Snap the first app to left/right and the other half of the

## Windows 10 for Microsoft Office users

Around the Screen - Insert / Snap

screen will change to Task View. Click on a thumbnail to select the other window to show.



### HOW TO INSERT / SNAP

There are many window sharing / insert methods depending on whether you have a mouse, touch screen or keyboard.

To snap a full screen Windows app:

- click your mouse on the top edge / title bar of the app/program
- drag to the top middle of the screen.
  - A little 'water drop' effect will appear when it's ready to maximize
- Release the mouse/drag.

To snap to the left or right:

- drag the top/title bar to the left or right and 'off the screen'
  - look for a subtle animation showing a line on that half of the screen.
- Release to move.

You've already seen how to insert left or right from the Switch List, right-mouse menu.

### TILE / APP SHORTCUTS

These shortcuts work in all Windows apps and programs.

## Windows 10 for Microsoft Office users

Around the Screen - Insert / Snap

**Win + Left/Right arrow** - sends the active app to the left/right

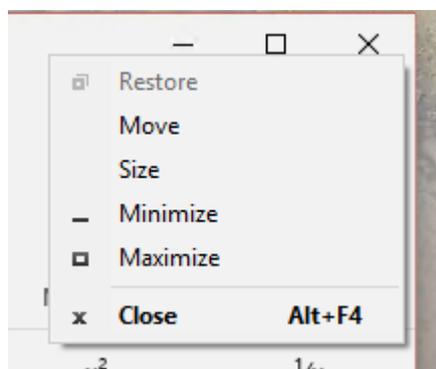
**Win + Up arrow** - expands the size of the selected app. From minimized it will switch to the last window position, press Win + UP arrow again and it'll switch to maximized.

**Win + Down arrow** - reduces the size of the selected app. From maximized Win + Down arrow will change the app to its last window position. Press again to minimize.

**Win + Tab** - takes you to the [Switch list](#).

**Alt + Tab** - the fast switch list.

Annoyingly, the snap options haven't been added to the title menu nor right-corner options:



### DESKTOP SNAP

Let's go into detail about the Snap options as they apply to Office programs. These snap options are the same as in Windows 8 but, in our experience, aren't used enough. Sadly, they also have an important omission.

Holding the Windows key then using the arrows can control the currently open desktop program window.

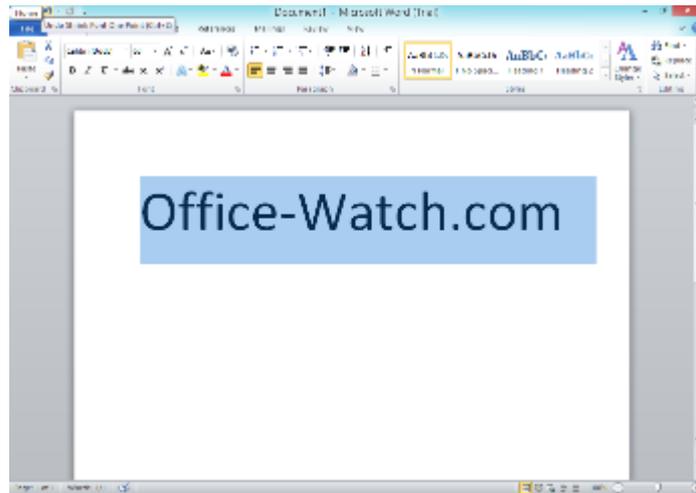
Here's Word 2010 on the desktop:



## Windows 10 for Microsoft Office users

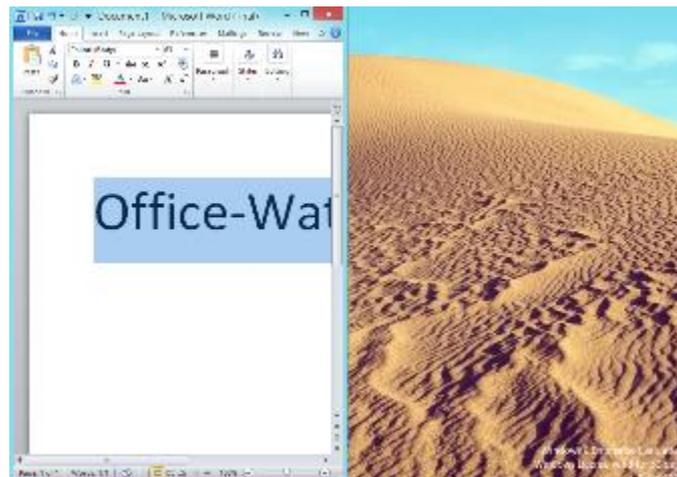
Around the Screen - Insert / Snap

Press **Win + up arrow** will maximize the window.



**Win + down arrow** will restore the window to its original position and size.

Press **Win + right arrow** will snap the window to the right half of the screen – nifty eh?

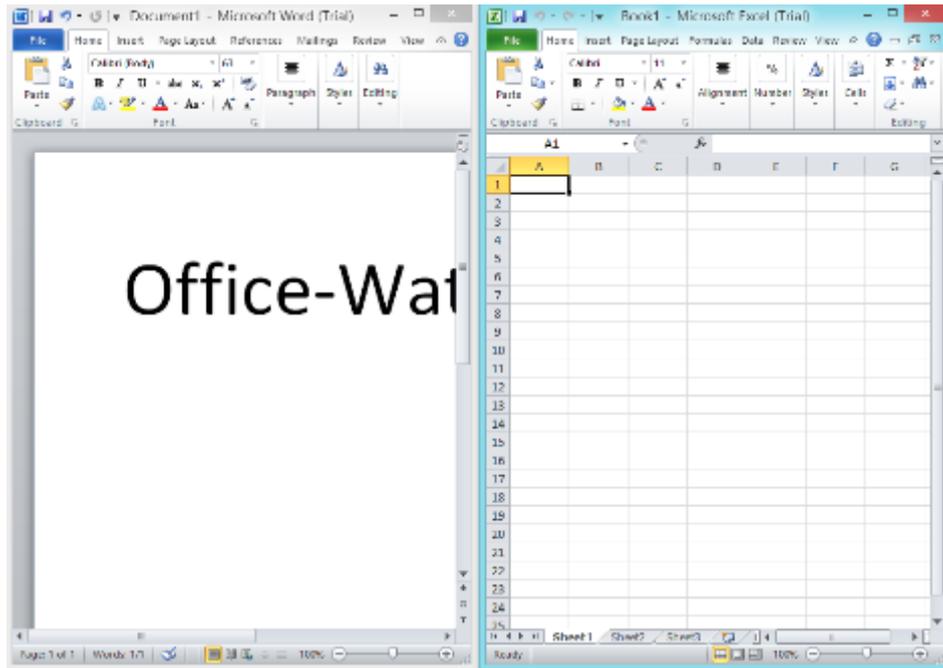


No surprise that **Win + left arrow** will snap the window to the left half of the screen.

Combine **Win + left** and **Win + right** on different windows to put two programs, like Word and Excel, side-by-side.

## Windows 10 for Microsoft Office users

### Around the Screen - Insert / Snap



To summarize these desktop snap shortcuts:

Win + **Up** Increase size up to Maximize

Win + **Down** Reduce size to Restore then Minimize

Win + **Left** Snap to left

Win + **Right** Snap to right

---

*Try these out and become used to them.*

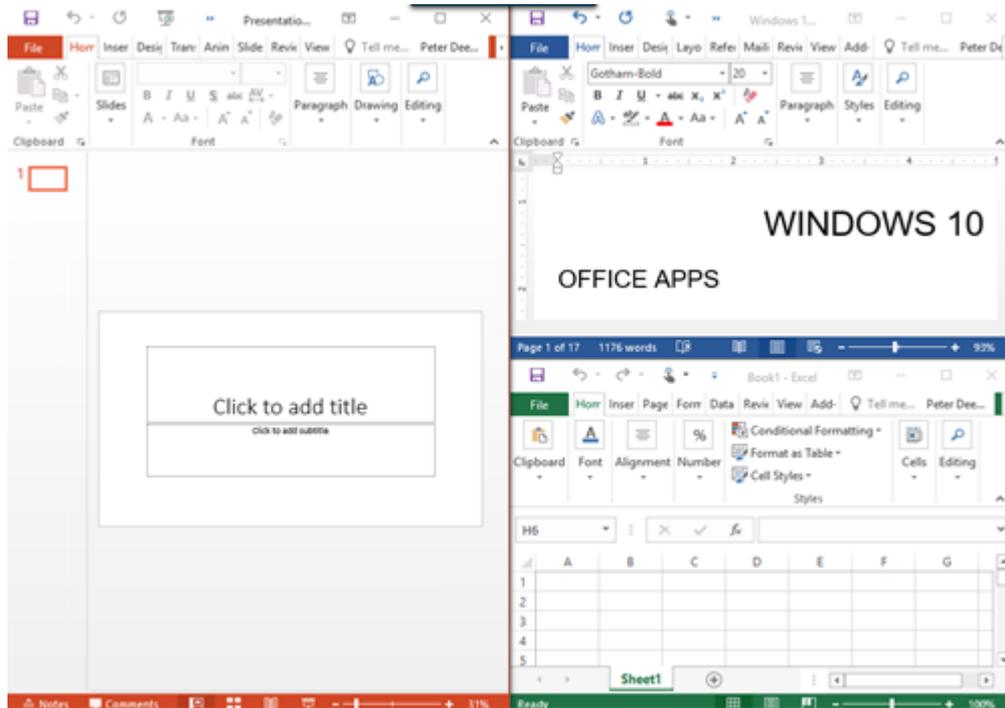
*The Maximize/Standard/Minimize options alone are very useful.*

---

## Windows 10 for Microsoft Office users

Around the Screen - Insert / Snap

It's also possible to have three snapped apps with two in corners and a third on the side:



### OFFICE FORGOTTEN AGAIN

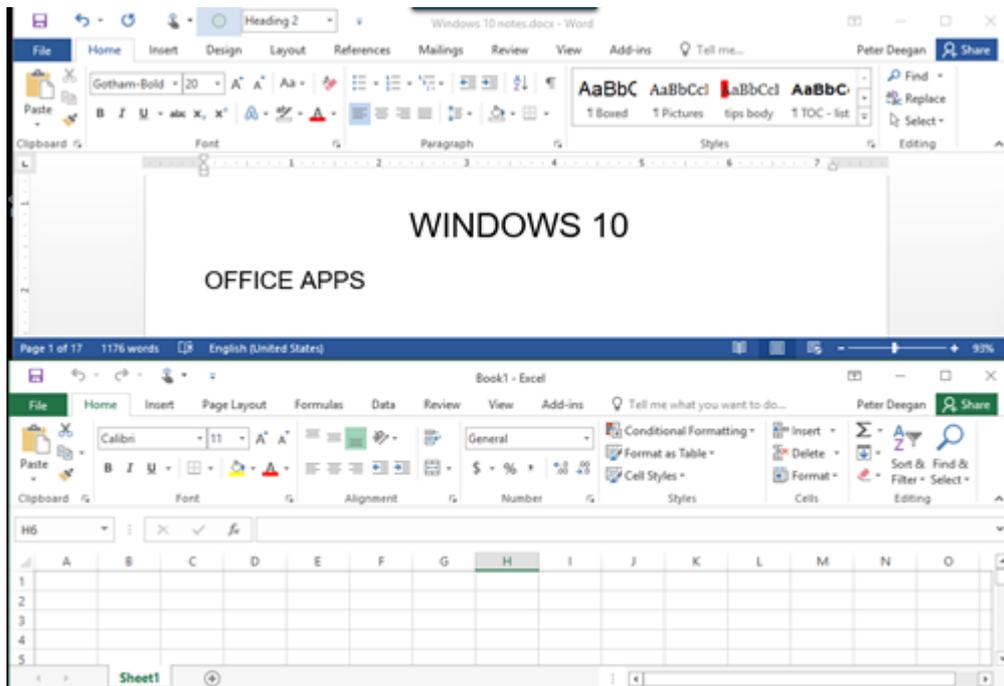
When developing the Snap options for Windows, you'd expect Microsoft to made them suit the company's biggest selling program: Microsoft Office. But you'd be wrong.

That's because there's no horizontal Snap options that would be ideal for the crowded Office ribbon interface.

# Windows 10 for Microsoft Office users

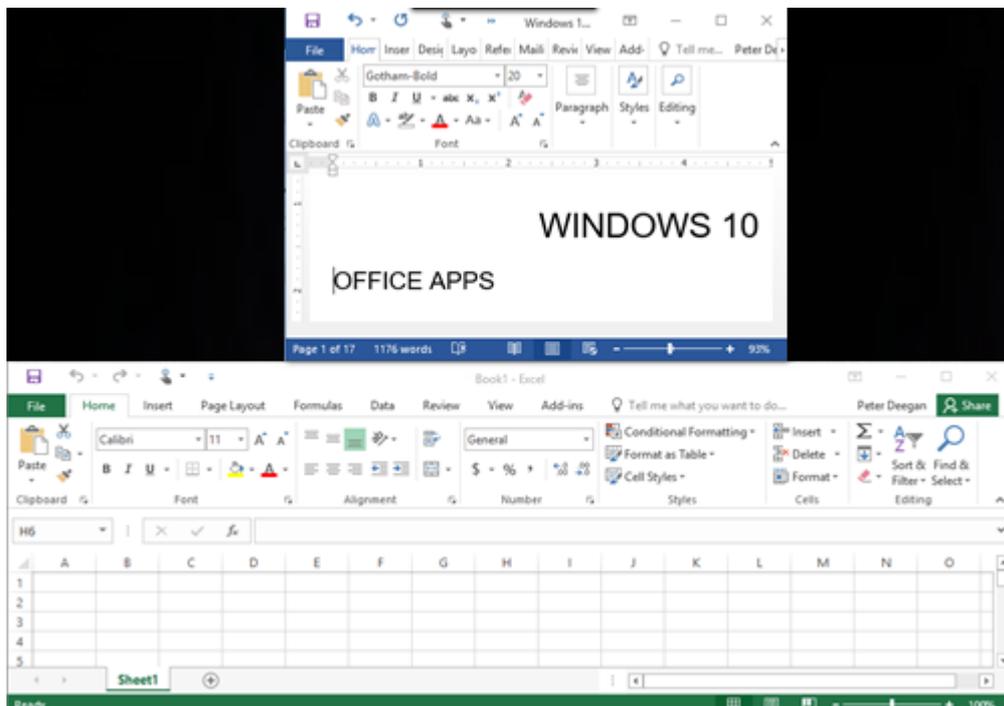
Around the Screen - Insert / Snap

As you can see above, it's possible to vertically snap an app to left or right. But the same snap options aren't available top and bottom, like this:



We made the above example by manually dragging the Word and Excel apps from snapped corners to across the entire width of the screen.

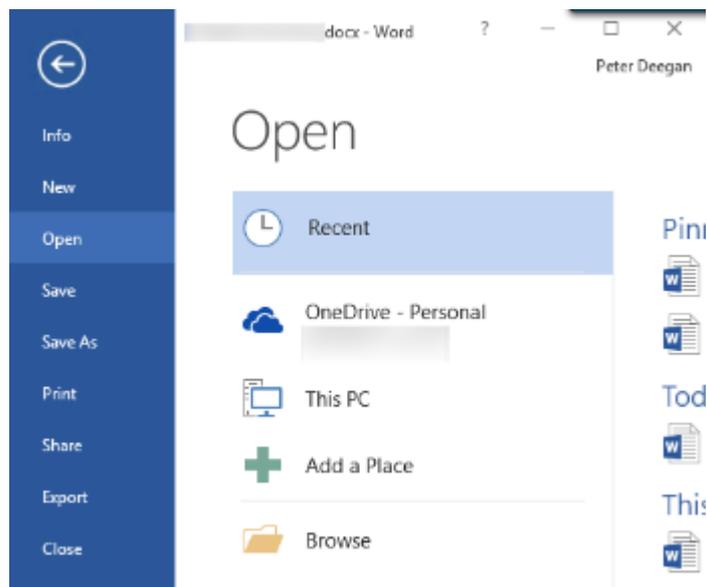
Why do Office users want this option? Because Office works best with enough screen width. The Office ribbon interface is much more useable in wider views. Compare Word and Excel in this example.



## Windows 10 for Microsoft Office users

Around the Screen - Insert / Snap

And the Office 'Backstage' pane isn't very useful at all in such a narrow view.

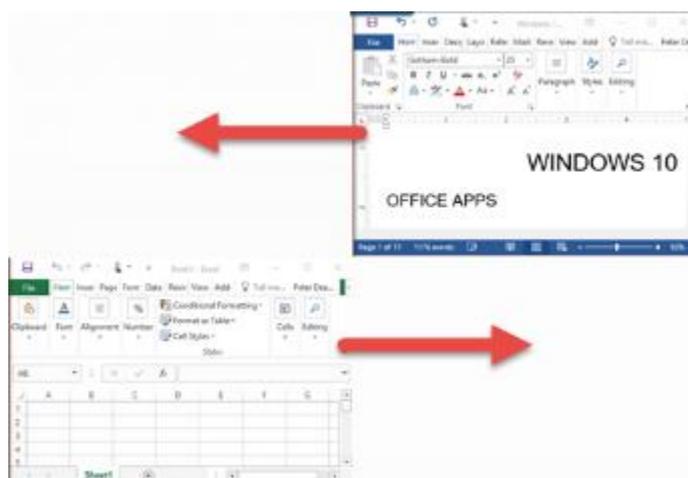


The narrow Word window reduces the ribbon to minimal buttons with little room for the tabs. The document view itself is cramped and the text would be smaller in a full page or page width view.

Excel uses the screen width and you can see more of the document. You can see more of the document by minimizing the ribbon.

Even if the Windows team didn't think of Microsoft Office specifically, horizontal snap options should be included for the sake of other programs or just completeness of functionality. Their omission is a mystery.

Best you can do is snap one or two apps to a corner then drag them across to fill the screen width.



# FAST ACCESS TO PROGRAMS

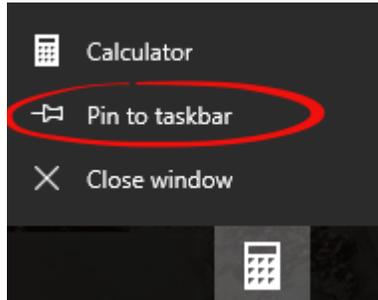
## ... and apps and documents.

If you have a commonly used program, there are many ways to make it quickly available. Which one you choose depends on what works for you. Here's all the options we can think of using the Windows 10 Calculator app for the examples. Of course, you can use any other program or app you like.

## TASKBAR

Any program can have a permanent home on the taskbar. It will appear as an icon if the program is running or not.

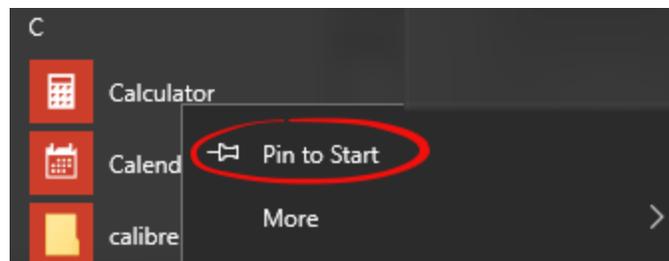
Right-click on the running program and choose 'Pin to taskbar'.



Office users might like to put their most commonly used programs on the taskbar. For use, Outlook and Word are pinned to the taskbar since they are normally open anyway!

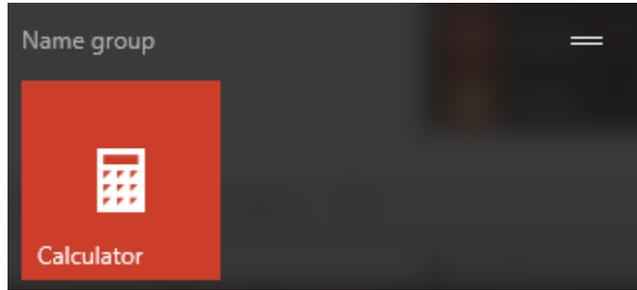
## START MENU

Any program can be added to the Start Menu, find the app/program in the All Programs column, right-click and choose 'Pin to Start'.

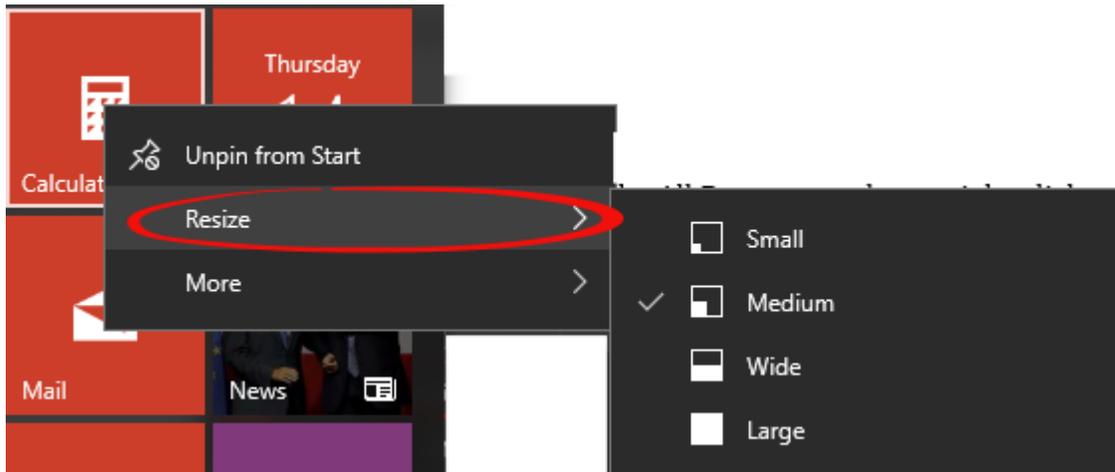


## Windows 10 for Microsoft Office users

This will add the program to the very bottom of the Start Menu. You'll probably have to scroll down to find it. Fast Access to Programs - Create a Shortcut



Drag and drop it to wherever you want it on the Start Menu. Right-click the tile to see what size options are available (they vary depending on the program/app).



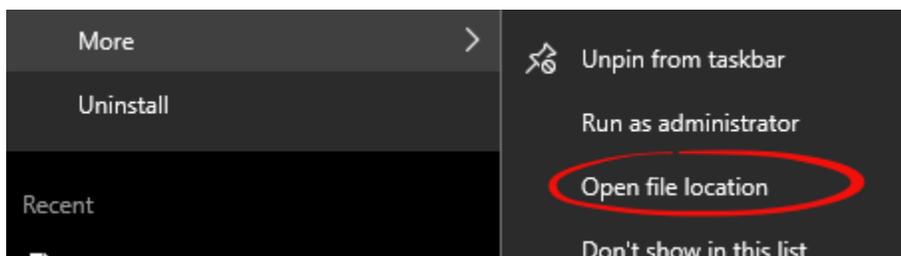
## CREATE A SHORTCUT

For the next few suggestions you'll need a shortcut to the program or app. This is the .lnk file that's been in Windows for many years. However, with Windows 8 and later there's a catch for Modern/Metro Apps.

Before we continue this chapter, here's a little sidebar on how to make a shortcut for both traditional programs and Modern Apps.

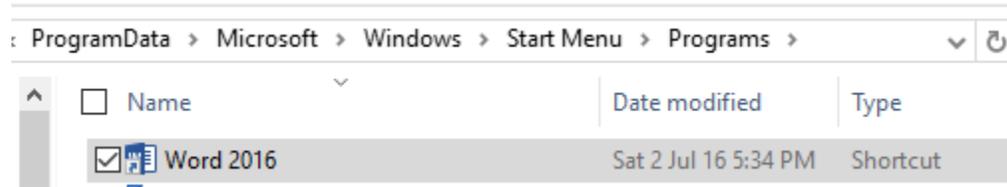
### PROGRAMS

For traditional/desktop programs making a shortcut is still easy. Right-click on the program in the Start Menu, choose More then Open File Location



## Windows 10 for Microsoft Office users

That will open the Start Menu folder which has shortcuts which make up some of the Start Menu items (usually at C:\ProgramData\Microsoft\Windows\Start Menu\Programs )



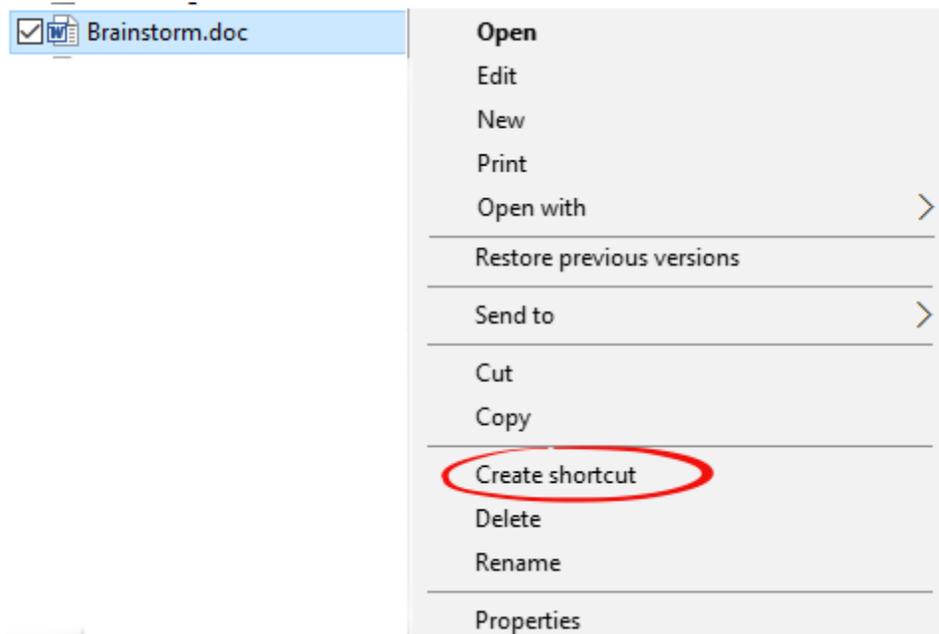
You can copy or change that shortcut by right-clicking and choosing Properties.

What's missing from that \Start Menu\Programs list is any Modern Windows 10 apps, like the Calculator. Which leads us to the next section ...

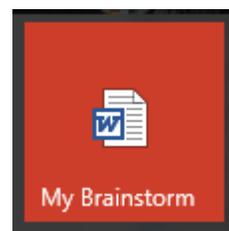
## DOCUMENTS

Just like programs, you can make a shortcut to a document. Clicking on that document shortcut will open the document using the default program for that file type.

To make a document shortcut, find the document, right-click and choose 'Create Shortcut'.



Then move or rename the shortcut, just like any other. For example, putting it on the Programs list or the Start Menu.



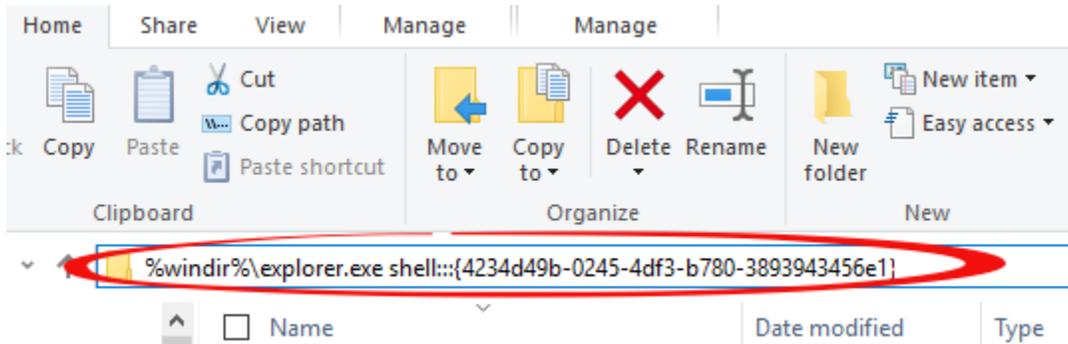
## Windows 10 for Microsoft Office users

### APPS

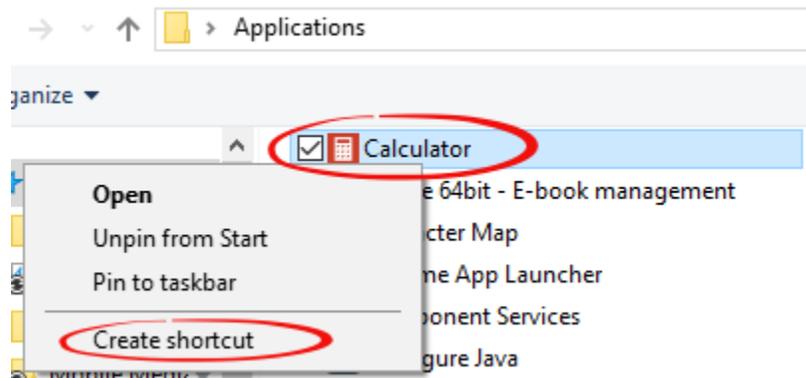
Fast Access to Programs - Desktop

To make a shortcut for a Modern App needs a little trickery. There is a folder list of apps but it's hidden. To see it enter the following into the Explorer address bar:

```
%windir%\explorer.exe shell:::{4234d49b-0245-4df3-b780-3893943456e1}
```



That will open a hidden folder of Modern Apps. Right-click on the app you want and choose 'Create Shortcut'.



Windows will show a message because it can't put a shortcut in that folder and it offers to save it to the desktop instead. Choose Yes then go to the Desktop.



### DESKTOP

Just like any version of Windows in the past, you can add a program shortcut to the desktop.

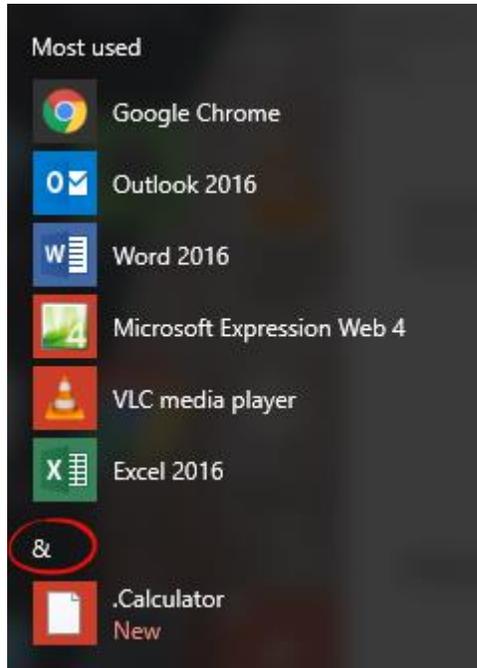
# PROGRAMS LIST

Windows 10 for Microsoft Office users

Fast Access to Programs - Programs list

There's no official way to pin a program/app to the Programs column of the Start Menu but you can do it anyway.

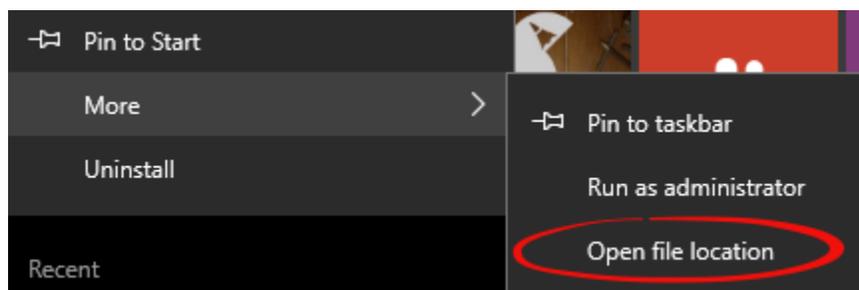
Under the Most Used list is an alphabetical list of installed programs starting with the '&' group for some special characters.



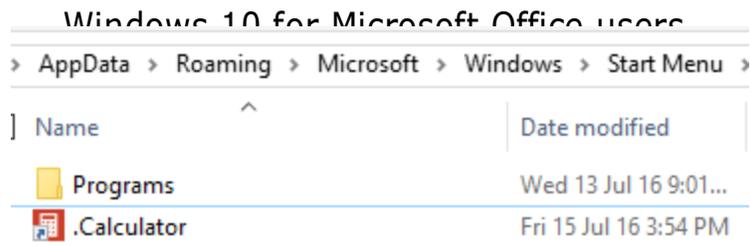
Create a shortcut renamed with a dot/period/fullstop first and it'll appear in the '&' part of the list for easy access.

Make the shortcut, as described [above](#).

Copy it to the /AppData/Roaming/Microsoft/Windows/Start Menu folder. The easy way to do that is right-click on any program (not app) on the Programs list and choose 'Open file location'.



Paste the shortcut into the folder then rename it to add the dot to the start of the name.



You can make your group of 'fixed' programs in this section.

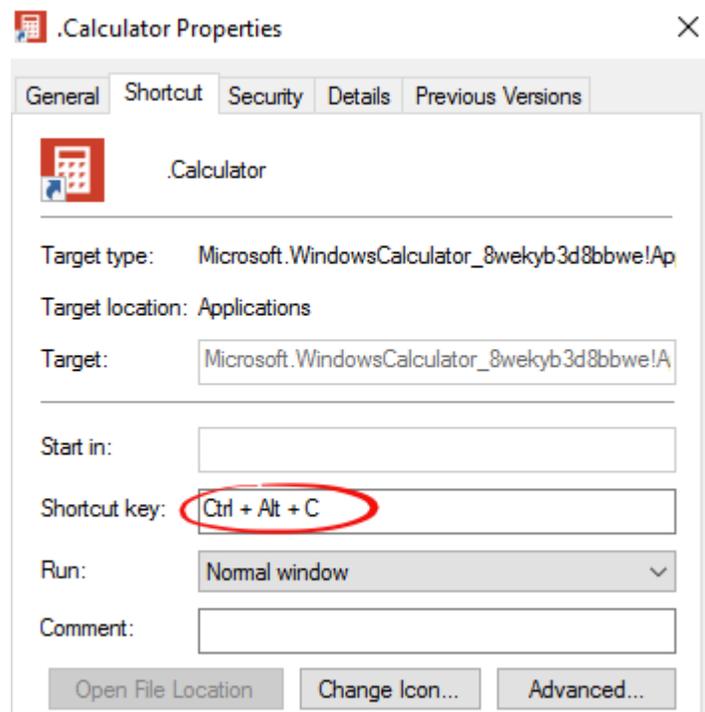
We've tried various characters as the prefix. These put the shortcut into the '&' group (there may be others):

- dot/period/fullstop is the most unobtrusive option
- \_ underscore (but not the - dash)
- `grave accent (ASCII 96)
- ~ Tilde
- &**

## SHORTCUT KEY

The 'Holy Grail', is a keyboard shortcut that will open a program, app or document from anywhere in Windows.

That's easily done from the Properties of any shortcut. Right-click on the shortcut, choose Properties then the Shortcut tab.



You're limited to the Ctrl + Alt combinations. Press the letter, number or other keyboard character to set that keystroke.

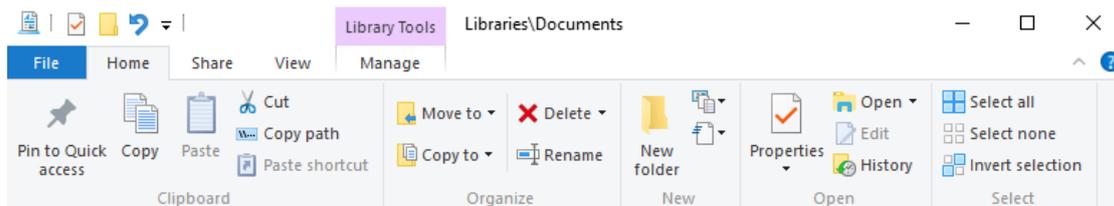
## Windows 10 for Microsoft Office users

Save the changed shortcut then test the key combination.

Fast Access to Programs - Shortcut Key

# EXPLORER

Windows Explorer is the main method we all use to navigate our way around our files and folders. It not only appears on the desktop but also in the common dialogs we use in Microsoft Office; the Open, Save and Save As dialogs are just smaller versions of Explorer.



The Windows Explorer might seem to have changed a lot, with a ribbon instead of menus and toolbars. However much of the change is cosmetic.

As we've shown many times in the Office Watch newsletters, under the ribbon were the same dialog boxes and options that were in earlier versions of Windows. The change wasn't as immense as it first appeared.

It's much the same with the Windows Explorer. The ribbon simply shows existing features in a new way. The shortcuts that you used in earlier Windows still work.

Even better, the Explorer ribbon has a lot of the nifty power that anyone familiar with the Office 2007/2010/2013 ribbons will recognize.

In this chapter we'll show you how to use the Explorer ribbon (tips you can also use in Office) as well as go through all the features on the different tabs. We'll look at all the Explorer features, new and old.

---

*Little has changed in Explorer between Windows 8 and Windows 10. If you're familiar with Explorer in Win 8 then you can skim through this chapter.*

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## SHORTCUT

We'll start with a reminder of the shortcut that will start Explorer from almost anywhere in Windows, even the Windows Start Menu.

### **Win + E**

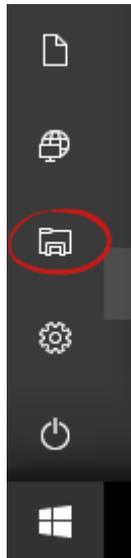
Hold the Windows key down and press the 'e' to see Explorer.

# Windows 10 for Microsoft Office users

Explorer - Navigation pane

## START MENU

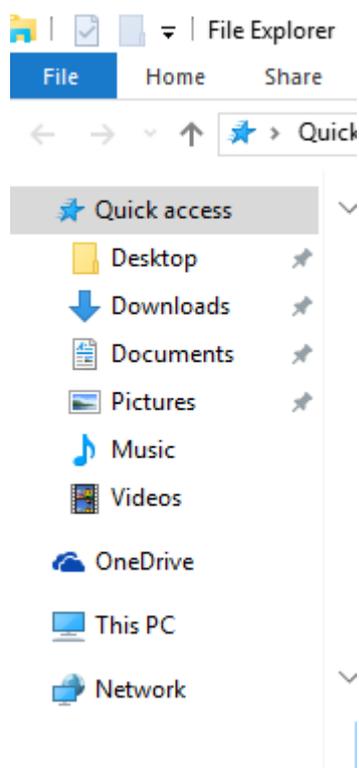
Explorer is also on the Start Menu with under the folder icon.



The icons immediately above File Explorer also open Explorer at specific locations. The 'Globe' icon opens Network view while the 'paper' icon at top opens the Documents folder.

## NAVIGATION PANE

The left hand, Navigation pane, gets a rearrangement that's not all for the better.

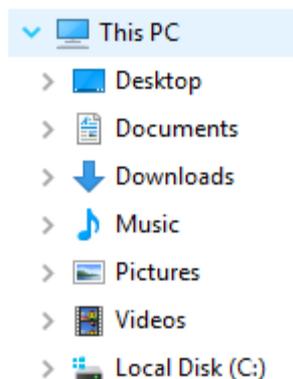


## Windows 10 for Microsoft Office users

### Explorer - Navigation pane

Favorites has gone, replaced with the similar Quick Access list.

Gone is 'My Computer' replaced by the similar 'This PC' which contains Desktop, Downloads and other folder links plus drives.



Also gone are Libraries, a really useful feature of Windows which Microsoft now regrets and wishes we'd all forget about.

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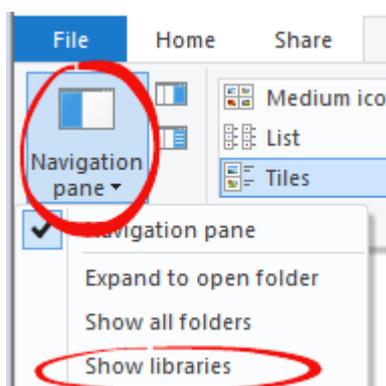
***Why hide Libraries?*** *It's been done because the feature, though good for customers, doesn't suit Microsoft's corporate goal to get customers using their OneDrive cloud storage service. OneDrive is another way for Microsoft to link with customers and make it just that bit harder to move away from Windows/Office.*

*In the years ahead, there's a legitimate concern that Microsoft will drop Libraries entirely with the excuse that people weren't using the feature. Never mind that Libraries were kept out of view by Redmond in the first place.*

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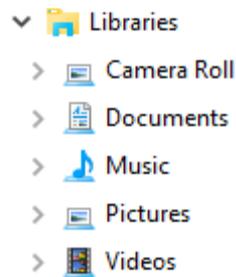
### RESTORING LIBRARIES

Putting Libraries back on the Navigation Pane is easy. Go to the View tab and pull-down the Navigation Pane list on the left side.



# Windows 10 for Microsoft Office users

## Explorer - Ribbon

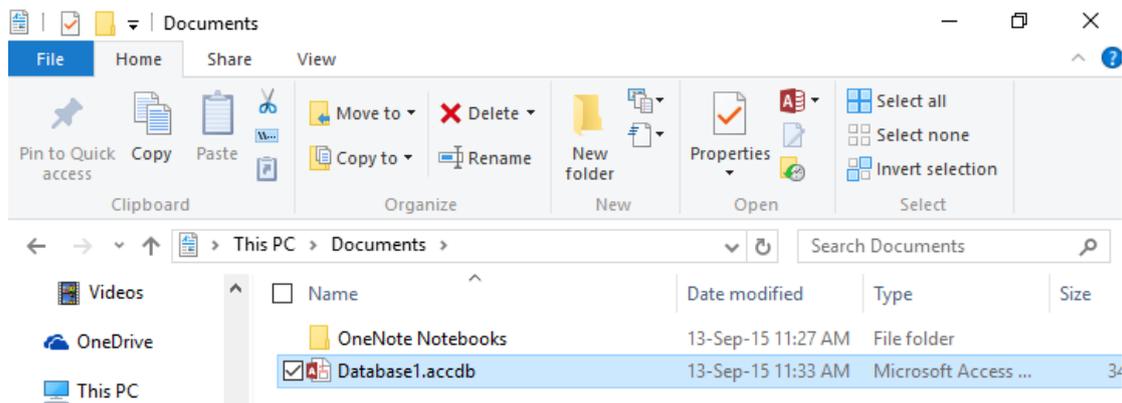


Even after that change, Libraries is relegated down the Navigation Pane below Quick Access, OneDrive and 'This PC'.

## RIBBON

If you're familiar with the Office ribbon you can skip past much of this section because the Windows 8 ribbon has the same features.

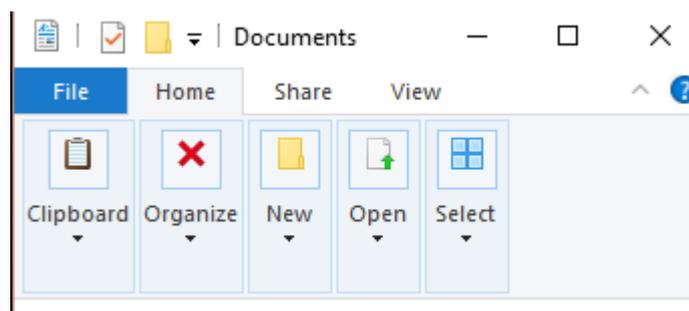
The Explorer ribbon looks like this:



All the familiar Explorer features are there (we'll go into detail later in this chapter) just more obvious than in the past. You'll see there's a 'Picture Tools' tab that has appeared because a picture file has been selected, this is just one of the tabs that will appear depending on the file type.

The ribbon adapts to the available width in a way that old-time toolbars could not. Controls are displayed if there's available space.

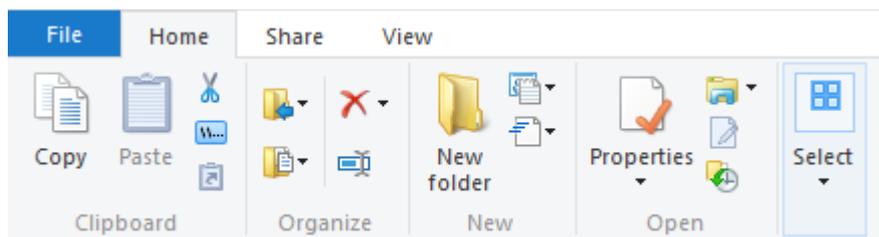
In an extremely narrow Explorer window this is all you'll get with pull-down lists for each section of the ribbon.



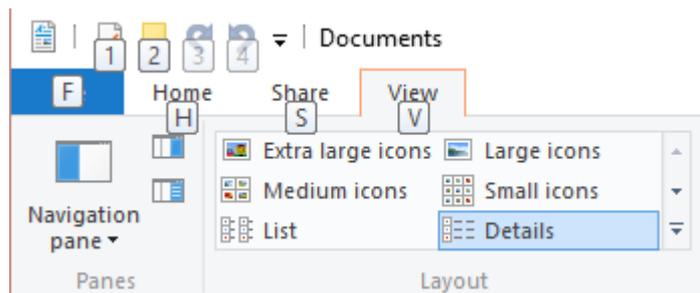
## Windows 10 for Microsoft Office users

### Explorer - Ribbon

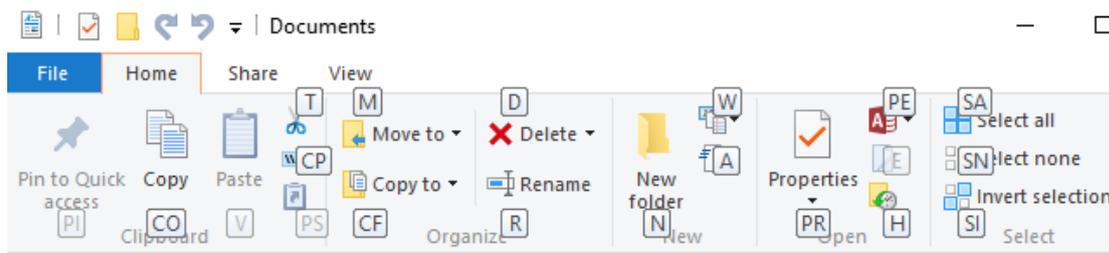
As the window gets wider, more of the ribbon buttons can be displayed.



Tap the Alt key to see the shortcuts available at that level of Explorer.



Then press the 'h' key to jump to the Home tab and see the shortcuts for that ribbon.



Below the ribbon is a useful line of controls:

### BACK & FORWARD

This will take you to the previously viewed windows in this pane. If you think of each pane you view as like a 'web page' then these buttons will take you through recently viewed folders. It's different from moving up and down a folder tree though often it has the same effect.

### UP ARROW

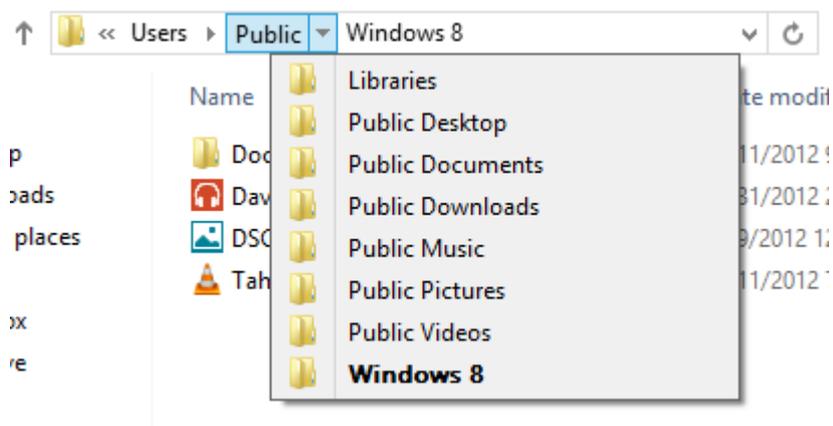
This will take you 'up' one folder level. For example you're at `c:\Users\Public\Windows 8`, press the up arrow and you'll move to `c:\Users\Public`.

## Windows 10 for Microsoft Office users

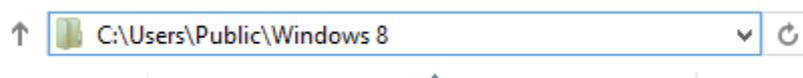
### Explorer - Ribbon

#### ADDRESS BAR

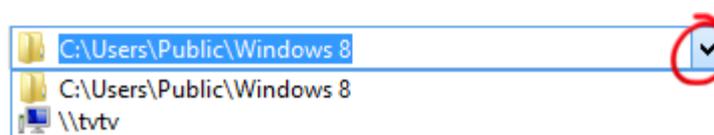
This has changed from the days when it just showed the path of the current folder.



Clicking on the wedge icons will display the folders available at that level with the currently displayed one in bold. Click on a folder from the list will move to that folder. This is great for moving between folders on the same level, which is easier than 'going down a level then up a level'.



Clicking in the address bar changes it to a standard path name that can be edited, copied or pasted over as text.



The down arrow on the right is a pull-down list of recently used paths and machines.

Next to the down arrow is a refresh button to update the file/folder list. This should hardly be necessary these days because Windows should detect changes and update Explorer automatically.

#### SEARCH

On the left is a search field. Type in one or more words to find them in the file names and searchable content of files (including Office documents).

The search will cover files in the current folder and all sub-folders.

#### MINIMIZE

One of the most useful, but least used, ribbon feature is Minimize. From the start, Microsoft knew that some people would want the ribbon to disappear, so they made it both possible and intelligent.

## Windows 10 for Microsoft Office users

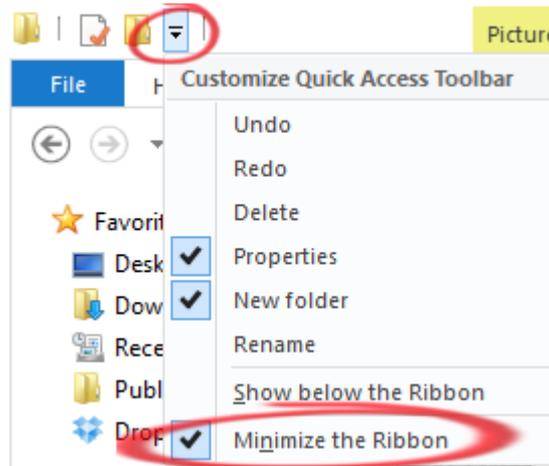
### Explorer - Ribbon

Minimized ribbon shows only the tabs:

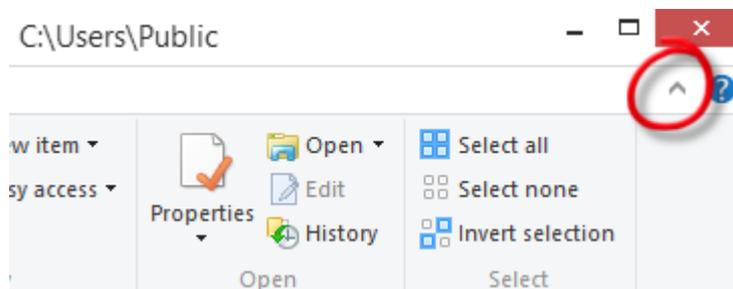


And there's various ways to switch between minimized and normal ribbon.

The Quick Access Toolbar has a menu item:



On the right side of the ribbon there's a little arrow symbol to click:



The keyboard shortcut to toggle the ribbon is Ctrl + F1 (which also works in Office ribbons).

But the most commonly used way to switch between minimized/normal is to double-click on the current tab (or double click twice on another tab works too).

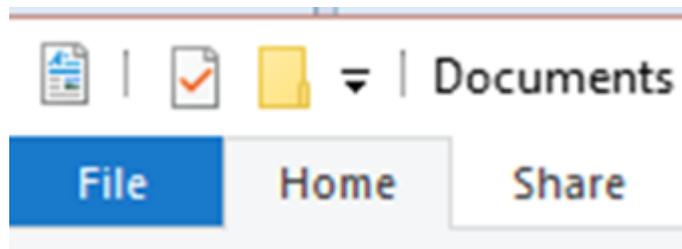
The ribbon isn't totally dumb, it will show up when you need it for a particular task and then return to minimized form. It will stay minimized, except when needed, until you explicitly switch minimization off.

## Windows 10 for Microsoft Office users

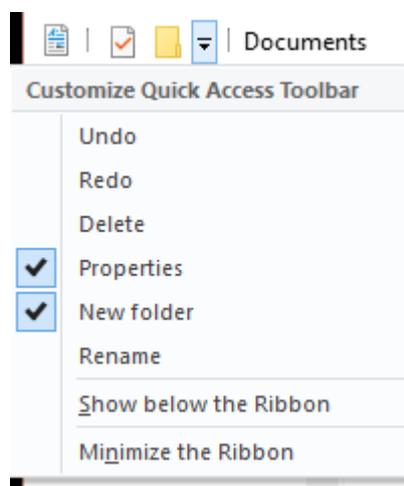
### Explorer - Ribbon

#### QUICK ACCESS TOOLBAR

The Quick Access Toolbar is on the top left and is the only customizable part of the Explorer interface.

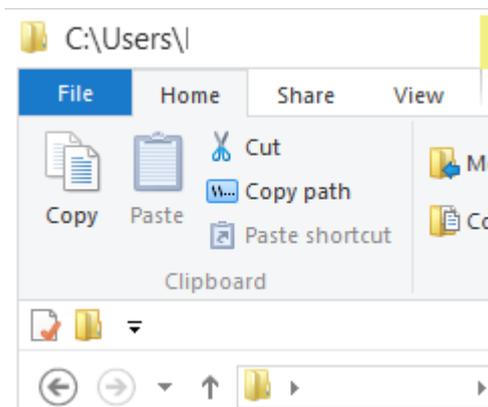


The wedge on the right opens the menu which has some easy to select additions to the Quick Access Toolbar (QAT).



You can toggle some other QAT buttons from the list. Sadly, unlike Office, you can't dig deeper and add your own choice of buttons from a full list of commands.

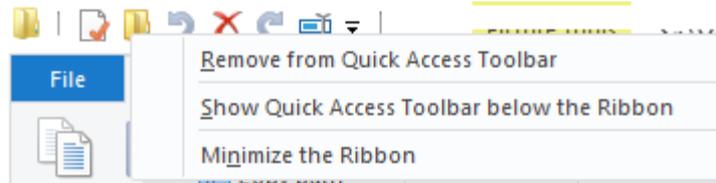
There's an option to show the QAT below the ribbon like this:



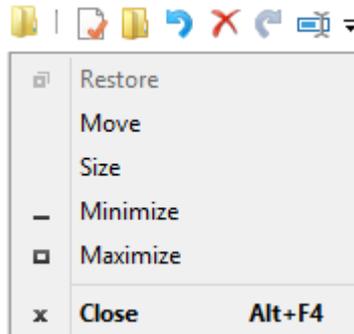
Right-clicking on a QAT button shows a few options, including removing that button from the ribbon.

## Windows 10 for Microsoft Office users

Explorer - Across the ribbon



There doesn't seem to be a way to re-order the QAT buttons from this arrangement of all the available buttons:



Which are, in order,

- Window controls: Move, Size, Minimize, Maximize, Close
- Properties
- New Folder
- Undo
- Delete
- Redo
- Rename

## ACROSS THE RIBBON

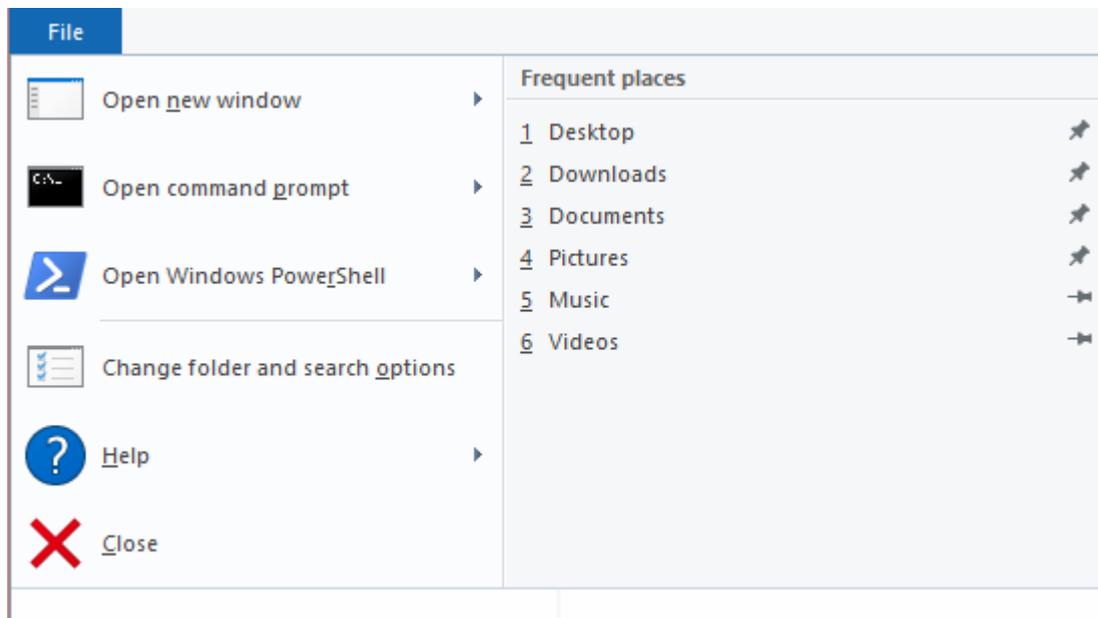
Now let's look at each ribbon tab across the screen.

# Windows 10 for Microsoft Office users

## Explorer - Across the ribbon

### FILE

It's called the File menu because the Office menu is also called 'File' but really the entire Explorer interface is about files so the name is a little misleading.



### FREQUENT PLACES

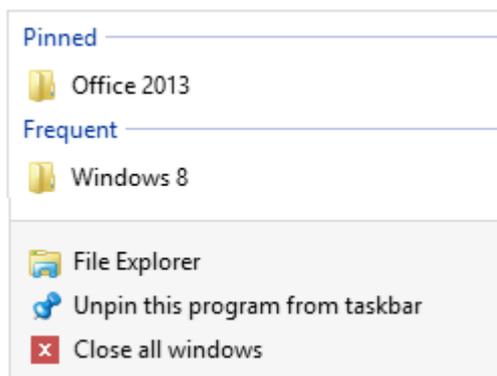
The list of recently used 'places' (ie folders) appears on the right. It changes as you visit new folders.

Pressing a number will switch the current Explorer window to that folder.

The 'push pin' will fix that folder link to the top of the Frequent Places list.

Sadly, this list only has the last folder name which can be confusing if you have two folders with the same name on the list. Hover your mouse pointer over a frequent place to see the full path.

On the taskbar the same Frequent Places list with pinning options appears when you right-click on the Explorer icon.



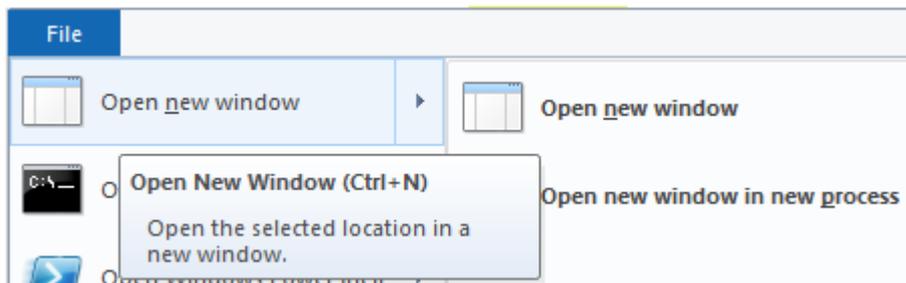
## Windows 10 for Microsoft Office users

### Explorer - Across the ribbon

#### OPEN NEW WINDOW

Possibly the most useful Explorer shortcut is Ctrl + N to open a new window. That's because there's no direct button to do it on the ribbon or QAT.

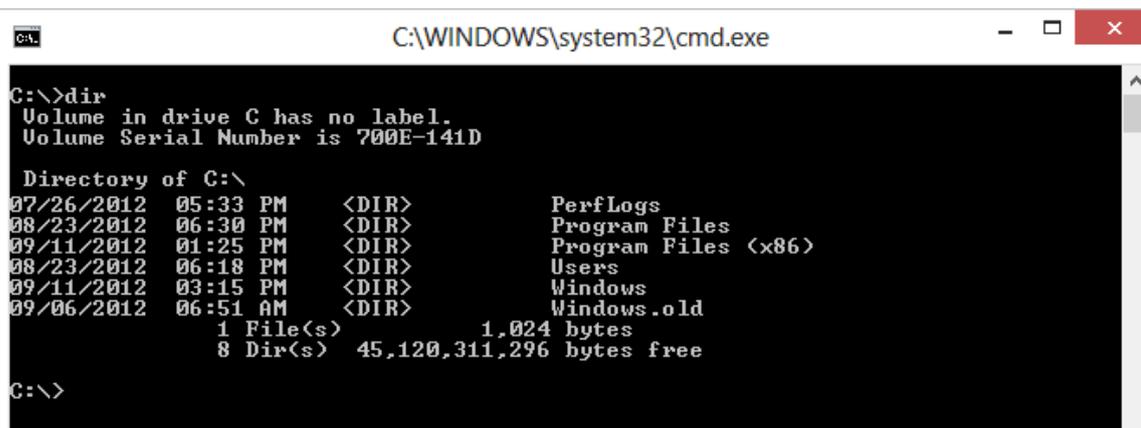
The menu options are buried somewhat on the File menu.



Opening a new window in a new process can help avoid problems if Explorer crashes.

#### OPEN COMMAND PROMPT

The command prompt is what we used to call the 'DOS Box' because it looks like the old DOS text prompt.

A screenshot of a Windows Command Prompt window. The title bar reads 'C:\WINDOWS\system32\cmd.exe'. The command prompt shows the output of the 'dir' command. The output is as follows:

```
C:\>dir
Volume in drive C has no label.
Volume Serial Number is 700E-141D

Directory of C:\
07/26/2012  05:33 PM    <DIR>          PerfLogs
08/23/2012  06:30 PM    <DIR>          Program Files
09/11/2012  01:25 PM    <DIR>          Program Files (x86)
08/23/2012  06:18 PM    <DIR>          Users
09/11/2012  03:15 PM    <DIR>          Windows
09/06/2012  06:51 AM    <DIR>          Windows.old
               1 File(s)            1,024 bytes
               8 Dir(s)  45,120,311,296 bytes free

C:\>
```

The nice thing about having this on the File menu is the ability to select a folder in Explorer then open to that folder in the Command Window. Navigating around long folder names with the command window is a pain.

Many people can use Windows for years without need for the Command Prompt but it's sometimes required for esoteric options in BitLocker and the like.

#### ... AS ADMINISTRATOR

This is the same Command Prompt window but with elevated Administrator privileges (assuming your login has Administrator access).

Admin level access is different from what you might be used to. Once upon a time a login account had Administrator access and all actions were done with that high level access.

## Windows 10 for Microsoft Office users

### Explorer - Across the ribbon

For recent versions of Windows that changed. An administrator level login doesn't immediately have high level access. Instead most actions are done with standard user access. Only when administrator powers are required are you asked to confirm admin level use – hence the prompts you sometimes see when installations are in progress. For the Command Prompt you have to explicitly open the window with the elevated access level in order to do administrator actions in the window. Again, this is something you might need when configuring BitLocker.

---

*A faster way to open a Command Prompt (with or without admin access) is from the Administration Menu. Right-click on the Start Menu.*

---

### OPEN WINDOWS POWERSHELL

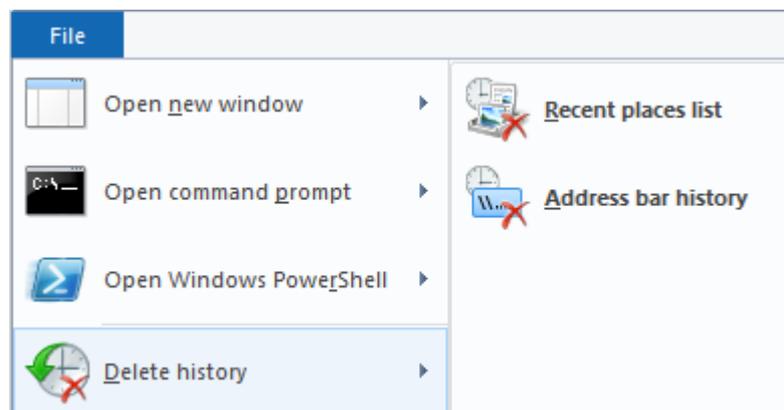
PowerShell is Microsoft's command line control and configuration system. Like the Command Prompt, it's rarely needed by regular users.

... AS ADMINISTRATOR

Like Command Prompt, PowerShell can be run with regular permissions or Administrator permissions (if your account is allowed them).

### DELETE HISTORY

At last, there's an easy way to remove your Explorer history!



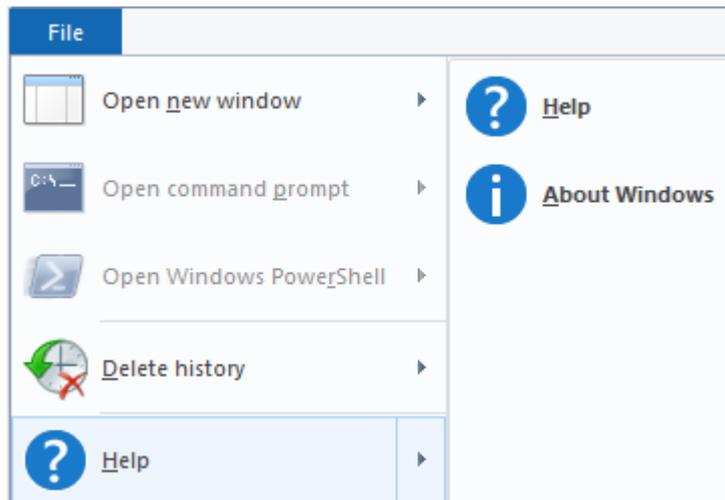
Use these menu items to erase the Recent Places list or the Address Bar pull-down list.

### HELP

This links to the Windows online help and the 'About Windows' dialog.

## Windows 10 for Microsoft Office users

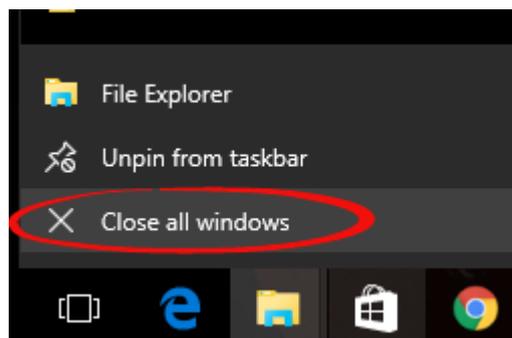
### Explorer - Across the ribbon



### CLOSE

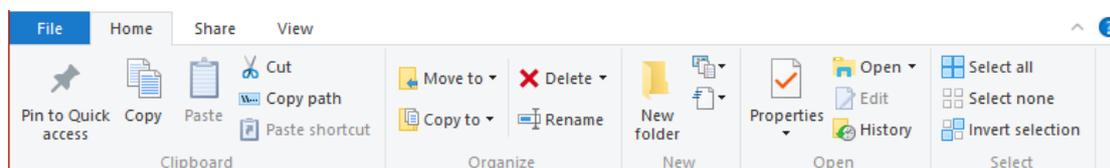
This will close the current Explorer window only.

If you want to close all Explorer windows, right-click on the Explorer taskbar option and choose Close all windows.



### HOME

The full Home tab looks like this:



Most of these are quite obvious and we won't go into details. However, there are a few which are worth a closer look.

### COPY PATH

This will copy the full path of the currently selected file to the clipboard.

The full path and file name is copied to the clipboard – not just the path eg:

"C:\Pictures\Tuscany April 2015\Procession.mp4"

## Windows 10 for Microsoft Office users

### Explorer - Across the ribbon

If you select multiple files, the full path and file name for each file is put in the clipboard. For example these three files:

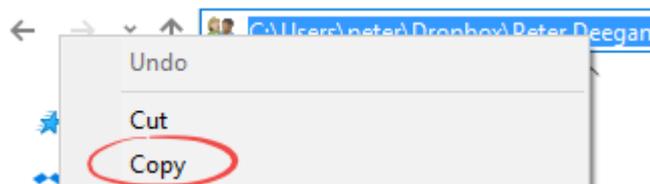
"C:\Pictures\Tuscany April 2015\1.jpg"

"C:\Pictures\Tuscany April 2015\2.jpg"

"C:\Pictures\Tuscany April 2015\3.jpg"

Paste the file list into a text editor or Word.

To get just the folder path select the text in the address bar and copy it.

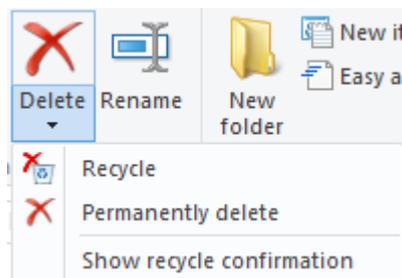


### MOVE TO AND COPY TO

Both of these have pull-down lists of recently used folders.

### DELETE

The pull-down list shows the options to 'delete' to the Recycle Bin or 'Permanently' delete with no recycle bin.



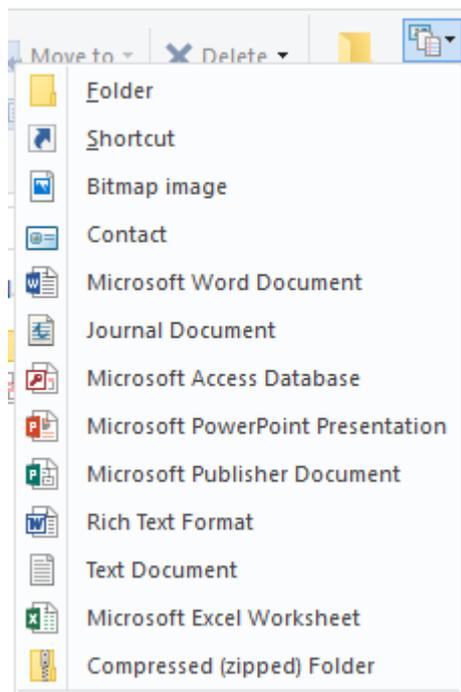
The 'Show recycle confirmation' is a toggle. Windows lets you delete files without a prompt if the file is going to the Recycle Bin (ie you have a chance to undo the delete). This is a very welcome option, for years it's been annoying to have a warning about every delete even when there's a recovery option via the Recycle Bin. But you can restore the warning by toggling this option on.

### NEW ITEM

This list shows the options for making a new file that is also on the right-click menu 'New'.

## Windows 10 for Microsoft Office users

Explorer - Across the ribbon

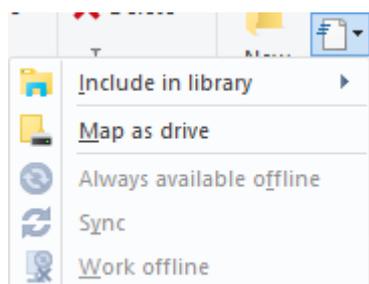


The new items list depends on what programs are installed and the options they setup.

Most regular Office users don't use these options because you get no control over the new document configuration. For example, you get no choice of template. It's usually better to open the application and create the new file from there.

### EASY ACCESS

The Easy Access menu was new for Windows 8 but has been reduced a little in Windows 10.



You get options for the current selected folder:

**Include in Library** – the fly out list of libraries lets you select one.

**Map as drive** – will open the standard dialog for mapping a network share to a drive letter.

The last three options, 'Always available offline' 'Sync' and 'Work offline' apply if you're computer folders are synchronized with a Microsoft Server in an organization.

## Windows 10 for Microsoft Office users

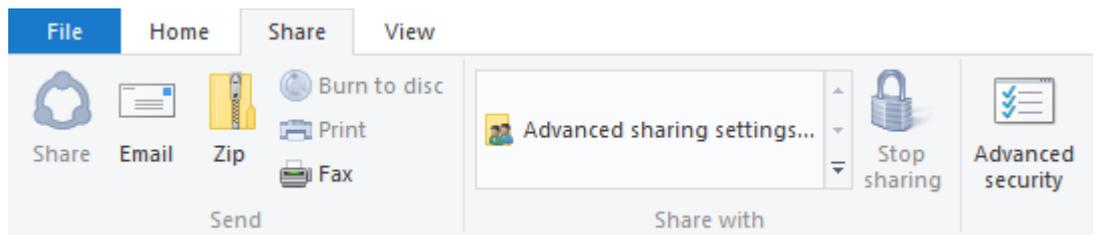
Explorer - Across the ribbon

### HISTORY

If you have the File History feature running with the backup drive available, clicking this button will show the past versions of the selected file.

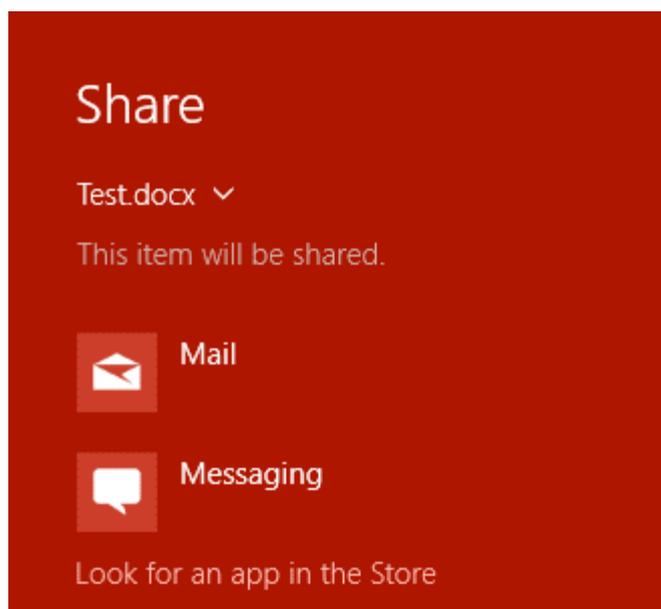
### SHARE

The share tab has options for sending, compressing and sharing the selected files or folders.



### SHARE

This is new in Windows 10. It opens the Share pane to show any enabled apps.



### EMAIL

The selected file/files will be attached to a new email created in the default email program (for readers of this ebook, probably Outlook).

The same as right-click menu | Send To | Mail Recipient.

### ZIP

Let's you make a compressed ZIP file from the files or folders selected.

## Windows 10 for Microsoft Office users

Explorer - Across the ribbon

You'll be given the choice of the Windows in-built ZIP support, third-party utilities (if any) or going to the Windows Store to find a suitable app.

How do you want to create a compressed folder (Zip) with selected files?



Windows Explorer



Look for an app in the Store

### BURN TO DISC

If you have an optical disk drive with write features, you can burn the selected items directly to a disk.

While Windows does have some CD/DVD burning features they are limited and slow. Most optical drives come with software that may offer more features and fast burn speeds.

### PRINT

This button only prints files using the default application for that file type and usually only with the default settings. For that reason, this option is rarely used. Most people prefer to open the file, choose Print and ensure that the settings are 'fit for purpose'.

### FAX

You can fax from Windows if you have a fax modem on your machine or via the network.

← Fax Setup

#### Choose a fax modem or server

To send and receive faxes, you need to connect to a fax modem or server.



Connect to a fax modem

I have a modem that is built in or connected to my computer.



Connect to a fax server on my network

Make sure you know the server name, for example: \\mycompanyfax

## Windows 10 for Microsoft Office users

Explorer - Across the ribbon

Just like the Print option, you may get little control over the output when using this button. Opening the document and choosing the Fax option from there (probably via the Print menu) will give you more control.

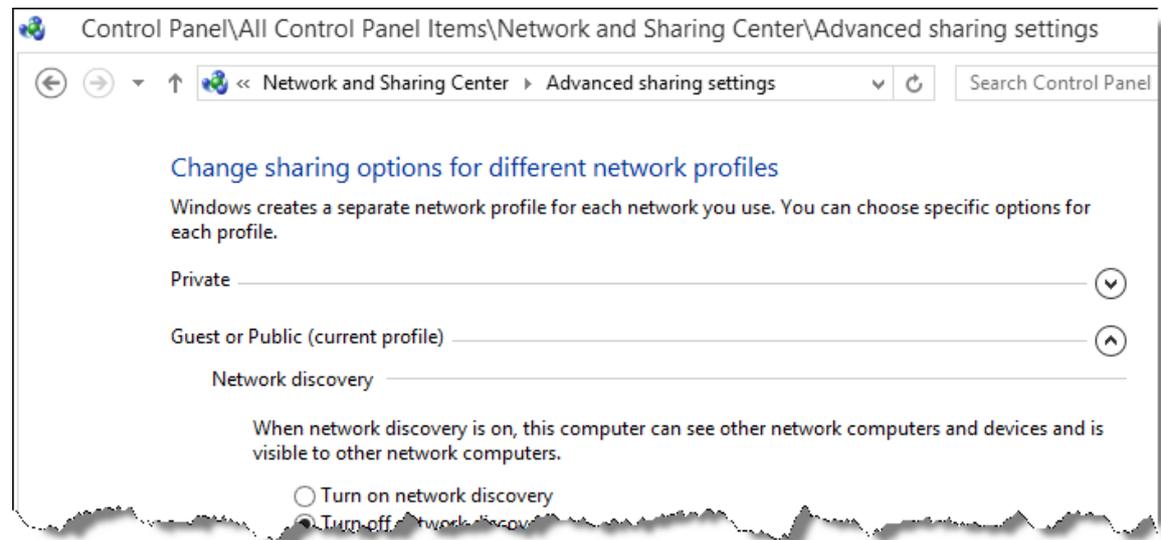
It seems few people have fax connections these days and use email instead.

One alternative is a 'fax to email' service which gives you incoming and outgoing fax via the Internet and email. For incoming faxes you get a fax number (choose your location), faxes to that number are converted into email attachments (usually PDF) that are sent to you. Outgoing faxes can be sent via email, email attachments or a web interface.

SHARE WITH

ADVANCED SHARING SETTINGS

This link opens the Network and Sharing Center | Advanced sharing settings link



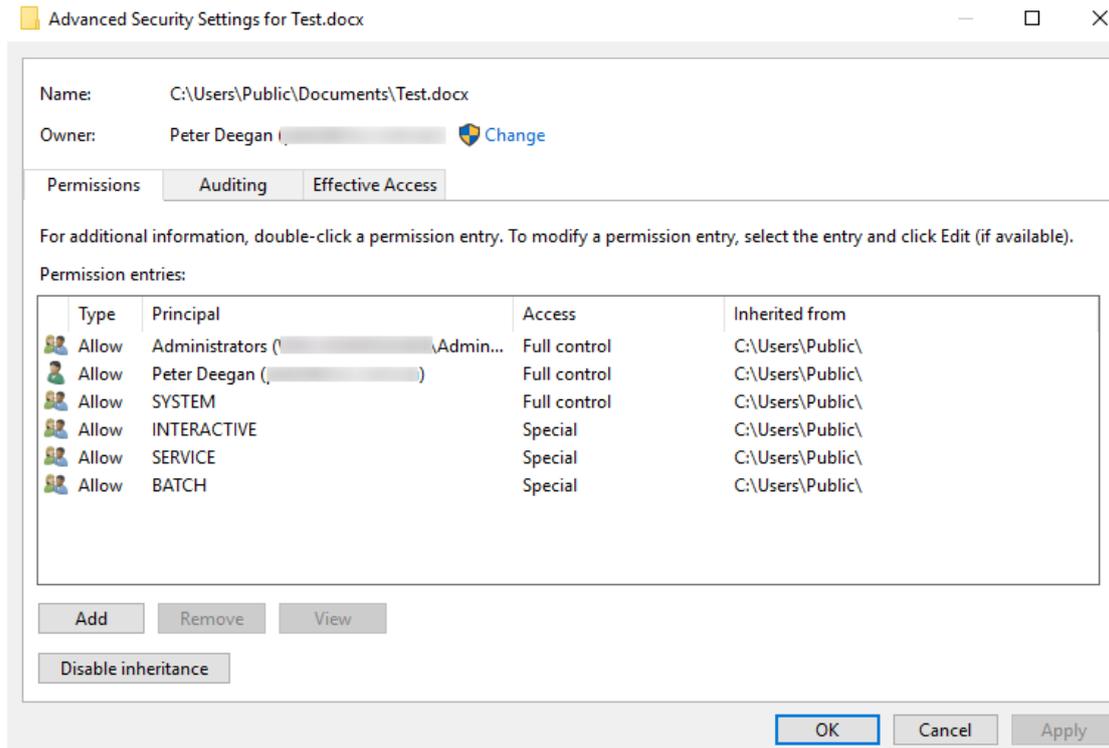
STOP SHARING

ADVANCED SECURITY

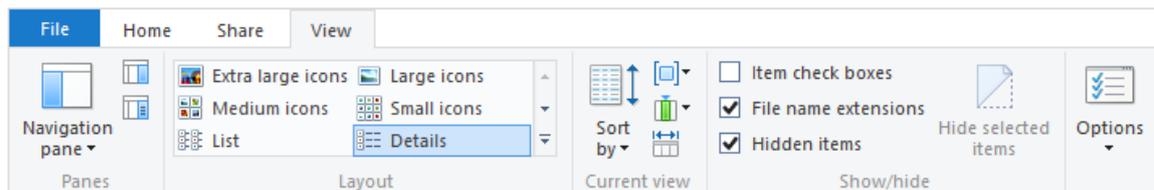
The advanced security options are rarely needed but if you're trying to find out why a file is or is not being shared then have a look.

# Windows 10 for Microsoft Office users

## Explorer - Across the ribbon

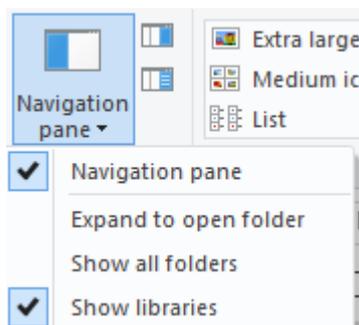


## VIEW



## PANES

### NAVIGATION PANE



**Navigation pane** – turns the left hand navigation pane (with the list of drives and folders) on or off.

**Expand to open folder** – will open the folder 'tree' down to the selected folder.

**Show all folders** – opens all top levels (e.g. Libraries, Computer etc.) to show what's at the next level.

## Windows 10 for Microsoft Office users

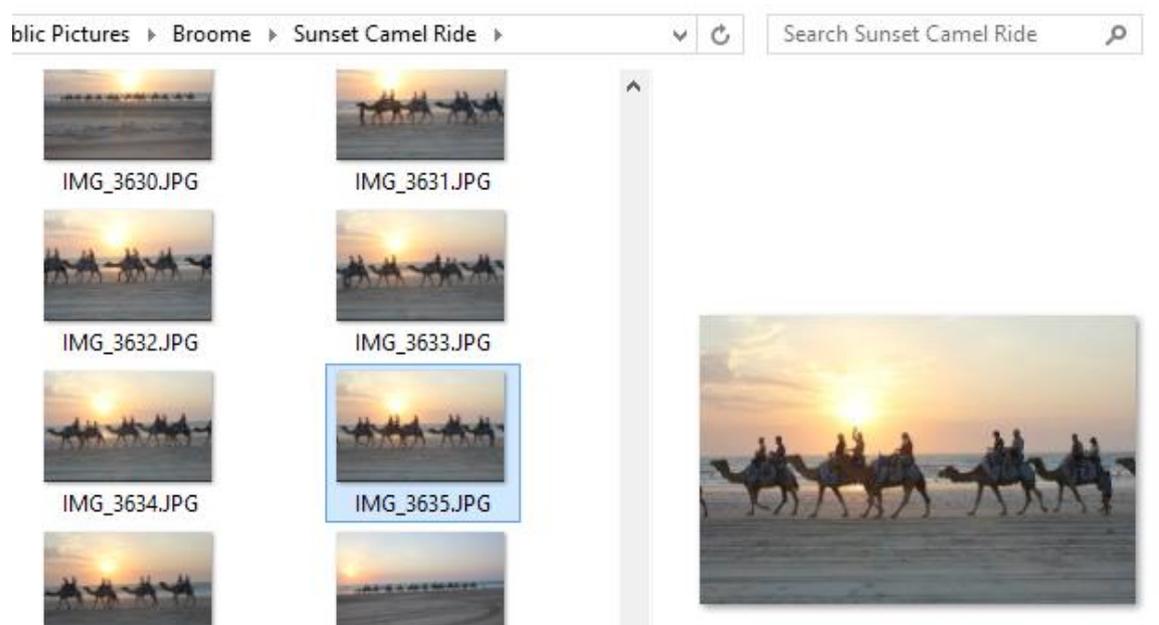
Explorer - Across the ribbon

**Show libraries** – toggles the display of libraries in the navigation pane.

PREVIEW

**Shortcut:** Alt + P

Next to the Navigation pane pull-down is a button to toggle the Preview pane on the right side of the folder list.



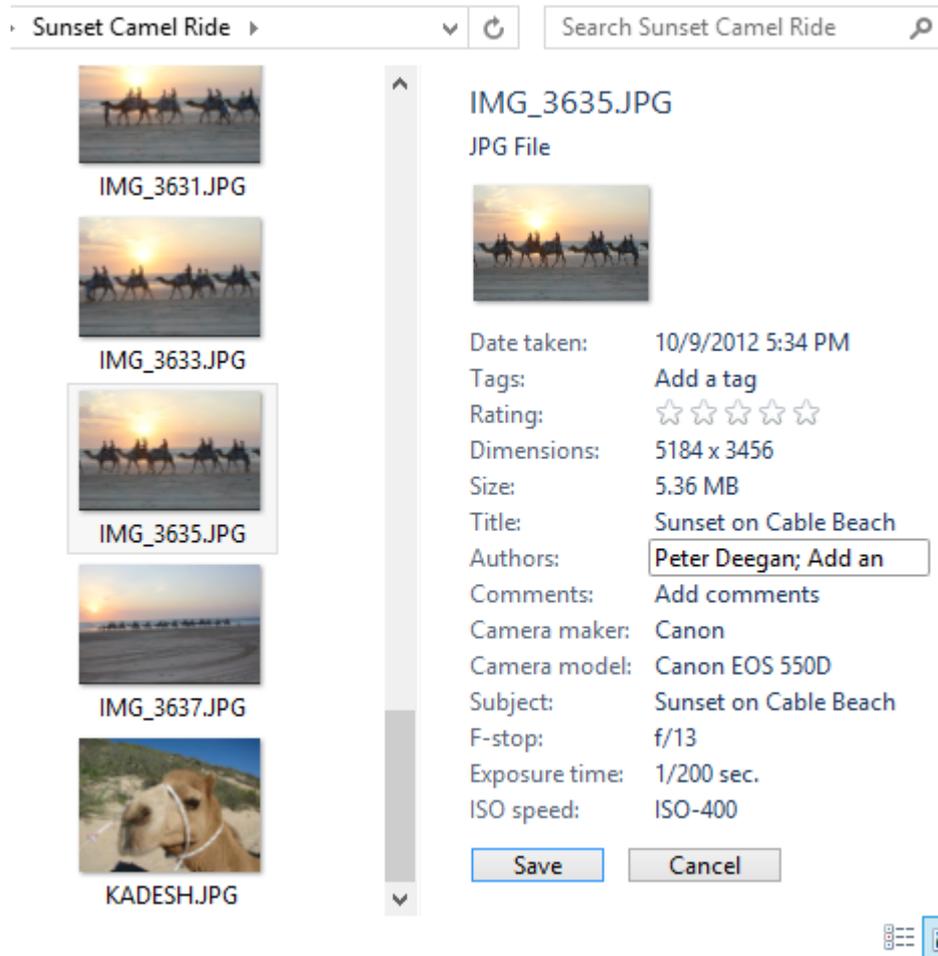
DETAILS

**Shortcut:** Alt + Shift + P

An alternative to Preview is the Details pane selected from the button below Preview.

## Windows 10 for Microsoft Office users

Explorer - Across the ribbon

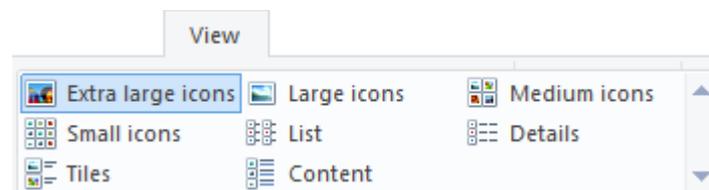


Some of the file attributes can be edited from the details pane, the exact attributes depend on the file type.

### LAYOUT

Probably the most used part of the View ribbon is changing the layout.

There are eight different views available.



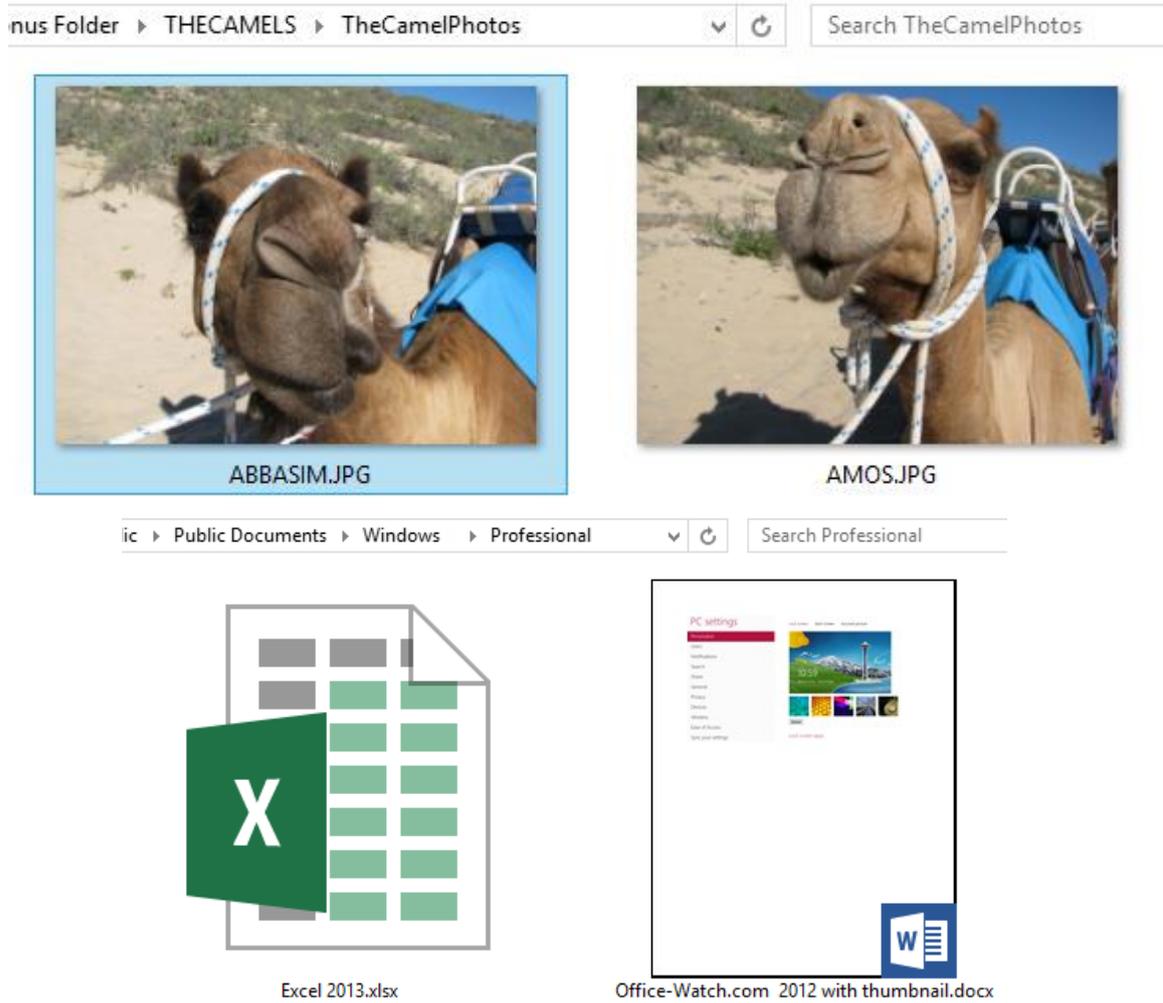
Here are examples of each view. The 'icons' views are best for photos. We'll show Office documents in other views, with or without thumbnails plus the shortcut keys available. All these examples use the same window width.

# Windows 10 for Microsoft Office users

## Explorer - Across the ribbon

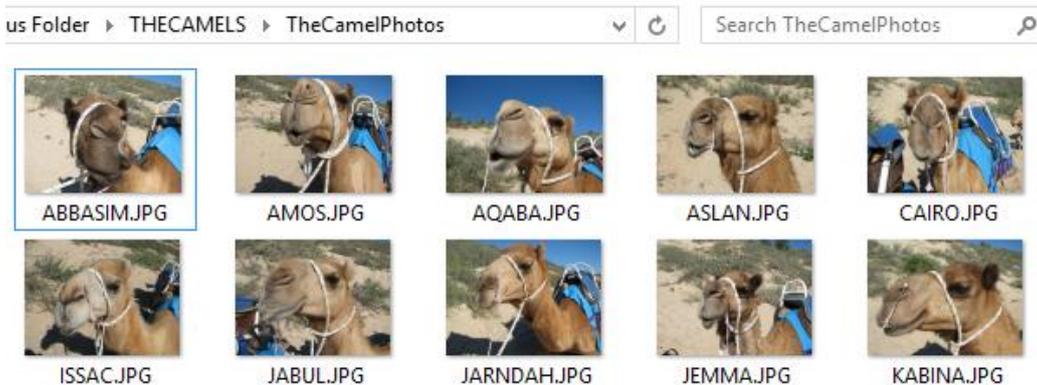
EXTRA LARGE ICONS

**Shortcut:** Ctrl + Alt + 1



LARGE ICONS

**Shortcut:** Ctrl + Alt + 2

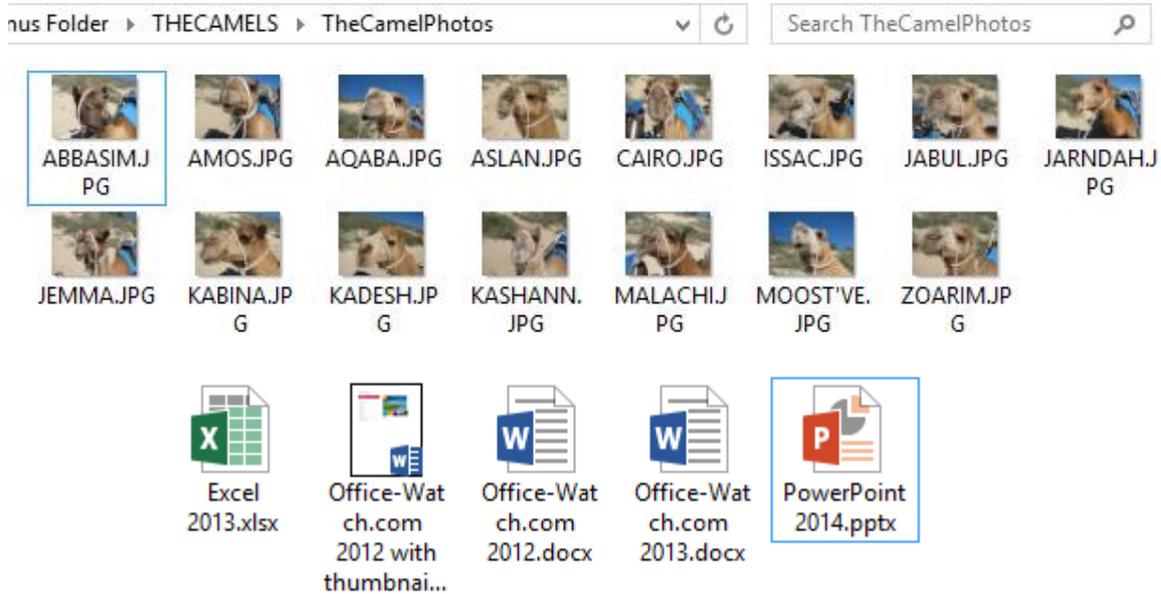


# Windows 10 for Microsoft Office users

Explorer - Across the ribbon

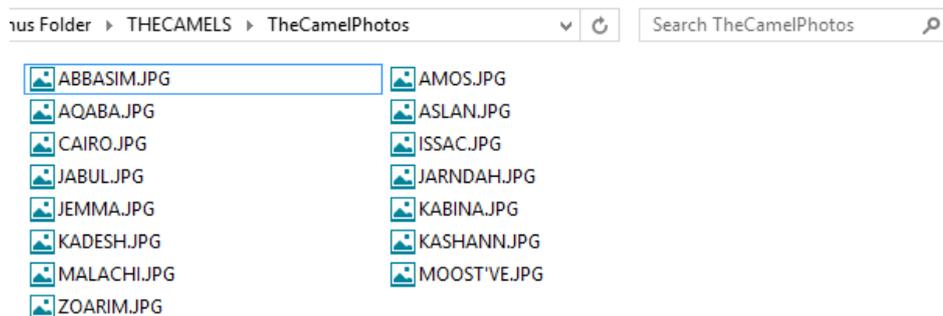
MEDIUM ICONS

**Shortcut:** Ctrl + Alt + 3



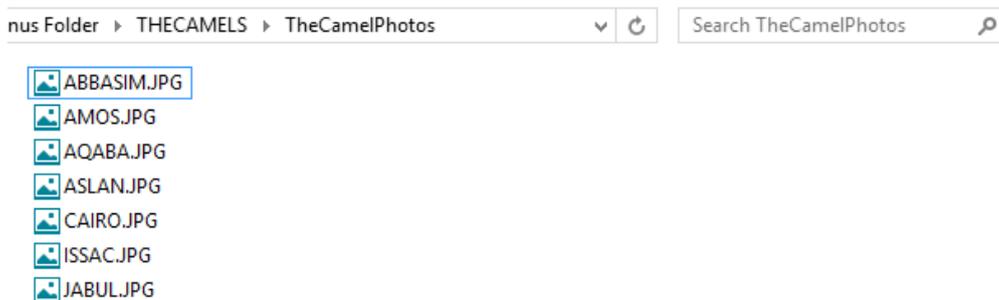
SMALL ICONS

**Shortcut:** Ctrl + Alt + 4



LIST

**Shortcut:** Ctrl + Alt + 5



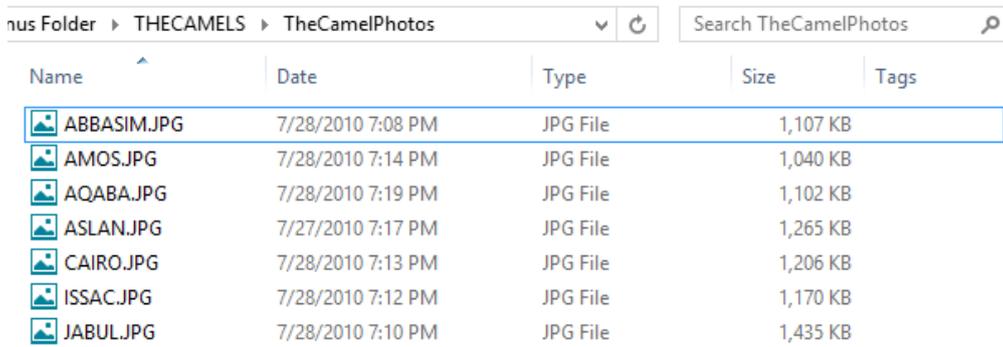
DETAILS

**Shortcut:** Ctrl + Alt + 6

## Windows 10 for Microsoft Office users

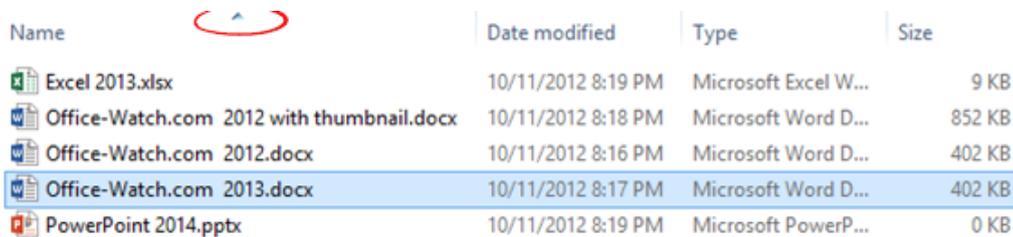
### Explorer - Across the ribbon

Details view is probably the most commonly used view. It is compact, shows important details like date and is easily sortable by clicking the column headers.



Name	Date	Type	Size	Tags
ABBASIM.JPG	7/28/2010 7:08 PM	JPG File	1,107 KB	
AMOS.JPG	7/28/2010 7:14 PM	JPG File	1,040 KB	
AQABA.JPG	7/28/2010 7:19 PM	JPG File	1,102 KB	
ASLAN.JPG	7/27/2010 7:17 PM	JPG File	1,265 KB	
CAIRO.JPG	7/28/2010 7:13 PM	JPG File	1,206 KB	
ISSAC.JPG	7/28/2010 7:12 PM	JPG File	1,170 KB	
JABUL.JPG	7/28/2010 7:10 PM	JPG File	1,435 KB	

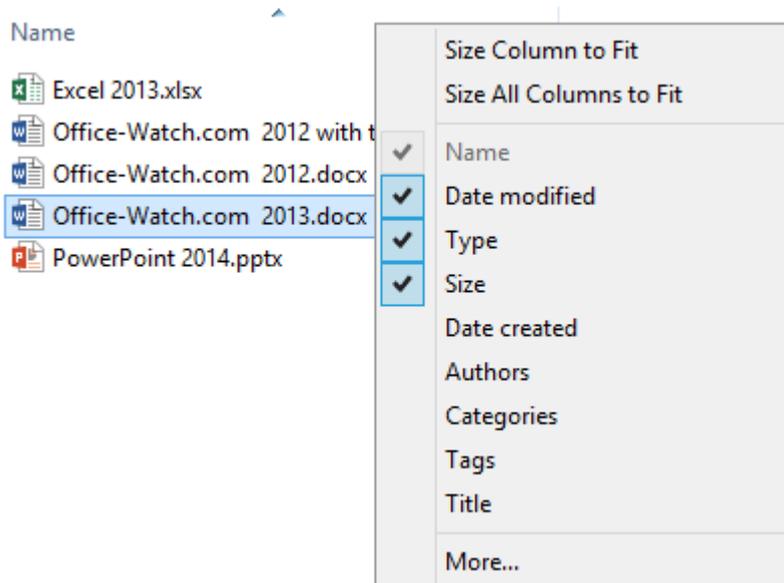
The little wedge (up or down) in the column that is being sorted, in this case, Name.



Name	Date modified	Type	Size
Excel 2013.xlsx	10/11/2012 8:19 PM	Microsoft Excel W...	9 KB
Office-Watch.com 2012 with thumbnail.docx	10/11/2012 8:18 PM	Microsoft Word D...	852 KB
Office-Watch.com 2012.docx	10/11/2012 8:16 PM	Microsoft Word D...	402 KB
Office-Watch.com 2013.docx	10/11/2012 8:17 PM	Microsoft Word D...	402 KB
PowerPoint 2014.pptx	10/11/2012 8:19 PM	Microsoft PowerP...	0 KB

Sorting by date is very useful to find the most recently accessed files.

For more options, right-click on a column header. You can resize columns from here and choose the columns to display.

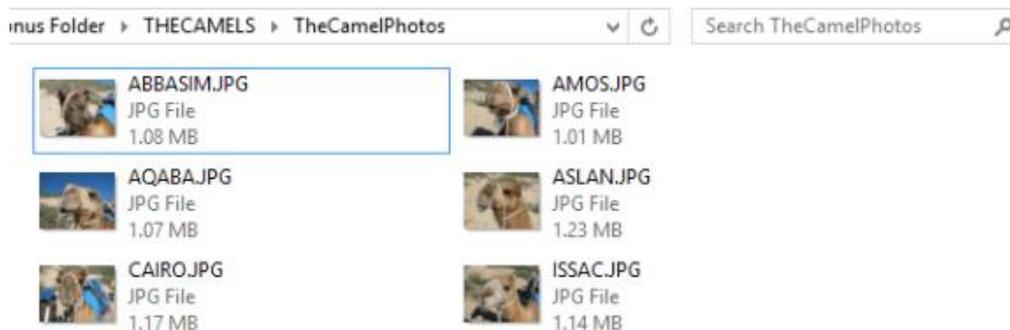


# Windows 10 for Microsoft Office users

## Explorer - Across the ribbon

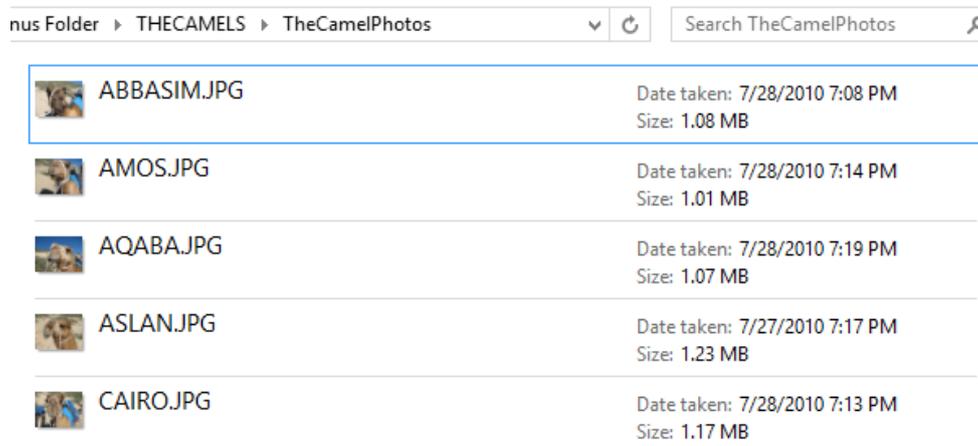
### TILES

**Shortcut:** Ctrl + Alt + 7



### CONTENT

**Shortcut:** Ctrl + Alt + 8



### SHORTCUTS

On bottom right of Explorer windows (not file dialogs) are two buttons to jump to Details and Large Icon views respectively.



There are also the shortcut keys mentioned above. Ctrl + Alt then a number key from the top row in the order of the views above. Ctrl + Alt + 6 jumps to Details view.

Holding down the Ctrl button then turning the scroll wheel on a mouse will cycle through the View options from Extra Large Icons down to Details, Tiles and finally List.

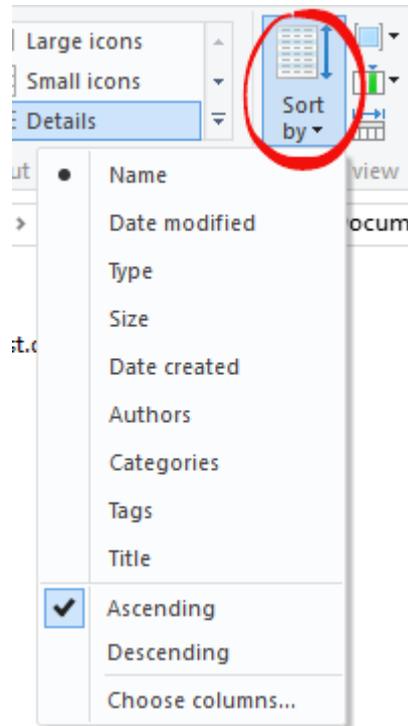
## Windows 10 for Microsoft Office users

Explorer - Across the ribbon

CURRENT VIEW

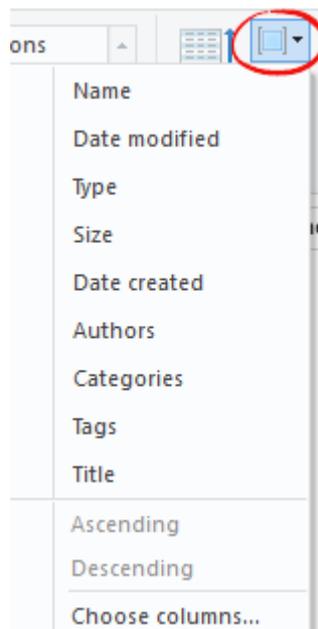
SORT BY

This is the way to re-sort the file list in any view, not just Details view.



GROUP BY

For long lists of files, you might find grouping them is more useful.



You can combine both grouping and sorting.

When grouping by type, keep in mind that Explorer is quite literal with each file extension creating a new group. In this example, the Word

# Windows 10 for Microsoft Office users

Explorer - Across the ribbon

documents are spread across three groups because of the extensions, .doc, .docx and .docm

- Microsoft Excel Worksheet (1)
  - Excel 2013.xlsx
- Microsoft PowerPoint Presentation (1)
  - PowerPoint 2014.pptx
- Microsoft Word 97 - 2003 Document (1)
  - Office-Watch.com 2012.doc
- Microsoft Word Document (3)
  - Office-Watch.com 2012 with thumb... Office-Watch.com 2012.docx
  - Office-Watch.com 2013.docx
- Microsoft Word Macro-Enabled Document (1)
  - Office-Watch.com 2012.docm

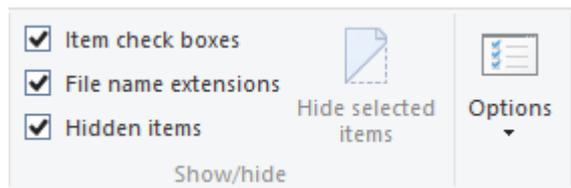
ADD COLUMNS

SIZE ALL COLUMNS TO FIT

Both these options are only available in Details view and are the same as the right-click options mentioned [above](#).

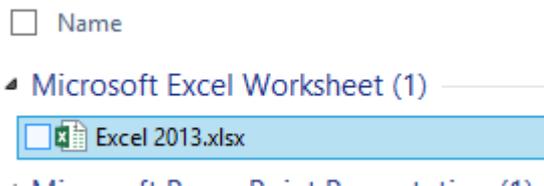
SHOW / HIDE

All these options are the same as the ones in Options | Change folder and search options.



ITEM CHECK BOXES

It can be easier to select files using checkboxes before move/copy/delete options. The checkboxes appear next to each file as you hover your mouse. Or check the box at the top of the column to select/deselect all files.



# Windows 10 for Microsoft Office users

## Explorer - Across the ribbon

### FILE NAME EXTENSIONS

Microsoft's default is to hide file extensions because they think it's simpler for users. We think it adds to confusion when you don't know exactly what type of file you're dealing with and so we recommend UNchecking this option.

### HIDDEN ITEMS

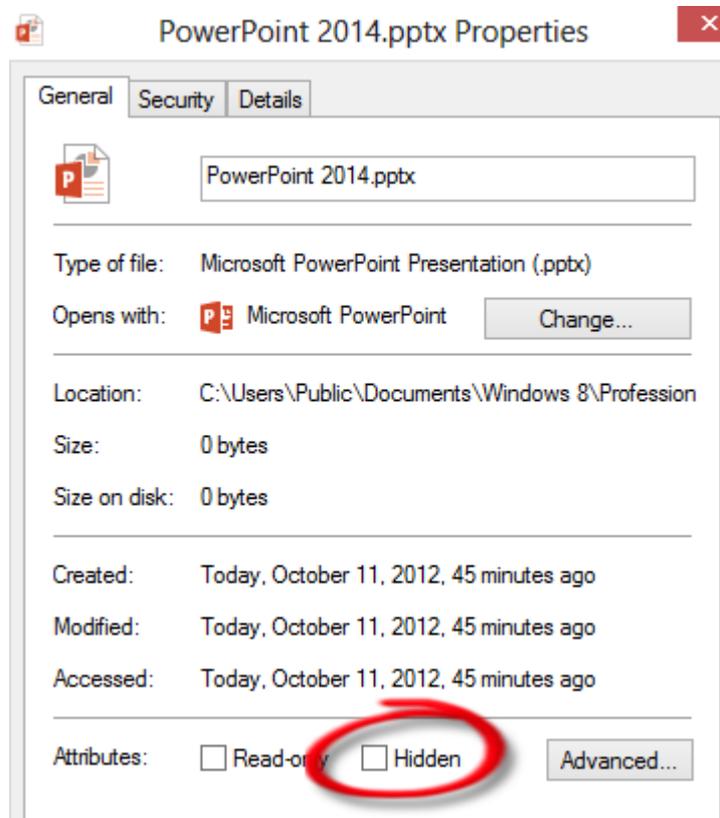
Some files are hidden from regular view, usually for good reasons. UNcheck this option to reveal files, if necessary.

- Microsoft Excel Worksheet (1) —  
 Excel 2013.xlsx
- Microsoft PowerPoint Presentation (1) —  
 PowerPoint 2014.pptx

When revealed, hidden files have greyed icons as in the above PowerPoint file.

### HIDE SELECTED ITEMS

This will mark the selected files as 'hidden' which is a Windows file attribute that has existed for a long time but previously only accessible from the Properties dialog.

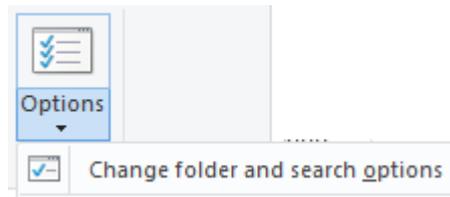


# Windows 10 for Microsoft Office users

## Explorer - Office Dialogs

### OPTIONS

For a short look at some of these options see [Configuration chapter](#).



### OFFICE DIALOGS

The little known fact about the file dialog boxes in Office (or any Windows program) is that they have many of the attributes of a standard Explorer window.

Sure there's no ribbon or toolbar to guide you, but the shortcuts work.

While there are changes in these common dialogs to suit their purpose, most of the features are consistent.

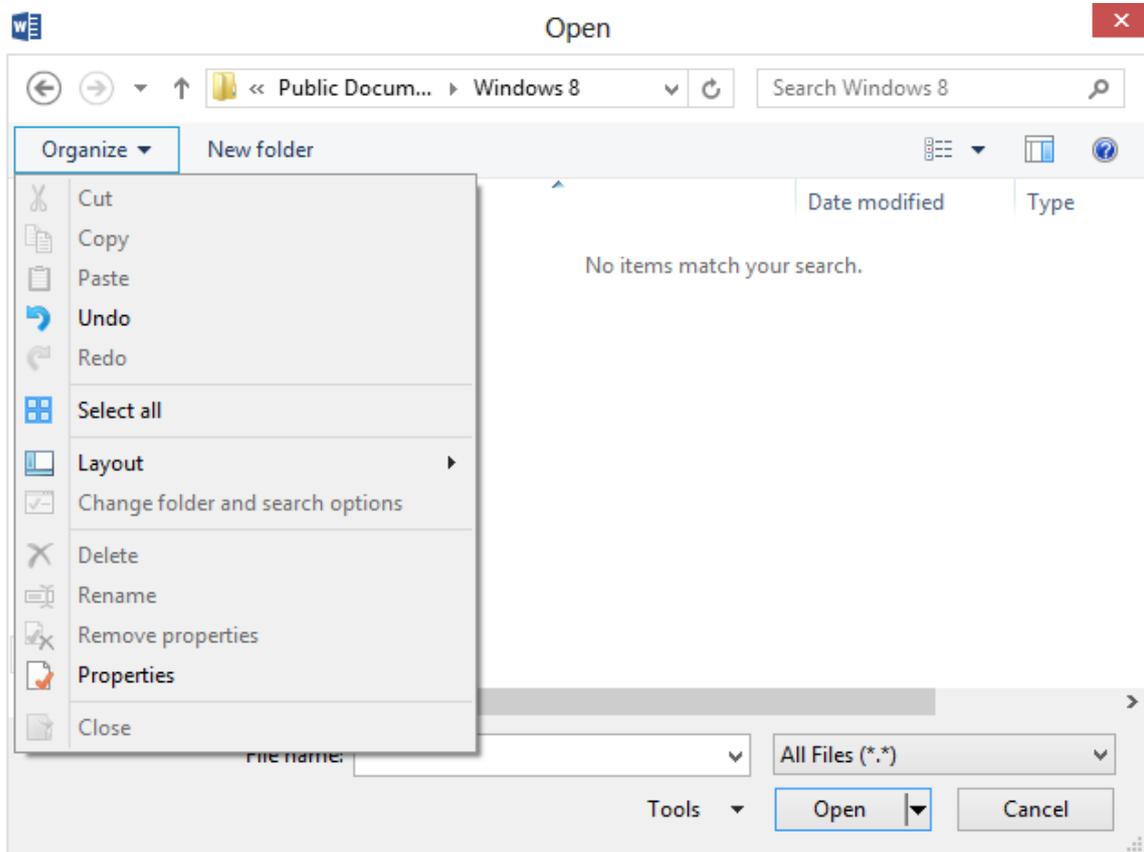
Within a File Open, File Save or File Save As dialog box you can copy, move, clone and rename files.

# Windows 10 for Microsoft Office users

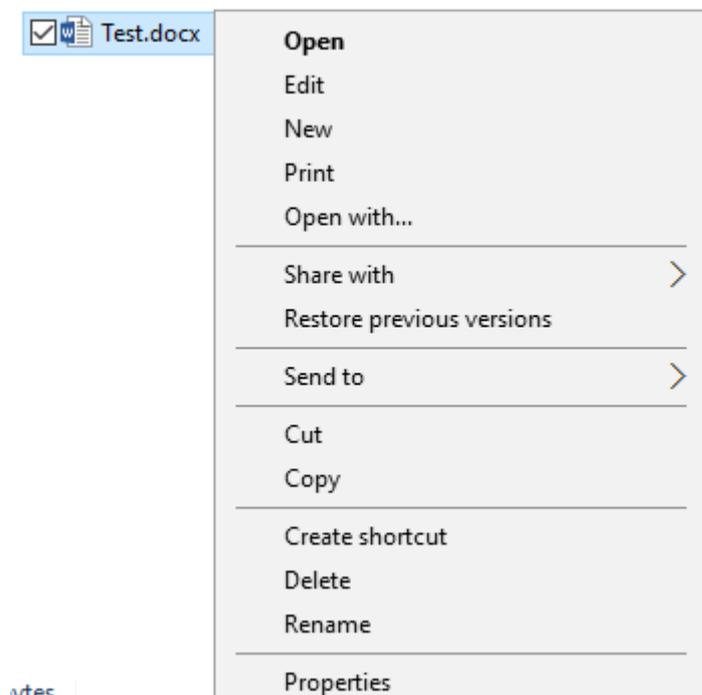
## Explorer - Office Dialogs

### OPEN

File Open not only lets you open a document in a program. Under the Organize menu you can access some standard Explorer functions.



You can also right-click on a file to see similar options.



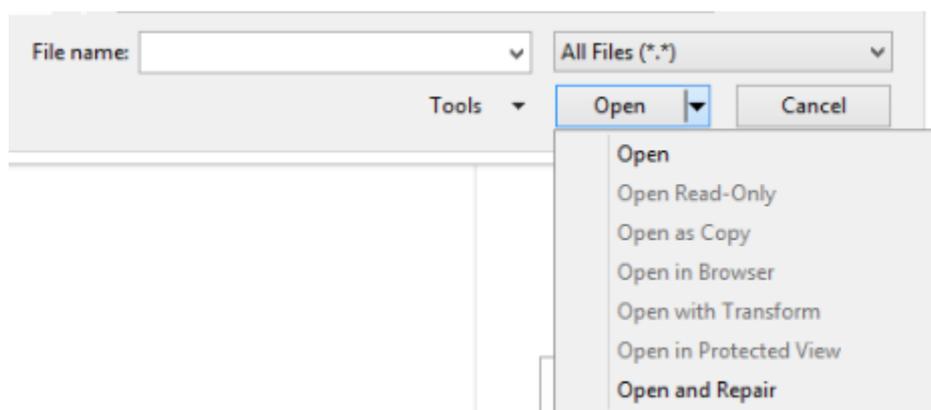
## Windows 10 for Microsoft Office users

### Explorer - Office Dialogs

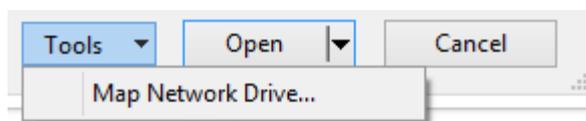
Your right-click menu probably has other options inserted from additional programs. The above menu is taken from a 'pure' Windows installation with no additions.

The first set of menu items (in the above case Open, Print, Edit and Open with ...) depend on the type of file selected. There's no difference between Open and Edit in this example because they both open the same program. But there are situations, like image files, where Open will display the image while Edit opens an image editing utility instead.

The Open button may be a pull-down list of additional opening options (the example below is from File Open in Word 2013).



Under the Tools menu can be some more options, though in this case it's only 'Map network drive'.



### SAVE AS

File Save As lets you save a copy of the current document under a different name or location. The newly saved document then remains open in the program.

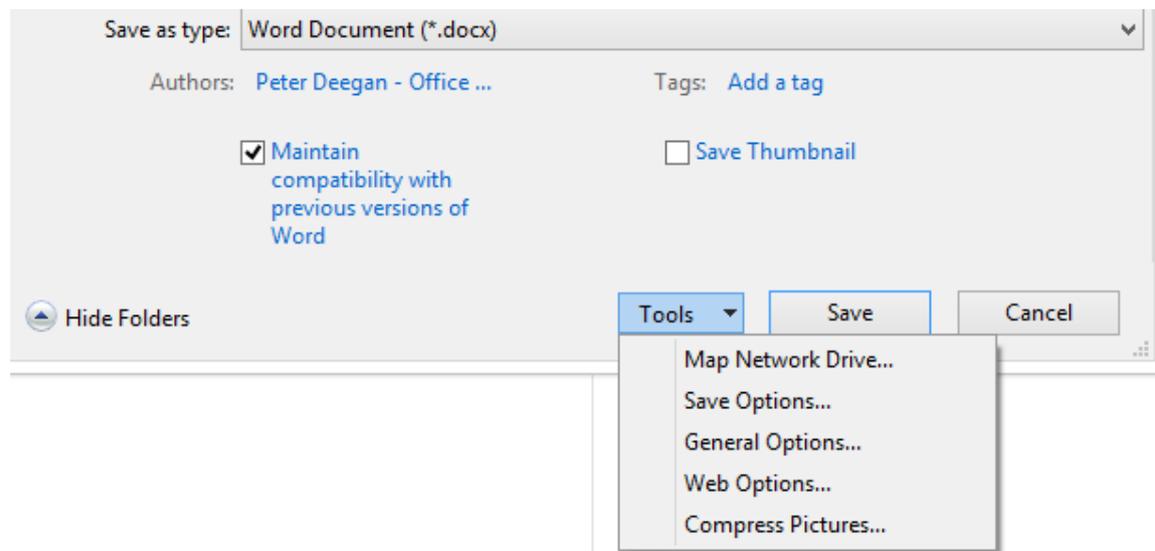
Its most commonly used to create a new document based on an older one. Open the old document then 'Save As' to a new name before making changes to suit. There is a faster way to do this that we'll discuss [below](#).

The File Save dialog is the same, only it applies to a new document that has no name yet.

## Windows 10 for Microsoft Office users

### Explorer - Office Dialogs

All the features mentioned in the Open dialog above, also work in the Save As dialog.



As you can see in the above example from Word 2013, there are additional Tools available.

The Save As dialog has a screen space saving 'Hide Folders' option on bottom left.

### DIALOGS AS WINDOWS

All the common dialogs (Open, Save and Save As) act like Explorer windows. You can drag and drop files between the dialog boxes and standard Windows Explorer windows.

For example, you can select a file in an Explorer window and drag it to an open dialog. This will copy or move the file to the folder shown in the dialog box.

Or you could select files in Explorer, cut or copy them, switch to the open dialog and paste them to the new location.

# Windows 10 for Microsoft Office users

## Explorer - Explorer tricks

### RESIZING

In the dim dark past, Office dialogs were a fixed size but thankfully these days you can resize them.

You can drag from any corner or side to resize.

Down in the bottom right corner is a little wedge that makes it easier to 'aim' and drag from there.

### EXPLORER TRICKS

Here are a few time saving tricks you can use to speed up your work. They're appropriate for both Explorer windows and common or Office dialog boxes.

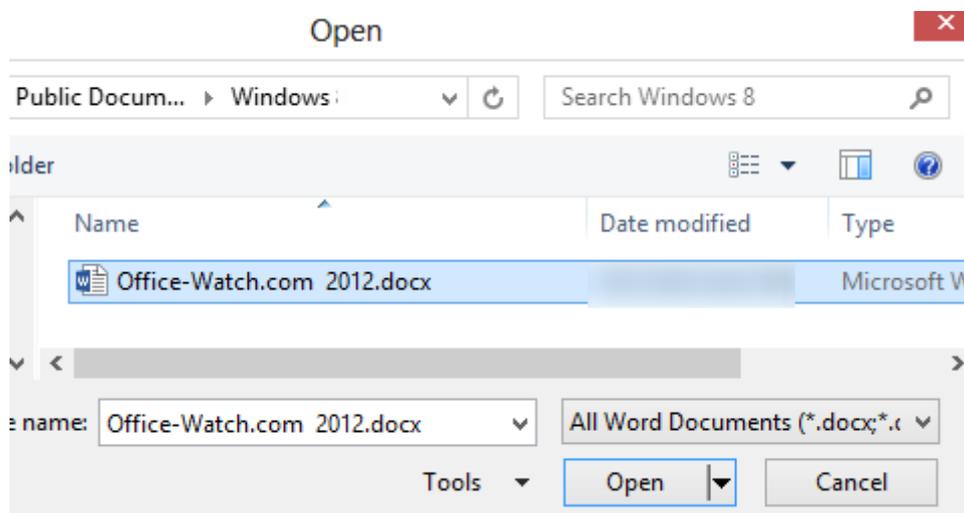


### CLONING A FILE

The Save As dialog is great for making a new document based on an existing one but there's a quicker way that we call 'cloning'.

In short, all you do is choose File Open, then use the copy and paste options to make a copy of the document before opening it.

Choose File Open



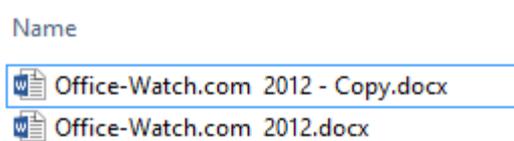
Select the source file and choose copy, probably from the right-click menu.

Then choose Paste, again from the right-click menu. It doesn't have to be in the same folder, you can switch to another location if you wish.

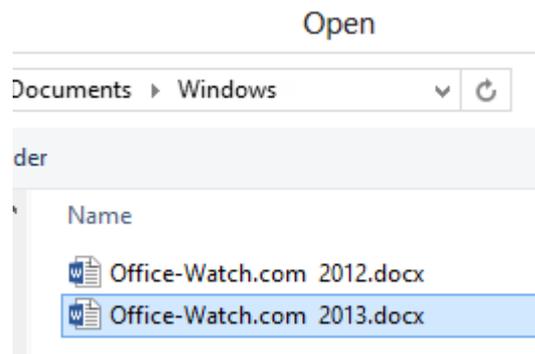
You'll then have two copies of the document, Windows adds ' - Copy' after the file name.

## Windows 10 for Microsoft Office users

Explorer - Explorer tricks



Finally, rename the cloned file.



Now select the newly copied and renamed file and open it.

The whole process takes less than a minute and all within the File Open dialog box.

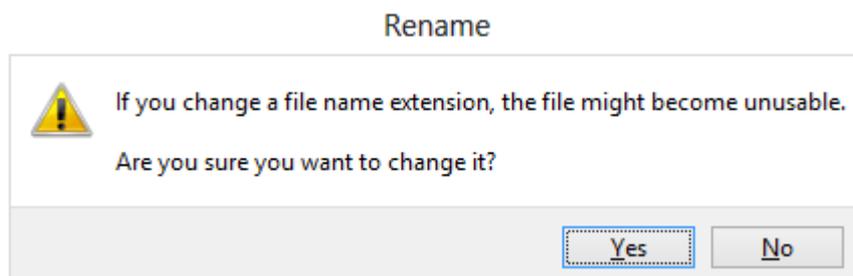
### QUICK RENAME

Renaming a file is easy in any dialog box or Explorer window.

Sure you can select a file, choose Rename from a menu or right-click menu then type in the new name.

Instead just select the file, press F2 and you can edit the file name to your heart's content.

Make sure you don't accidentally change the file extension because that will make the file unavailable to the programs you intend. Happily, Windows will warn you of any extension change before you commit to it.



You'll get this warning whenever there's a change in the file extension, even if the change is to another valid file type.

### COPY A FILE NAME

To copy a file name from Explorer, use the Rename feature but don't change anything, just copy.

## Windows 10 for Microsoft Office users

### Explorer - Explorer tricks

Select the file, press F2 and the file name (not extension) is selected.



Copy the selected text (e.g. Ctrl + C shortcut) then press Enter to stop the renaming feature.

If you want the file name and extension, press F2 then Ctrl + A (i.e. Select All) before copying.

### DRAG AND DROP

Selecting files or folders and dragging them to another location is a quick option. It's easier on larger screens when there's room for all the open windows.

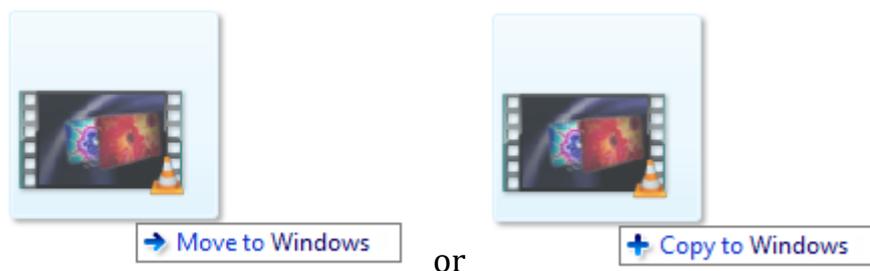
Remember to watch the defaults for dragging and dropping

When the destination folder is the **same** drive as the source – Explorer will MOVE the dragged files.

When the destination folder a **different** drive from the source – Explorer will COPY the dragged files.

You can change that behaviour by holding the Ctrl key down while dragging the files.

Watch the mouse cursor for an indication of whether a copy or move will take place. Earlier versions of Windows had a tiny little change to the cursor, now we get an explicit tooltip with symbol, text and the name of the destination folder.



Be a little careful where you drop files to. If you drop over a sub-folder to the currently open folder, the files will go to the sub-folder. It's the same with compressed files, dropping onto a ZIP or RAR can put those files into that file.

The folder name on the tooltip will help you avoid such mistakes.

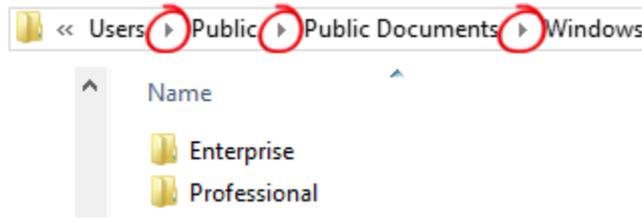
You can drag to an Explorer window that's open but not visible on the desktop by dragging to the taskbar icon for Explorer, while still holding the button the open Explorer windows will appear as thumbnails or a list (depending on the number). Drag to the folder you want and 'drop'; the tooltip above will guide you.

# Windows 10 for Microsoft Office users

## Explorer - Explorer tricks

### JUMPING FOLDERS

The address bar change to a series of names with wedges between each is seriously under appreciated.



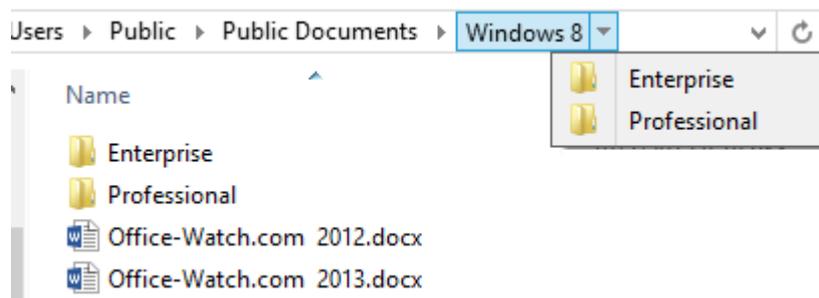
Those little grey wedges aren't just for decoration. Click on one to see the folders available at that level. For example, here's the folders at the Public level:



Click on any one of those links to jump to that folder. The folder in bold text is your current location.

It's a lot faster than clicking 'down' a folder tree then 'up' to the one you want.

Another example is jumping to a neighboring sub-folder. Here's a 'Windows 8' folder with two sub-folders 'Professional' and 'Enterprise'.



If you're in the Professional folder, the quickest way to jump to the Enterprise folder is to use the address bar.

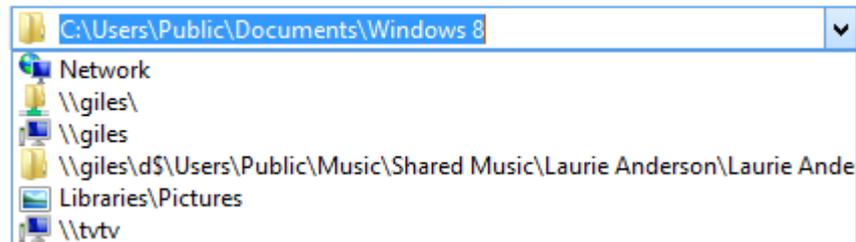


## Windows 10 for Microsoft Office users

### Explorer - Explorer tricks

#### LIST OF LOCATIONS

Next to the Explorer / dialog folder location is a pull-down button that shows some folders or computers used in the past.



It's a mystery how this list is created. There's no apparent rhyme or reason to items appearing in the list or not appearing.

The locations listed have certainly been used in the past but not recently. For example, many weeks ago I copied some MP3's to my Laurie Anderson collection; why is that folder now on the pull-down list and not others I've copied files to?

Presumably someone at Microsoft knows but they're not talking.

Or maybe no Redmond developer has looked at this Explorer detail for years? Unlike most modern pull-down lists, you can't remove items from the list which suggests that it's not been given consideration by the development team.

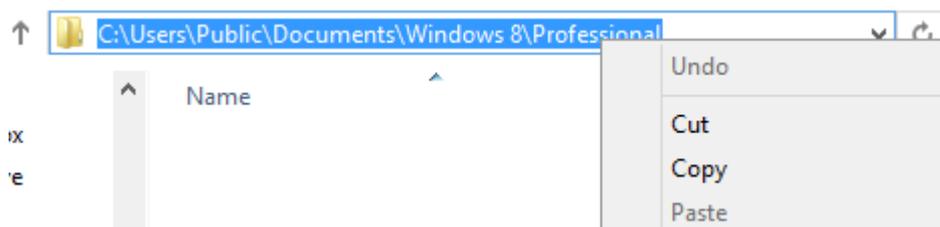
#### COPYING A LOCATION

Since the address bar pull-down list of 'recent' locations isn't a lot of use, you may find situations where you have an Explorer window open at the desired location and you want that same place in an Open or Save As dialog.

The solution is to copy then paste the location from the address line.



While the address line looks 'special' if you click on it, the line will change into a standard text folder name with the text selected ready to copy.



Copy the selected folder name, switch to the dialog box and paste into the address line there. Press Enter and the dialog box will change to that location.

## Windows 10 for Microsoft Office users

### Explorer - Fixing right-click Menus

#### OPEN A LOCATION

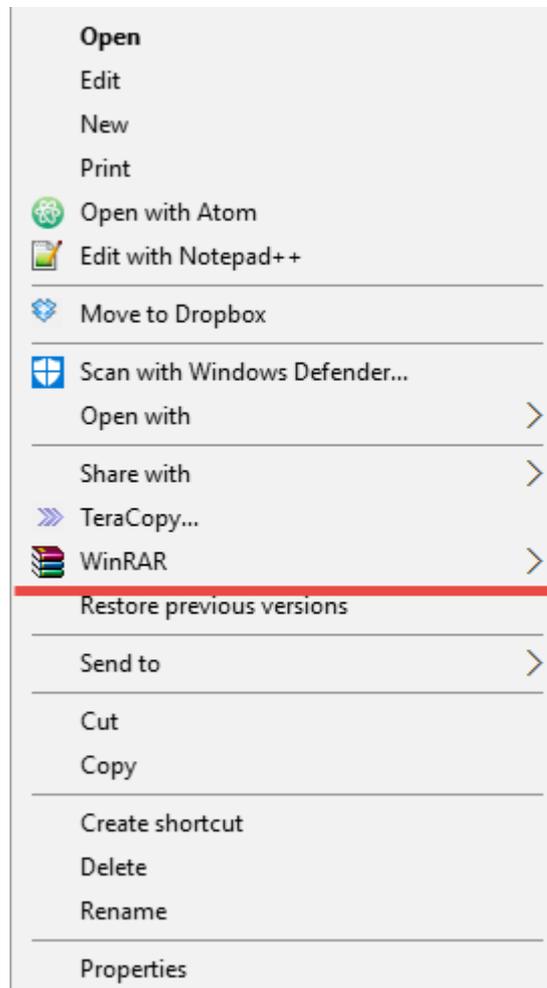
On the right-click menu for a file (but not the Organize) menu is a useful choice 'Open file location'.

This will open a new Explorer window at the location of the selected file. Doesn't sound like much but it can be extremely useful and a lot faster than opening an Explorer window and navigating to the location yourself.

There is also the Copy Path option on the Windows ribbon.

#### FIXING RIGHT-CLICK MENUS

The right-click menus in Explorer can get very cluttered with all manner of options added by programs. Here's an example of a context menu:



Most of the items above the red line have been added by various programs. Too often they've been added during install without choice to stop it.

The programs themselves may be wanted on the computer, just not on the right-click menu.

Here's how to de-clutter those right-click context menus.

## Windows 10 for Microsoft Office users

### Explorer - Fixing right-click Menus

Doing it directly isn't easy. There's a lot of messing around in the registry. We won't waste pages here explaining that because Nirsoft have two utilities that make the job a lot easier.

#### TWO UTILITIES?

Yes, there are two because there are two different types of items on the right-click context menus:

- **Shell** – the fixed items on the menu that are linked to a single file extension like 'Edit' for Word documents.
- **ShellEx** – in short, the fly out menus like 'WinRAR' above are made with shell extensions.

There's a utility for editing Shell items and another for ShellEx.

#### DISABLED

The good news is that all these entries have a special field called 'Disabled'. It defaults to 'No' so the item appears on menus.

If you can change that to Disabled = Yes, the menu item will disappear from the right-click menu.

That makes it easy to test changes without worrying about having to delete and perhaps add an item.

If the original program tries to add or update its right-click menu item, the Disabled status should remain unchanged. That means a reinstall or repair of an app should not change the menus.

#### SHELL ITEMS

Install [ShellMenuView](#) a free and long-standing utility from Nirsoft.

Start it and a long list of shell items will appear. There's many columns but the main ones we're interested in are;

**Menu Name** – what appears on the menu item. An & symbol denotes a shortcut letter.

**Extensions** – what file extensions this item appears for

**Disabled** – as mentioned above. Let's you hide an item without deleting it.

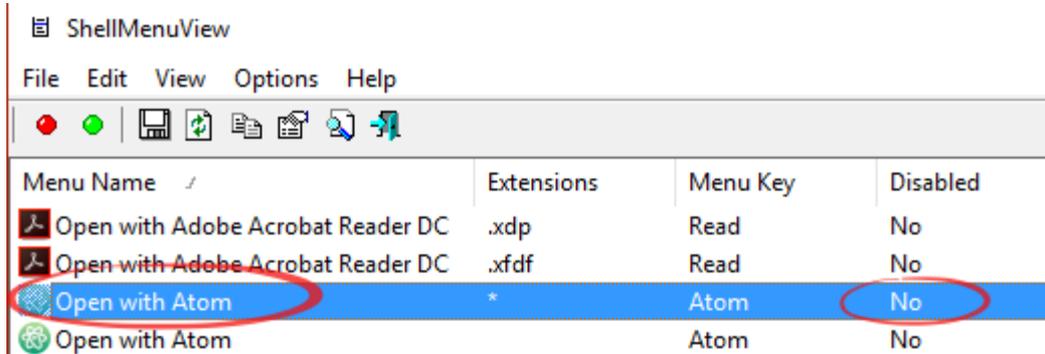
Click on the column headings to sort. Drag and drop the headings to rearrange the order of the columns.

Under the Edit menu is a Find (Ctrl + F) option.

## Windows 10 for Microsoft Office users

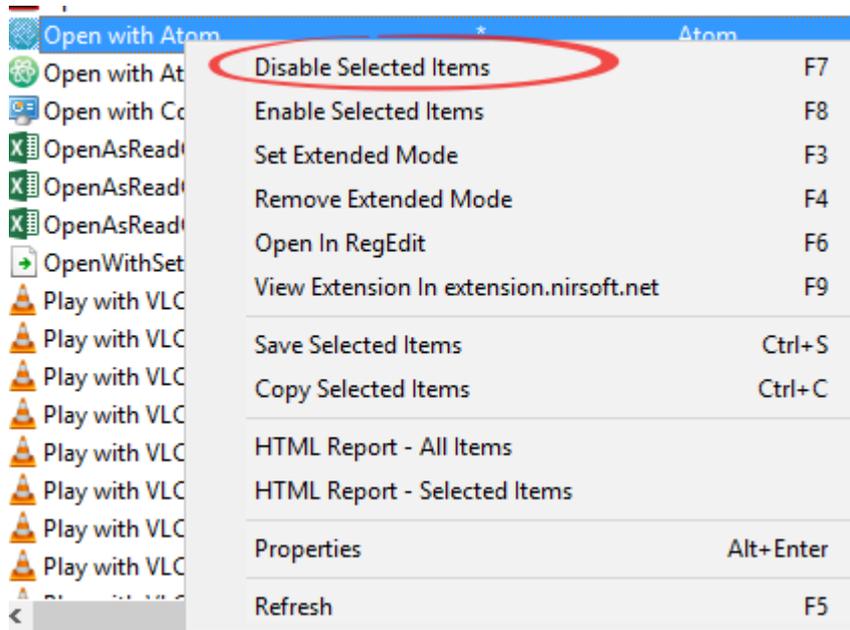
### Explorer - Fixing right-click Menus

For this example, we'll remove/hide the Open with Atom item. Atom is a nice web editor but doesn't need to be on the right-click menu for all file types (see the \* in the extensions column)!



Menu Name	Extensions	Menu Key	Disabled
Open with Adobe Acrobat Reader DC	.xdp	Read	No
Open with Adobe Acrobat Reader DC	.xpdf	Read	No
Open with Atom	*	Atom	No
Open with Atom		Atom	No

Disabling the item is simple as a right-click and choose 'Disable Selected Items'. We've shown the whole ShellMenuView menu so you can see the other options available.



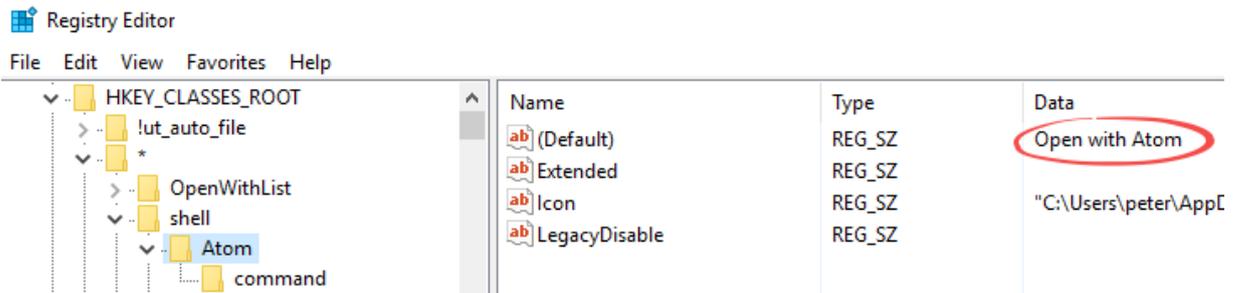
Even easier, click on the red and green toolbar icons to disable/enable items.

You might want to change the wording on a menu item. For example, the item is too long and takes up too much screen space. You have to do that from the Registry. ShellMenuView has an option to open the Registry to

## Windows 10 for Microsoft Office users

### Explorer - Fixing right-click Menus

the right entry. Here's the registry entry for the 'Open with Atom' item we just disabled. Edit the value for (Default) to update the menu text.

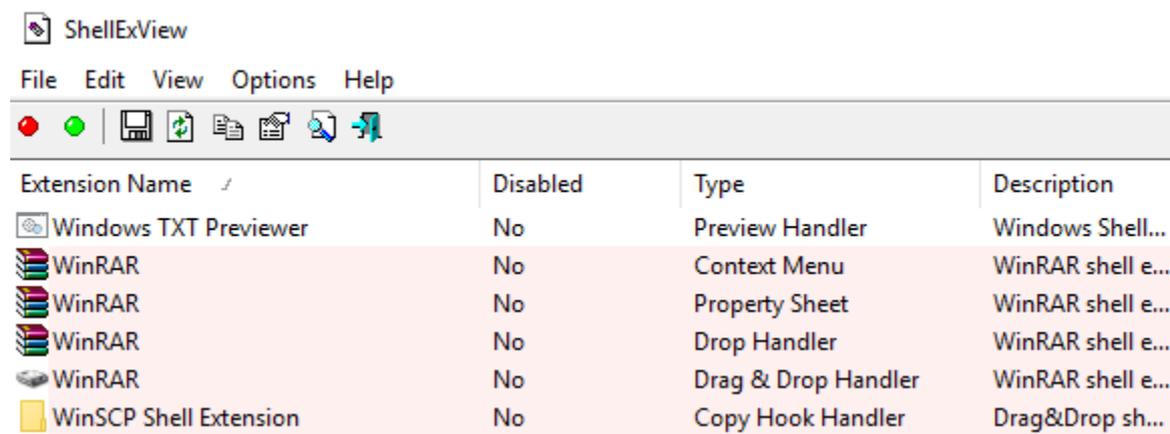


Incidentally, the registry shot above also shows how the Disabled option works at the Registry level. The entry 'LegacyDisable' is added to hide that item.

### SHELLEX ITEMS

[ShellExView](#) is the free Nirsoft utility to manage Shell Extension items.

It works much the same as ShellMenuView but is more complicated because it's sometimes hard to figure out which entry relates to the menu item you're looking for.



We found that the Disable option sometimes didn't work immediately. Try quitting and restarting the application linked to the menu item (eg Dropbox, WinRAR etc).

Failing that, the application might be using some trickery to get on the context menu. Try a web search for that menu item to see what others have discovered.

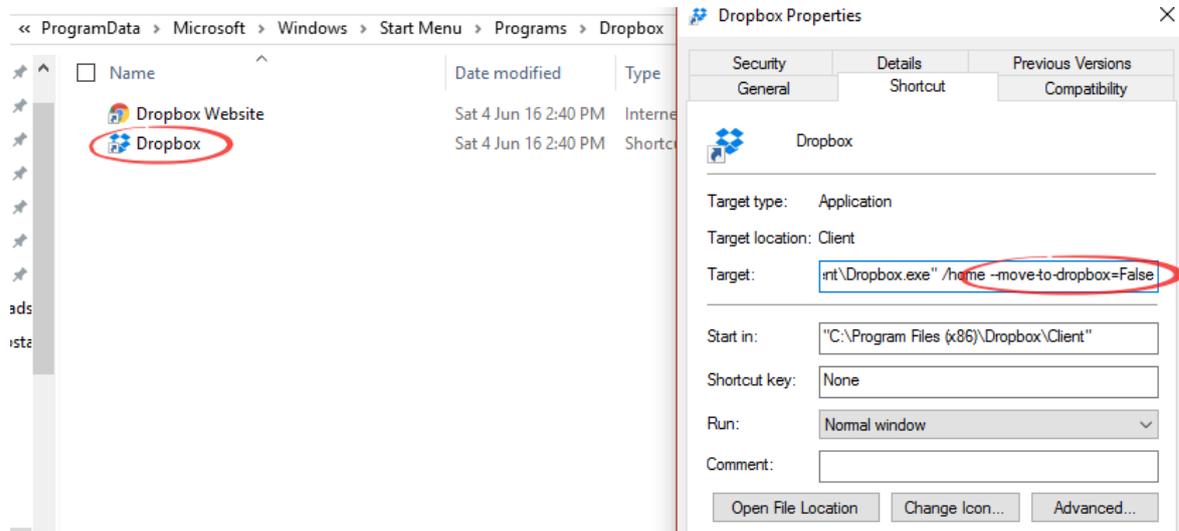
### DROPBOX

For example, hiding the 'Move to Dropbox' item (in the context menu shown above) is done in a unique way. Go to the Start menu item for

# Windows 10 for Microsoft Office users

## Explorer - Fixing right-click Menus

Dropbox, open file location to see the shortcut for the Dropbox menu item.  
Right-click and choose Properties.



In the target add the text `--move-to-dropbox=False` to the end. This doesn't work for any other program.

## Windows 10 for Microsoft Office users

Searching - Simple search

# SEARCHING

Finding files in Windows is quite easy if you make use of the in-built search features.

The ribbon in Windows Explorer exposes more of the search power that was in earlier versions of Windows.

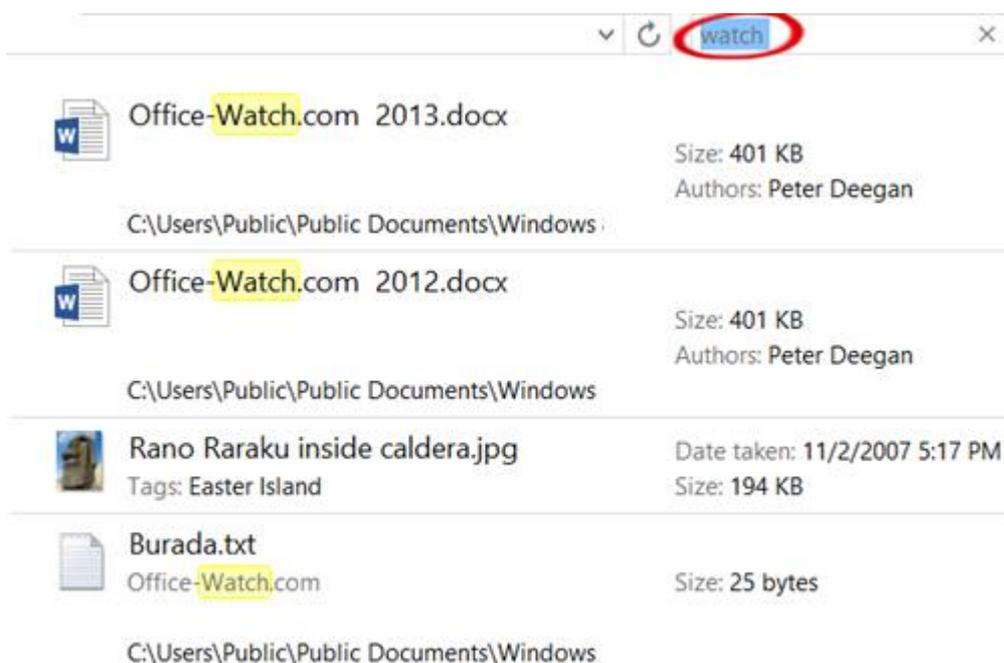
You can search for text inside files; not just Office documents but also in pictures if you've tagged them with location or other text details.

Search among just new files or files of a particular type.

## SIMPLE SEARCH

A simple search is often all you need. Just type words into the search field on any Explorer window and it will find those words in any indexed part of a document. That includes usually hidden parts of the file, we'll get to that in a moment.

In this example, a search for 'watch' has found four results.



Two results are obvious because the search term is in the file name.

The plain text file has the search term in the text.

All three cases have highlighted the search term.

But what about the 'Rano Raraku' image? There's no highlight and no apparent match with 'watch' so why is it in the search results?

# Windows 10 for Microsoft Office users

Searching - Meta-data

## META-DATA

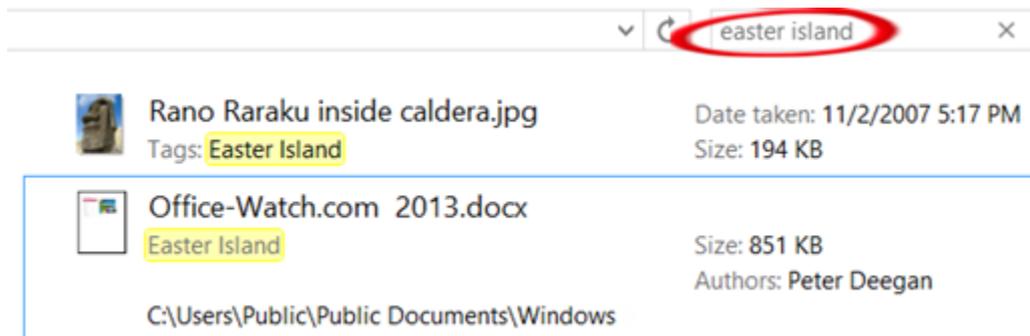
It's there because there are additional 'hidden' details or information in many file formats and that information is searchable. Don't blame us for the word 'meta-data', it's Microsoft's preferred term.

Pictures can have details like the location, people or objects in the photo, date taken, type of camera and many other details. In the 'Rano Raraku' example above the word 'watch' is somewhere in the additional properties.

Office documents have information like the author or comments that aren't part of the visible document but still available and searchable.

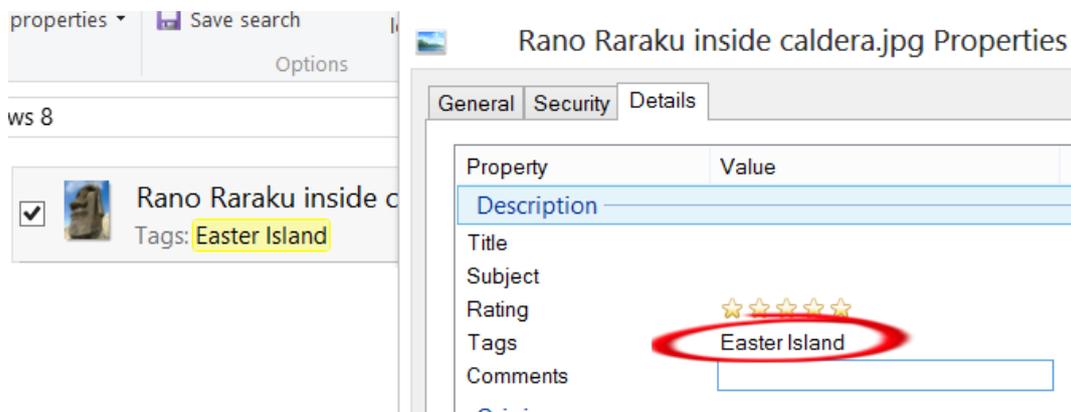
Office documents and other file types have 'Tags' which is a generic name for any label you want to apply to a file. Windows supports adding tags to photos and other media types.

Here's a search for 'Easter Island' with two results.



The image has the search term as an embedded tag and the Word document has it in the comments field.

To see or edit the image tags, right-click on the image, choose Properties | Details.



## Windows 10 for Microsoft Office users

Searching - Detailed searches

In a Word document go to the Info area, here's the Word 2013 version.

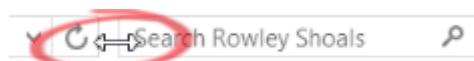
Properties ▾	
Size	851KB
Pages	1
Words	0
Total Editing Time	0 Minutes
Title	Add a title
Tags	Add a tag
Comments	Easter Island

## LARGER SEARCH BOX

As your searches get more complicated, you'll be wanting more space than the default search box allows.

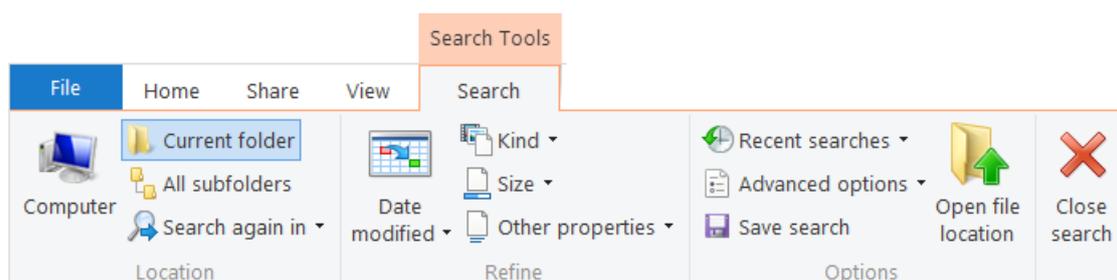
Happily, there's a way to make the search box wider, though you'd have to be lucky or a mind-reader to know it because there's no visual clue.

Move your mouse cursor or tap and hold between the Explorer address bar and the Search box. A twin-arrow appears that you can drag left/right to adjust the size of the address bar and search field.



## DETAILED SEARCHES

More complex searches are easier in Windows 8 with the addition of a Search ribbon.



The ribbon makes available more powerful searches that were possible in earlier versions of Windows if you knew the syntax and tricks.

Now you can set the location/s to search, some refinements for date, type, size etc., add some search terms and your search results will automatically change as you revise your search.

# Windows 10 for Microsoft Office users

## Searching - Detailed searches

### LOCATION

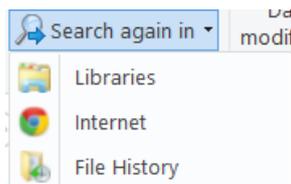
The ribbon section controls where the search will take place. By default, searches are in the current folder and sub-folders.

**Computer** – searches the entire local computer, all available drives.

**Current Folder** – the location in the Explorer address bar.

**All subfolders** – the current location plus all folders ‘below’ it.

**Search again in** - gives a limited set of alternative locations.



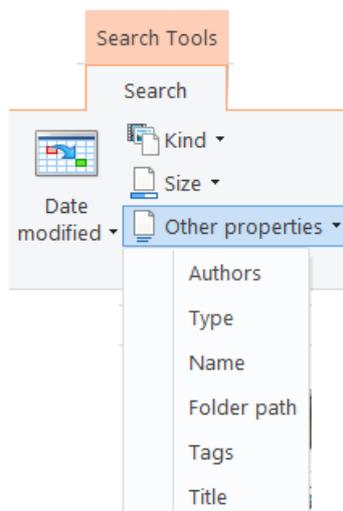
Sadly, this list isn't well thought through. 'Libraries' would be more useful if the libraries were listed individually.

'Internet' will use the search terms in a standard web search using your default browser and search engine (in the above example, Google Chrome).

File History opens the Windows versioning feature and looks for matching files in its time based storage.

### REFINE

The refine section helps you narrow your search against more details than just a broad word search. This is especially useful when you want reduce a long list of search results.



Any of these refinements can be combined to make a complex search. For example:

```
Desert datemodified:3/12/ 2012.. 3/14/2012 datecreated:last  
year type:docx folderpath:Tania
```

## Windows 10 for Microsoft Office users

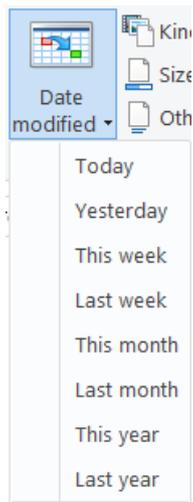
### Searching - Detailed searches

will find Word .docx documents with the word 'Desert' somewhere in them, first created last year but modified between 12 and 14 March 2012 and saved in a folder path that includes the word 'Tania'.

Search terms can be in any order. The search box is plain text which you can copy, cut or paste to make the search you want.

#### DATE MODIFIED

A pull down list of date options based on the Date Modified attribute of each file. This is different from the Creation Date or Date Taken for photos.



As with all the refinements in this section, Windows adds the search term to the search field.

datemodified:this week X

You can type in a different parameter after the colon, edit it or remove entirely. Even though the inserted text is in blue, it's just text you can change like anything else in the search field.

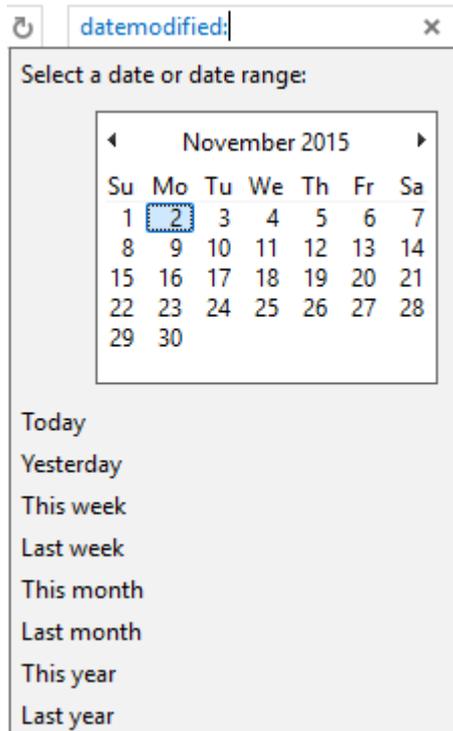
In that line there's a nifty trick. You may have been disappointed that there's no date picker in the pull-down list above. A date picker would let you choose a specific range of dates.

# Windows 10 for Microsoft Office users

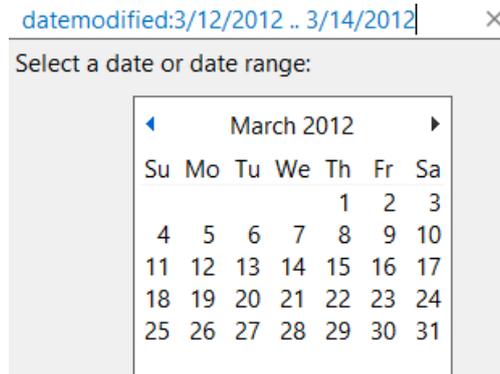
## Searching - Detailed searches

### DATE PICKER

Well, guess what? There is a date picker hiding on the search field but not the pull down list on the ribbon. Type `datemodified:` and the picker will appear.



You can click on a single date or, more likely, click on a date, hold the shift key and select a second date to create a date range.

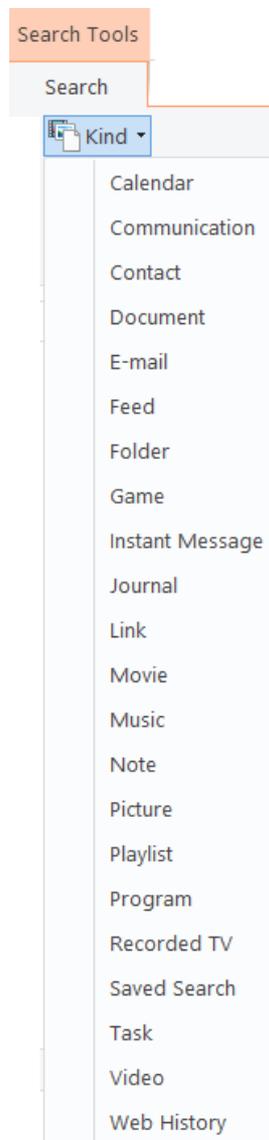


# Windows 10 for Microsoft Office users

## Searching - Detailed searches

### KIND

Kind gives some idea of the wide range of data that Windows indexes for faster searching.



Many of the 'kinds' relate to Windows / Modern apps.

For example 'Calendar' searches the Calendar app – not the Outlook calendar.

Similarly, 'Contact' is for the app not Outlook contacts.

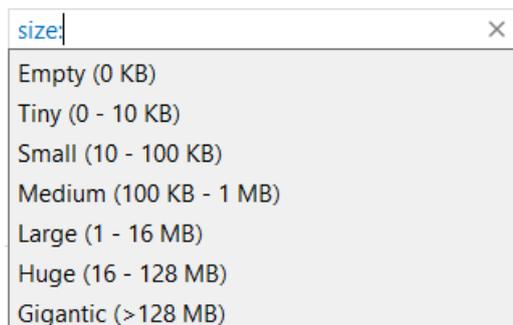
'Saved Searches' lets you search the [search detail files](#) you can create.

## Windows 10 for Microsoft Office users

### Searching - Detailed searches

#### SIZE

Limit to certain file sizes using a pull-down list that's available on the ribbon and search field.



Or make your own size range by typing `size:` followed by a range.



The above example will show all files over 2GB.

#### OTHER PROPERTIES

These pull-down options add special text to the search field for you to type against. The other properties change according to the folder type (under the folder Properties | Customize). The standard 'other' search properties for a General folder are:

#### TYPE

Adds `type:` to the search field.

Type in this context means file extension: `doc`, `docx`, `xls`, `xlsx` etc.

That's handy because it lets you search for files of a specific type (i.e. extension). For example `type:jpg` will search all files that have 'jpg' extensions.

Beach `type:docx` will find any Word `.docx` document with 'beach' in the file name, content or meta-data associated with the document.

Keep in mind that Type is literal about file extensions. `type:doc` will find 'old style' Word `.doc` files and not the newer `.docx` types. `type:xlsx` will find Excel worksheets but not macro enabled `.xlsm` worksheets.

#### NAME

Adds `name:` to the search field.

In this case 'Name' means file name and extension.

`Name:jpg` will find any file with `jpg` in it such as both "beach.jpg" and "specs for jpg format.docx".

# Windows 10 for Microsoft Office users

## Searching - Detailed searches

### FOLDER PATH

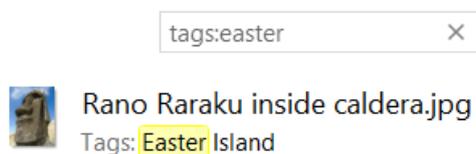
Adds `folderpath:` to the search field.

`folderpath:dagg` will find any text in the path with that phrase eg `c:\users\fred dagg\`.

### TAGS

Adds `tags:` to the search field.

`Tags:easter` will find any text match within the tags for a file. Unlike some tag searches, the Windows search will include partial matches.



### AUTHORS

Adds `authors:=` to the search field in folders customized for Documents.



`authors:= "Peter Deegan"` will find all documents with yours truly as the author.

`authors:=[ ]` is useful since it will find all documents with no author specified.

Unfortunately, `authors:=` requires exact matches for a full author name. `authors:="Peter"` will not find all authors with that name, not even me! This search should work for all Office documents.

### TITLE

Adds `title=` to the search field in folders customized for Documents.

## Windows 10 for Microsoft Office users

### Searching - Detailed searches

This item searches the title field inside a document, not the file name. Title is set in the Office document properties:

Properties ▾	
Size	401KB
Pages	1
Words	0
Total Editing Time	1 Minute
Title	Add a title
Tags	Add a tag
Comments	Add comments

In many cases the Title field is empty since it has to be explicitly set within Office.

`title=Bayliss` will find any document with 'Bayliss' in the title.

`Title=[]` will show any documents that have no title set.

#### DATE TAKEN

Adds `datetaken:` to the search field in folders customized for Pictures.

Modern cameras add 'Date Taken' text information, amongst many details, to the image file. This date and time should be unchanged by later editing of the photo.

There is a [date picker](#) for this search term.

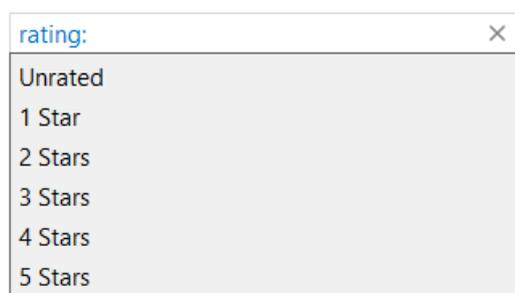
---

*When you travel it's really handy and saves confusion if you make sure your camera is set for local time. If you have more than one camera (maybe camera, smartphone, tablet PC etc) make sure they are all time synchronized.*

---

#### RATING

Adds `rating:` to the search field in folders customized for Pictures.



Microsoft has a 'rating' star system for images, music and videos. It lets you rate your media files from least to best as you choose.

## Windows 10 for Microsoft Office users

### Searching - Detailed searches

`rating:4 stars` will show all media files with a rating of four stars.

The pull-down list doesn't show all the possibilities of this search type and really omits the most likely rating searches.

`rating:>3 stars` will show all files with a rating above three stars (ie 4 or 5 rating)

`rating:>=3 stars` will show all files with a rating at or above three stars (ie 3, 4 or 5 rating).

Note that some photo editing packages or other media management software have their own rating/star systems that are separate from the Windows star ratings.

### DATE CREATED

`datecreated:` isn't on any of the ribbon menus but we found it during research for this book. Type it into the search box.

`datecreated:` is the initial date/time the file was made with

`datemodified:` being a later date when the file was last changed.

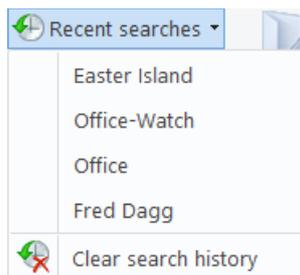
Office documents always have a `datecreated:` setting.

Like the other date search terms, there is a pull-down list of dates or a date-picker available.

### OPTIONS

#### RECENT SEARCHES

This is a pull-down list the eight most recent searches.



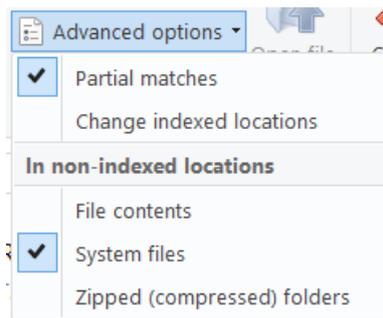
Sadly, you can't edit the list to remove individual entries.

'Clear search history' at the bottom will remove all the search history entries.

# Windows 10 for Microsoft Office users

## Searching - Detailed searches

### ADVANCED OPTIONS



### PARTIAL MATCHES

Leave this checked to allow partial word matches. A search for 'East' will return results from 'Eastern' 'Easter' as well as 'East'.

### CHANGE INDEXED LOCATIONS

Choose this option to show the Indexing Options dialog.

### IN NON-INDEXED LOCATIONS

This option lets you choose additional places to look for matching files for NON-indexed locations only. Check / Unchecked as required.

**File Contents** - searches the content in non-indexed folders.

**System files** - includes system files in the search

**Zipped (compressed) folders** - a slightly confusing label. Checking this option will search inside ZIP compressed files (which Windows 8 will show as folders).

### SAVE SEARCH

If there's a search you regularly do, it can be saved to a `.search-ms` extension file. Windows creates a 'Searches' folder in your user folder (eg `\Users\ <user name> \Searches`) but you can save a search anywhere you wish.

To rerun the search, double-click on the search file.

### OPEN FILE LOCATION

Select a file then click this button to open that folder. The same option is on the right-click menu for any search result file.

This feature is handy if you're searching for a file with the real intention of locating the folder that has the file and others.

### CLOSE SEARCH

Closes search results and the search tab/ribbon.



## Windows 10 for Microsoft Office users

### Searching - Indexing

Any file types that are listed but have no iFilter to index the contents have their file name, date etc indexed with the 'File Properties filter'.

#### OFFICE DOCUMENTS

Windows installs a 'Microsoft Office filter' which handle some common 'old style' Office document types (doc xls xlt ppt pps pos ). A Wordpad DOCX filter covers docx files.

When you install Microsoft Office 2007 or later it will install a series of ifilters for the file types created by that Office version. For example, Office 2013/Office 2016 handles docx, xlsx, pptx and many other extensions with a series of 'Open Office XML Format' iFilters.

For Office 2003 and previous versions you can install the free '[Office 2010 Filter Pack](#)' which installed ifilters for all Office document types, both new and old. Despite the name, the '[Office 2010 Filter Pack](#)' doesn't need Office 2010 or any version of Office. It only requires Windows XP or above. There are separate downloads for 32-bit and 64-bit Windows.

If you don't have Office installed on the Windows computer, you can still search for Office documents using the same '[Office 2010 Filter Pack](#)'

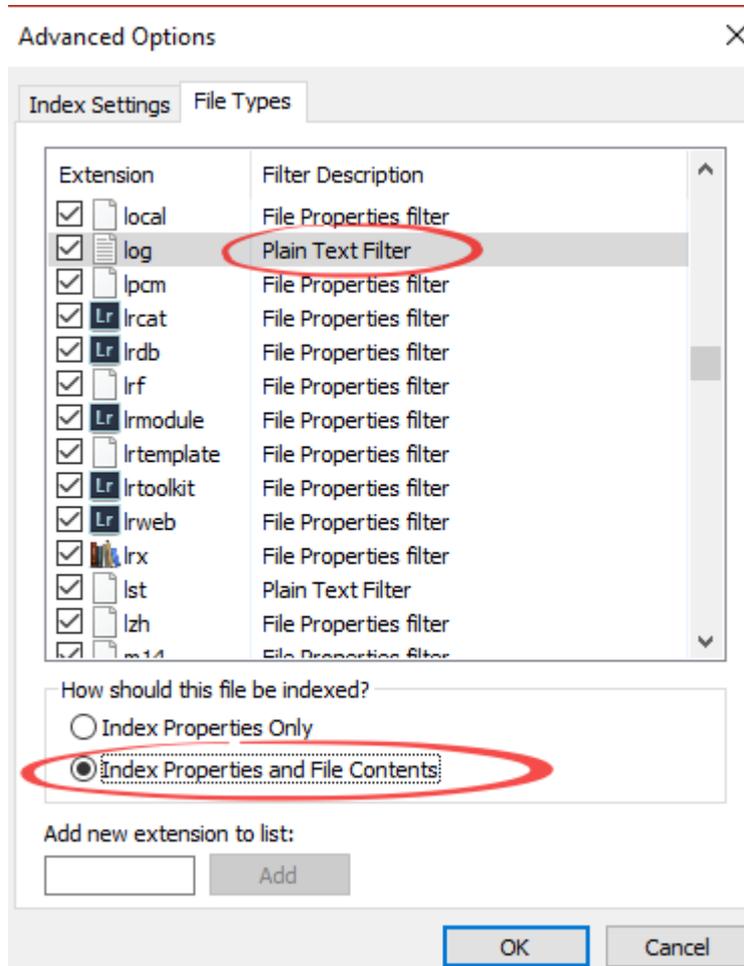
#### PDF FILES

Windows will index PDF files using the 'Reader app' iFilter which does a basic indexing job.

When you install the latest [Adobe PDF reader](#), it will also install a better iFilter for PDF files.

### CHANGE INDEX SETTINGS

To change the iFilter for an existing file type, select the .extension then choose Index Properties and File Contents.



The filter will change to 'Plain Text filter' which will index the entire contents of the .log file.

#### ADD A FILE TYPE

To add a file extension to the file types list simply type the extension (without the dot/period) and click on Add.

That will add to the file types list with the File Properties filter only. Then change the setting to 'Index Properties and File Contents'.

#### REMOVE A FILE TYPE

To remove a file type from indexing, UNcheck the box next to that file type. The entry won't be deleted but it will force the index to be rebuilt without including those files.

## Windows 10 for Microsoft Office users

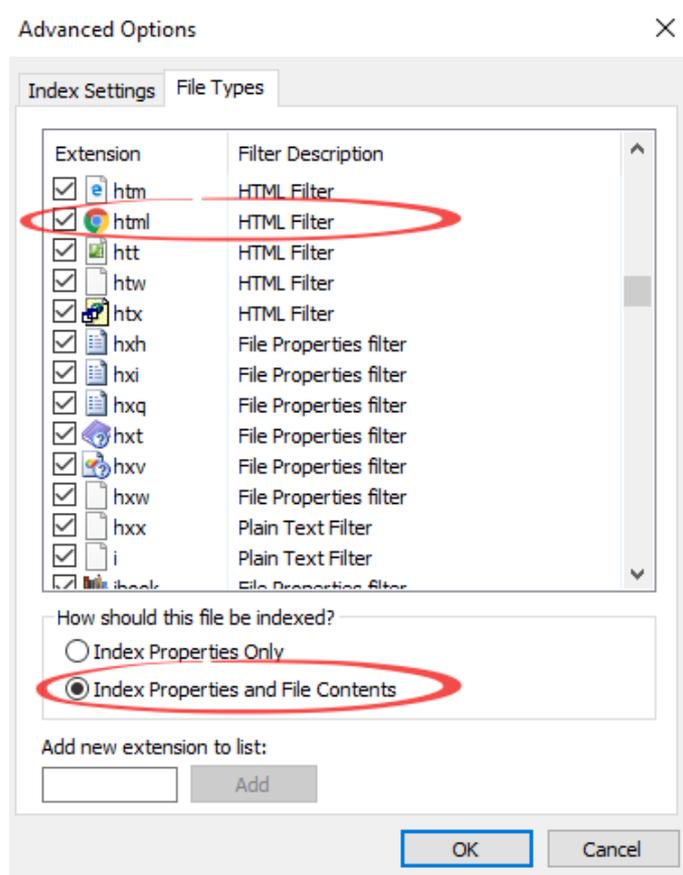
### Searching - Code Indexing

## CODE INDEXING

Depending on what language you're using, you might need to change the indexing properties to search inside programming or web code. Some code files are indexed so you can quickly search the code, for example a variable name. But other types of pages are not.

Without indexing of contents it can be hard to find the file/s with a certain word or phrase among many files in a folder or sub-folders.

Go to Control Panel | Indexing Options | Advanced | File Types. .html .htm and similar pages should be using the HTML iFilter by default.



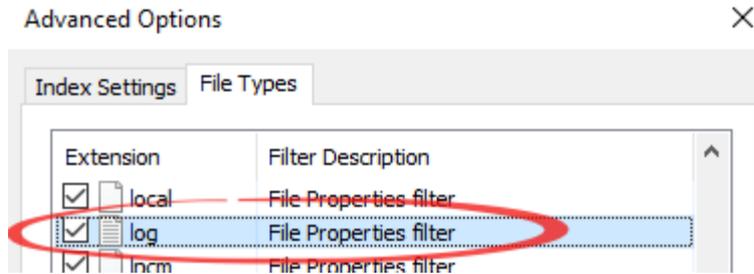
The same should also be set for other Microsoft related code like .asp or .aspx.

But when you move beyond those Redmond approved extensions it's a different story.

.LOG files (commonly used by developers) only indexes the file name, not the contents.

# Windows 10 for Microsoft Office users

Searching - RAW image support



.php (another common programming language) may not be listed in the file types at all.

This is easy to fix because .log, .php and most programming code is saved in plain text files. You can [add a file type](#) or [change index settings](#) as shown above.

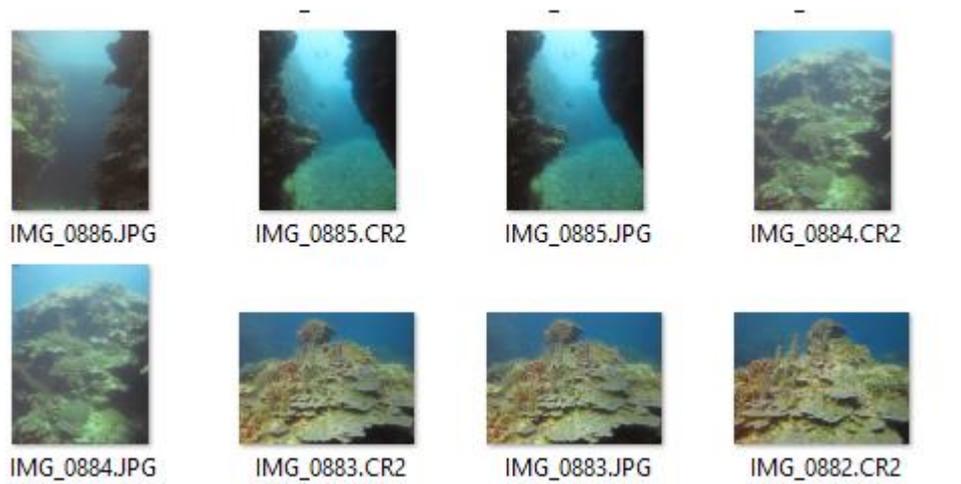
## RAW IMAGE SUPPORT

RAW images are high-resolution, uncompressed images that are made by many high-end cameras. You can edit and tweak RAW images much more effectively than the standard JPG files.

A proper Windows codec for RAW files means you can see thumbnails in Explorer and insert RAW images into Office documents.

For Windows 10, the RAW image support is included rather than the separate codec pack that was required for earlier versions of Windows.

RAW files should appear in Explorer. In this example the RAW images have .CR2 extension and there are matching JPG's of the same image because many cameras save two copies of the one shot – RAW and JPG.

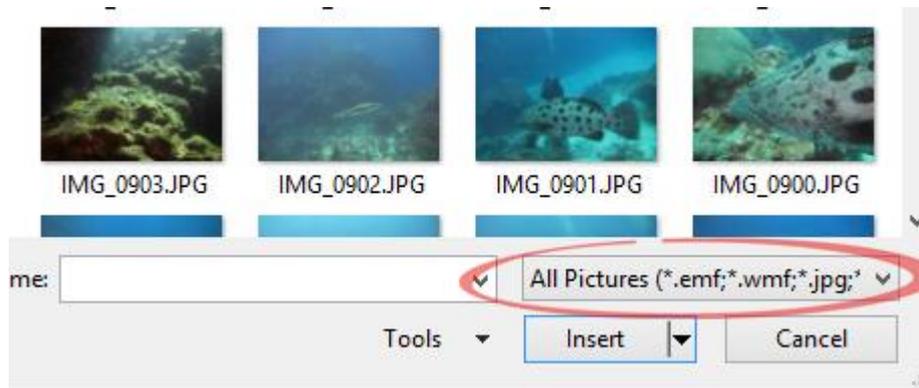


One minor detail not updated by the codec is the list of supported images in Office. If you choose Insert | Picture from any Office program the

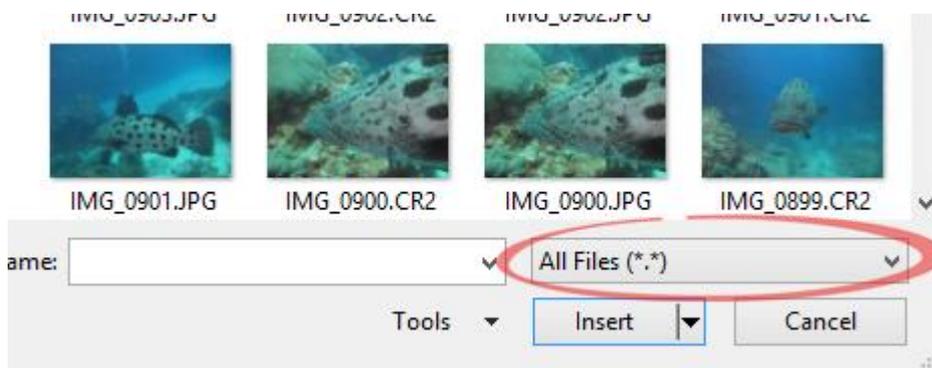
## Windows 10 for Microsoft Office users

Searching - RAW image support

selection dialog defaults to only showing certain file extensions (eg .jpg, .png .wmf etc).



That filter doesn't include RAW file extensions (eg .NEF .CR2 .RAW) so they don't appear in the example above. Here's the same folder with 'All Files' selected so it shows both the JPG and CR2 files.



We've not been able to find a list of Windows 10 supported RAW formats. Here's the Windows 8.1 list as a guide:

- **Canon:** Digital Rebel XT, Digital Rebel XTi, EOS 10D, EOS 20D, EOS 30D, EOS 40D, EOS 50D Digital, EOS 60D, EOS 300D, EOS 350D, EOS 400D, EOS 450D, EOS 500D, EOS 550D, EOS 600D, EOS 1000D, EOS 1100D, EOS 5D, EOS 5D Mark II, EOS 5D Mark III, EOS 7D Digital, EOS D30, EOS D60, EOS Digital Rebel, EOS Kiss Digital, EOS Kiss Digital N, EOS Kiss Digital X, EOS Kiss F, EOS Kiss X2, EOS Kiss X3, EOS Kiss X4, EOS Kiss X5, EOS Kiss X50, EOS Rebel T1i, EOS Rebel T2i, EOS Rebel T3, EOS Rebel T3i, EOS Rebel XS, EOS Rebel XSi, EOS-1D, EOS-1D Mark II, EOS-1D Mark II N, EOS-1D Mark III, EOS-1D Mark IV, EOS-1Ds, EOS-1Ds Mark II, EOS-1Ds Mark III, PowerShot G2, PowerShot G3, PowerShot G5, PowerShot G6, PowerShot G9, PowerShot G10, PowerShot G11, PowerShot Pro1, PowerShot S90, PowerShot S95, PowerShot SX1 IS
- **Casio:** EX-FH20
- **Epson:** R-D1
- **Kodak:** EasyShare Z981, EasyShare Z1015 IS
- **Konica Minolta:** ALPHA-7 DIGITAL, DiMAGE A1, DiMAGE A2, DYNAX 7D, Maxxum 7D
- **Leica:** DIGILUX 3, D-LUX 4, M8, M8.2, M9
- **Nikon:** 1 J1, 1 V1, Coolpix P6000, D1H, D2H, D2Hs, D2X, D2Xs, D3, D3s, D3X, D4, D40, D40x, D50, D60, D70, D70s, D80, D90, D100, D200, D300, D300s, D700, D800, D800E, D3000, D3100, D3200, D5000, D5100, D7000

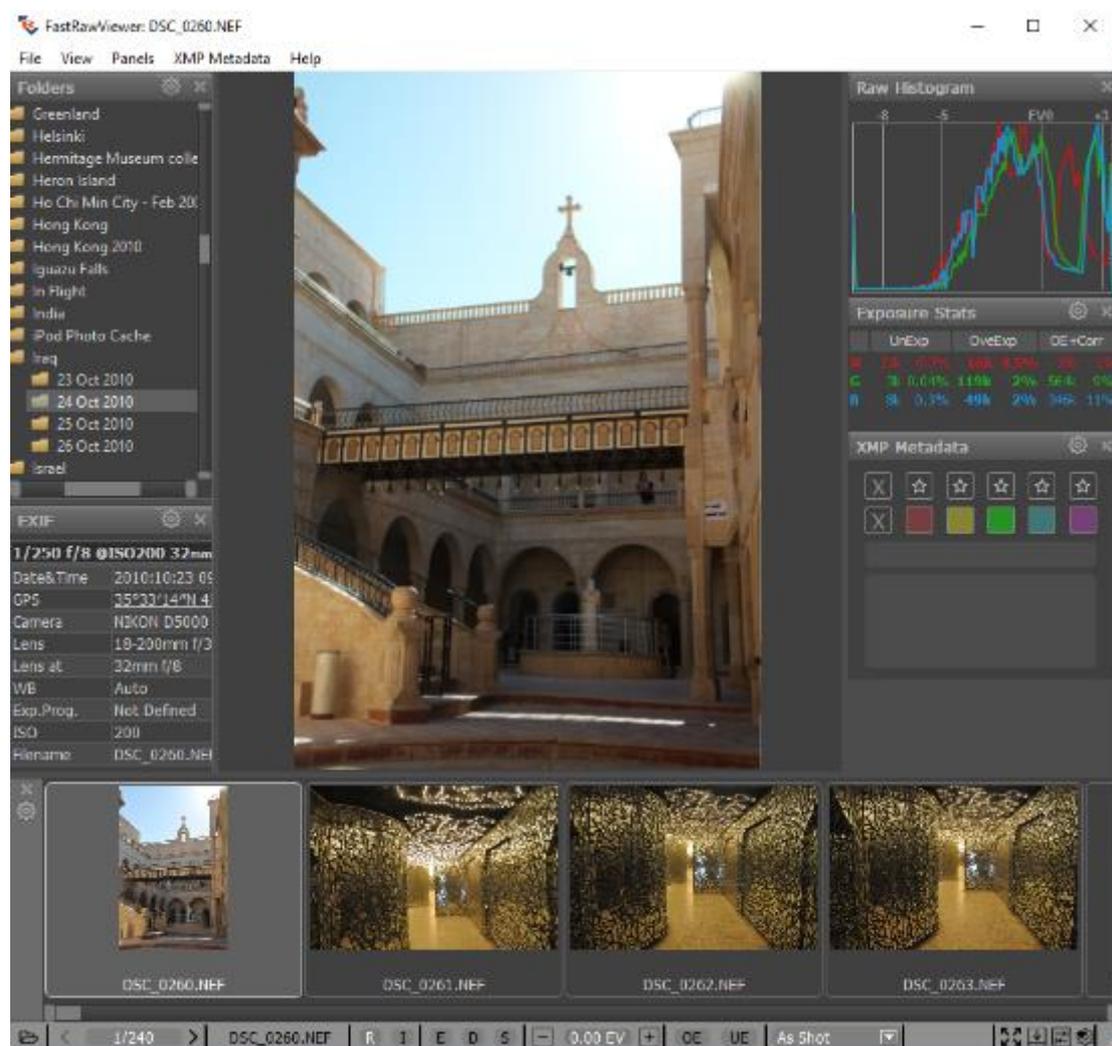
## Windows 10 for Microsoft Office users

### Searching - RAW image support

- **Olympus:** C-7070 Wide Zoom, C-8080 Wide Zoom, E-1, E-3, E-10, E-20, E-30, E-420, E-450, E-520, E-620, EVOLT E-300, EVOLT E-330, EVOLT E-400, EVOLT E-410, EVOLT E-500, EVOLT E-510, PEN E-P1, PEN E-P2, PEN E-PL1
- **Panasonic:** Lumix DMC-G1, Lumix DMC-GH1, Lumix DMC-GF1, Lumix DMC-LX3, Lumix DMC-LX5
- **Pentax (PEF formats only):** \*ist D, \*ist DL, \*ist DS, K10D, K20D, K100D, K100D Super, K110D, K200D, K-5, K-7, K-r, K-x
- **Samsung:** NX11
- **Sony:** DSLR-A100, DSLR-A200, DSLR-A230, DSLR-A300, DSLR-A330, DSLR-A350, DSLR-A380, DSLR-A500, DSLR-A550, DSLR-A560, DSLR-A580, DSLR-A700, DSLR-A850, DSLR-A900, Alpha NEX-3, Alpha NEX-5, Alpha NEX-5N, Alpha SLT-A55/A55V, Cyber-shot DSC-R1

In addition, some camera makers have their own codec packs to suit the particular RAW images made by their cameras. Check the manufacturers web site for the latest download.

If you do a lot of work with RAW images, you might like to try [Fast Raw Viewer](#).



A very well regarded tool for RAW image management. It's compatible with Windows 7,8 and 10. Free trial then US\$19.99 / €18.

## Windows 10 for Microsoft Office users

Searching - Make indexing run faster

### MAKE INDEXING RUN FASTER

You can make Windows Search index your documents and Outlook data faster – here's how. Until the index is complete you may get the dreaded “Search results may be incomplete because items are still being indexed” error.

The problem is that indexing can take a long time and sometimes never completes. Indexing happens as a background task when nothing else is happening. Alas, the default setting is so discreet that indexing can take days and sometimes never finishes.

Windows will fully reindex your computer for various reasons including some changes in index/search settings and if the index files become corrupt.

We'll explain how to speed up the indexing. The steps in Windows 10 are the same, or very similar, in Windows 8 and 7

Below are the step-by-step instructions then some batch files to let you automate the process.

#### **Index Now**

Back in the early days of Windows Indexing there was an 'Index now' option to force indexing to take more computer resources and finish indexing faster. Microsoft took that away in Windows Vista and has been willfully deaf to requests for its return.

There's no button on the Control Panel | Indexing Options that can do it — there's 'Pause' to make it stop but nothing to make it go faster. Grrrr. Any time you change your index settings, the index has to be rebuilt and that that take too long.

#### **Faster Windows Indexing**

Microsoft has provided a way to make indexing go faster – but it's not easy.

In short you have to change a registry key called:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\  
Windows Search\Gathering Manager\DisableBackoff
```

to a value of **1**

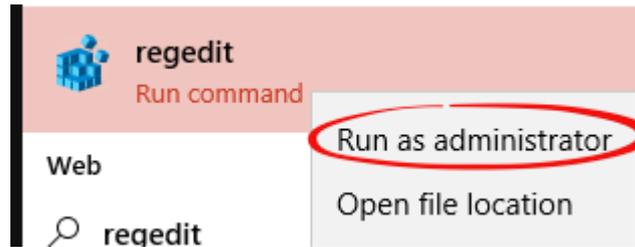
but before you rush off to do that there are some important steps before and after.

If you don't know how to edit the Windows registry, this probably isn't a tip for you. As with any registry changes, take care and make a registry backup before you begin.

- Open Regedit (Start menu | Run | Regedit) as an Administrator:

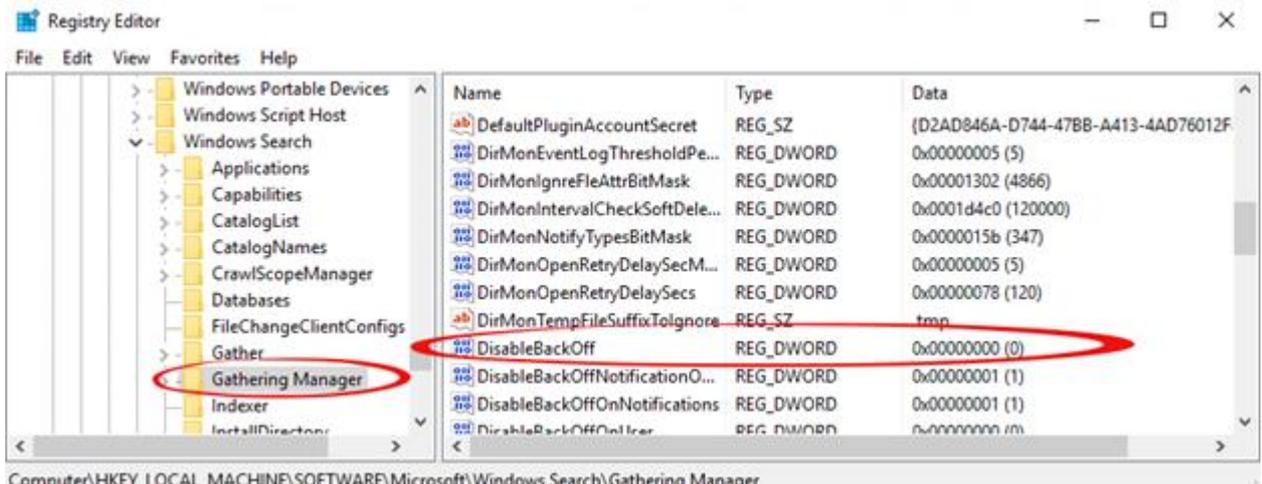
## Windows 10 for Microsoft Office users

Searching - Make indexing run faster



- Go to

HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Windows Search\Gathering Manager\DisableBackoff



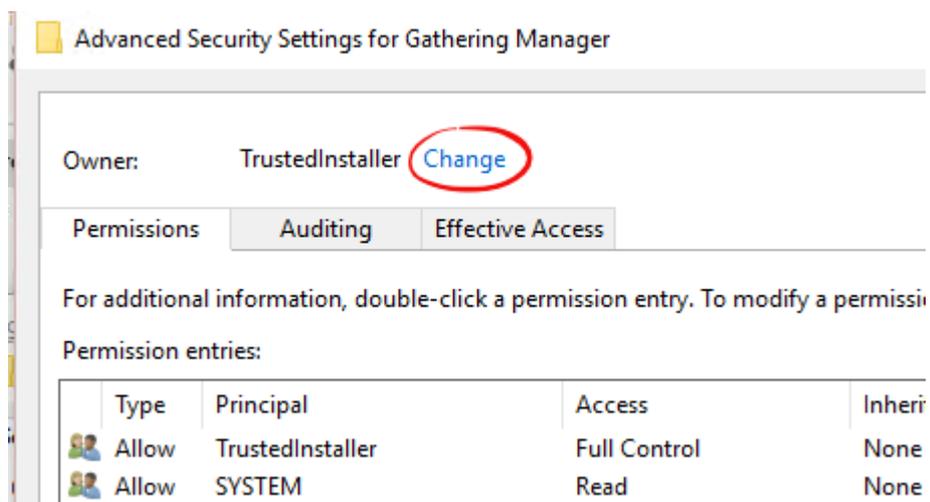
and try modifying the registry value from 0 (the default) to 1 .

If you can, great, but chances are you'll get this error:

*Cannot Edit DisableBackoff: Error writing the value's new contents.*

if so, you'll need this next step.

- Right-click on the 'Gathering Manager' item in the registry tree and choose 'Permissions' then the 'Advanced' button. Next to the listed Owner click the Change link.

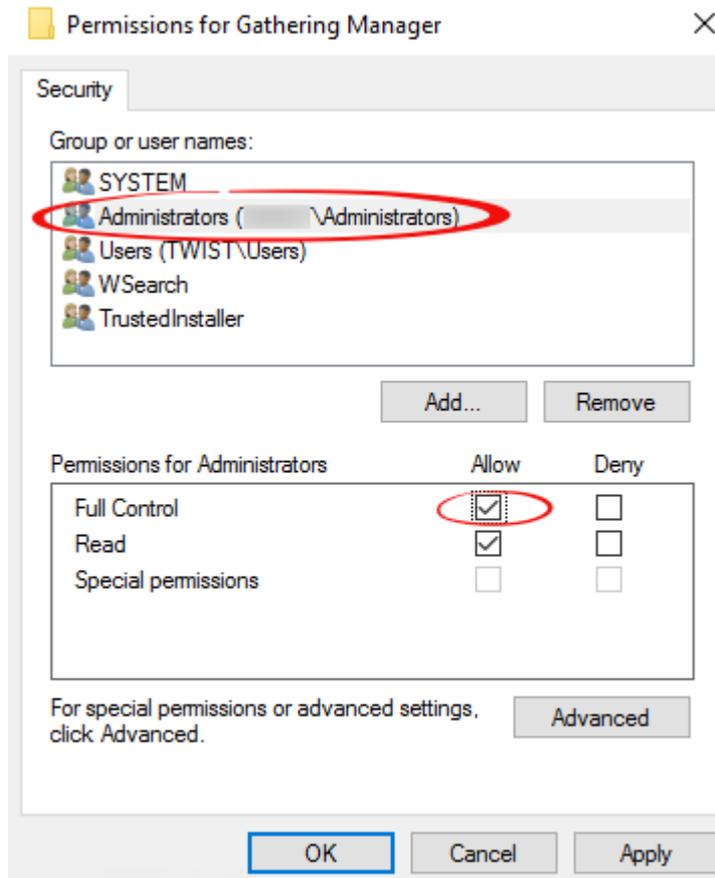


Type in the 'Administrators' group, click Check Names button to verify. Click OK twice to return to the Permissions dialog.

## Windows 10 for Microsoft Office users

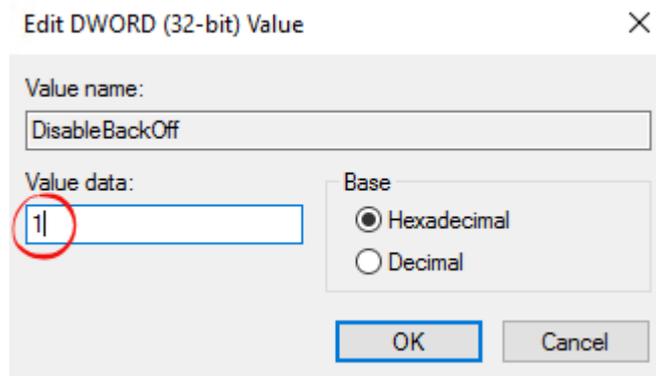
Searching - Make indexing run faster

Make sure the Administrators group has Full Control then click OK.



Now you should be able to edit the DisableBackOff key in step 1. If not, check the permissions and owner carefully.

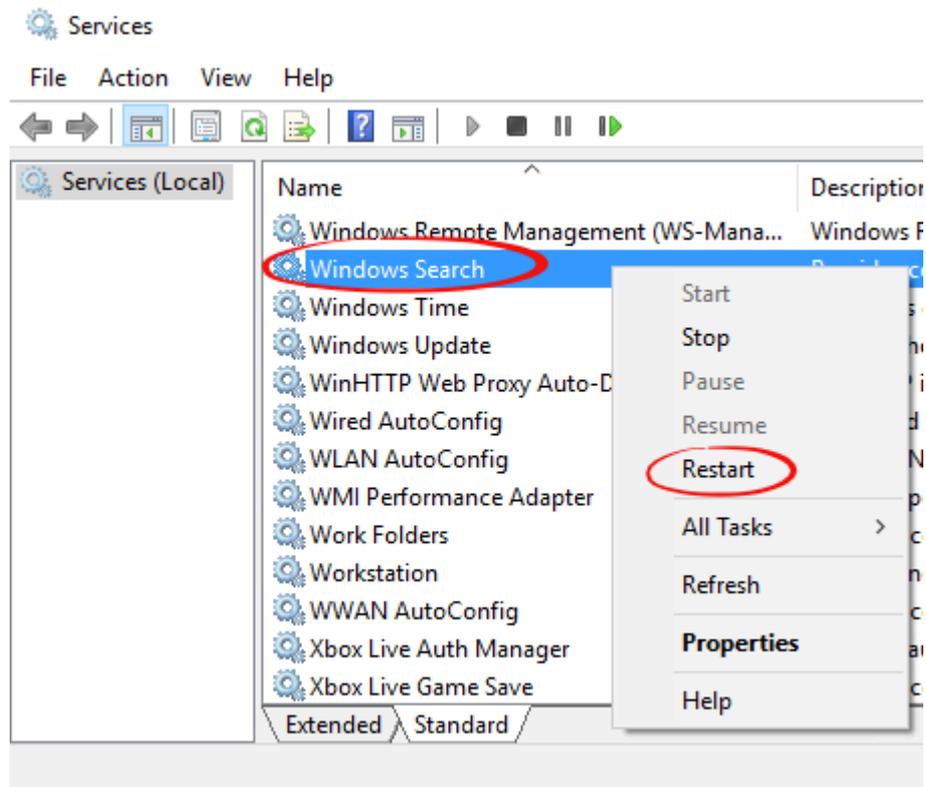
- Once you've changed DisableBackOff to 1:



## Windows 10 for Microsoft Office users

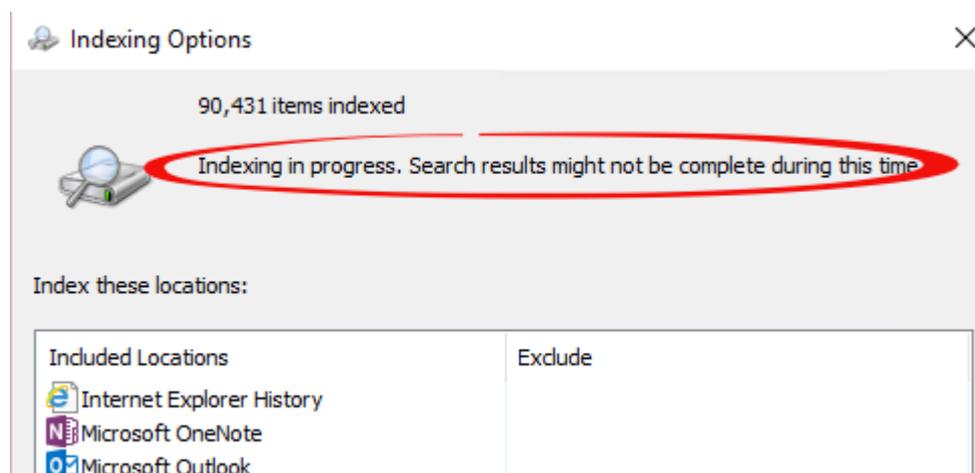
Searching - Make indexing run faster

Go to Control Panel | Administrative Tools | Services, scroll down the list to Windows Search and restart the service.



The registry changes don't take effect until the search services has restarted.

- Go to Control Panel | Indexing Options to monitor the indexing.



- The DisableBackOff = 1 option makes the indexing go faster than the default value. You can continue to work on the computer but indexing will continue in the background and is less likely to pause when other programs are running.

## Windows 10 for Microsoft Office users

### Searching - Make indexing run faster

(If you can't change the registry entry it will be a permissions issue. Make sure you're running Regedit as an Administrator and you've changed the 'Gathering Manager' Owner to the Administrators group.)

The changed option doesn't make indexing happen at a very high priority, just higher than usual. Even when the indexing status is showing 'Indexing speed is reduced due to user activity', indexing is still happening.

On our test machine indexing of 814,000 items took about 23 hours with the changed registry setting instead of running for many days and only indexing a third of the complete computer. It's hardly speedy but better than nothing I suppose.

Of course, the higher priority indexing will make other work on your computer a bit slower, which brings us to the important final step.

- Once the index has caught up with the entire contents of your computer, Outlook etc. you probably don't want the indexing service hogging precious CPU resources.

Go back to the registry, change the DisableBackOff key back to 0 and restart the Windows Search service. You don't have to reverse the registry entry permissions unless you feel the need.

There are other tempting entries in the Windows Search part of the registry, well, tempting to nerds anyway. Resist that impulse with every fibre of your geeky frame. You don't want to go messing with indexing unknowns.

### AUTOMATION

Hopefully you won't need faster indexing very often so the manual steps above are enough. But if you're having ongoing indexing issues, you might need to make the switch more often.

To help you do that, here are some batch files that will help you turn on/off faster indexing.

### **AT YOUR OWN RISK**

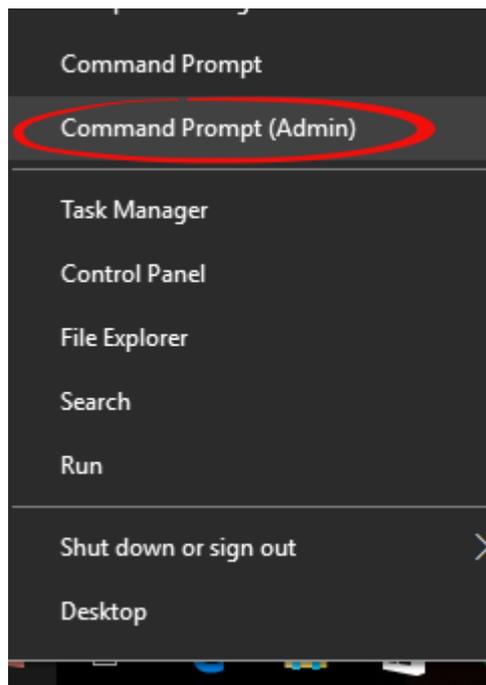
This is for readers a little familiar with Windows and batch files. In these adversarial times we're forced to remind everyone that these examples are provided for you to try *at your own risk*.

### **Requirements:**

- The Registry permissions have been changed (as shown above) to give Administrators access to the 'Gathering Manager' keys.
- Command Prompt is running as Administrator.

## Windows 10 for Microsoft Office users

Searching - Make indexing run faster



### REGISTRY FILES

There are two .reg files to turn on/off the DisableBackoff setting

#### **Indexing-Fast.reg**

```
Windows Registry Editor Version 5.00
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows Search\Gathering
Manager]
"DisableBackOff"=dword:00000001
```

#### **Indexing-Normal.reg**

```
Windows Registry Editor Version 5.00
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows Search\Gathering
Manager]
"DisableBackOff"=dword:00000000
```

**Note:** the names of the .reg files are optional. We chose Fast/Normal to make it clear what the setting will do.

Clicking on those .reg files will change the registry after a few on-screen warnings. But you'll still have to restart the Windows Search service, which bring us to the next step.

### BATCH FILES

Adding some batch files will change the registry (with no prompts) and also restart the Windows Search service.

#### **INDEXING-FAST.BAT**

```
Regedit /S Indexing-Fast.reg
Net Stop Wsearch
Net Stop Wsearch
Net Start Wsearch
Control /name Microsoft.IndexingOptions
```

## Windows 10 for Microsoft Office users

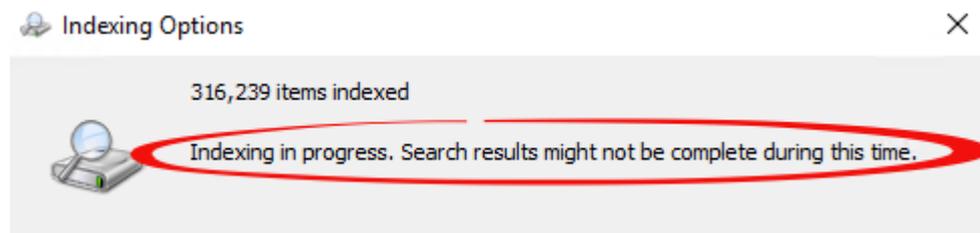
### Searching - Make indexing run faster

- The /s option stops the prompts before a registry change. The change made is contained in the same .reg file as listed above.
- There is no command line equivalent for Restarting a service. You have to Stop then Start it.
  - In our tests, the `Net Stop` command didn't reliably stop the Search service on the first attempt: "The Windows Search service could not be stopped" The second/duplicate Stop ensures that the service has stopped. There's no harm if the service was stopped by the first command.

```
C:\WINDOWS\system32>net stop Wsearch
The Windows Search service is stopping..
The Windows Search service could not be stopped.

C:\WINDOWS\system32>net stop Wsearch
The Windows Search service is stopping.
The Windows Search service was stopped successfully.
```

- If you get a 'System Error 5' / 'Access is denied' on the NET commands, make sure you're in a Command Prompt box run with Administrator permissions.
- `CONTROL ...` opens the Control Panel | Indexing Options dialog so you can see the indexing progress.



INDEXING-NORMAL.BAT

This batch file is almost the same except it uses a different .reg file.

```
Regedit /S Indexing-Normal.reg
Net Stop Wsearch
Net Stop Wsearch
Net Start Wsearch
```

INDEXING-SWITCH.BAT

This version combines the two batches plus a pause in-between to wait while indexing happens.

```
@ECHO OFF
Regedit /S Indexing-Fast.reg
Net Stop Wsearch
```

## Windows 10 for Microsoft Office users

### Searching - Make indexing run faster

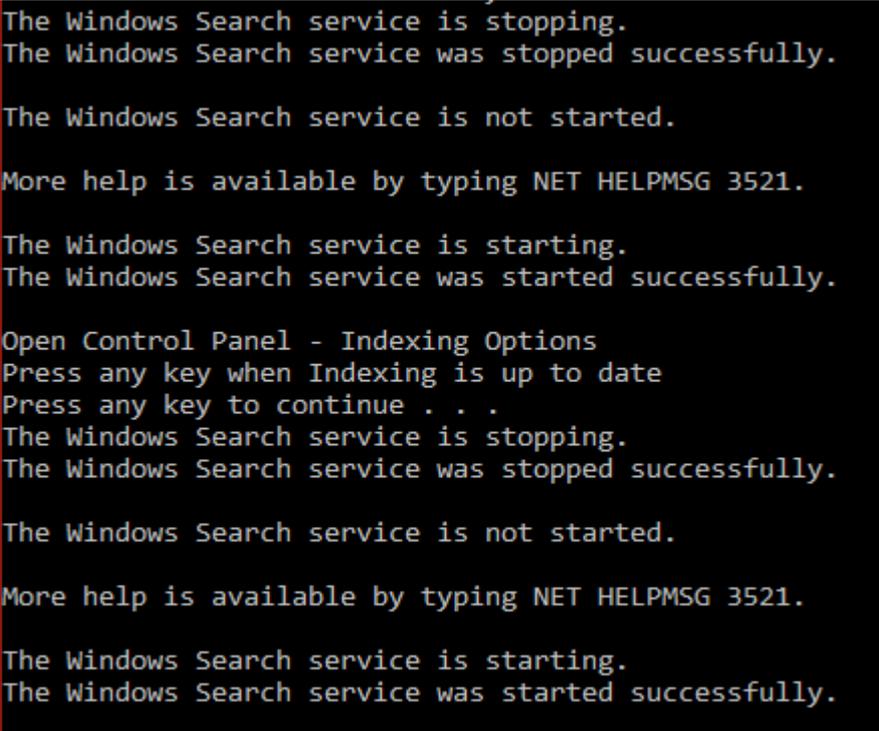
```
Net Stop Wsearch
Net Start Wsearch

Echo Open Control Panel | Indexing Options
Control /name Microsoft.IndexingOptions

Echo Press any key when Indexing is complete
Pause

Regedit /S Indexing-Normal.reg
Net Stop Wsearch
Net Stop Wsearch
Net Start Wsearch
```

Here's how a normal run of the batch file looks like. The second NET STOP commands weren't needed in this case.



```
The Windows Search service is stopping.
The Windows Search service was stopped successfully.

The Windows Search service is not started.

More help is available by typing NET HELPMSG 3521.

The Windows Search service is starting.
The Windows Search service was started successfully.

Open Control Panel - Indexing Options
Press any key when Indexing is up to date
Press any key to continue . . .
The Windows Search service is stopping.
The Windows Search service was stopped successfully.

The Windows Search service is not started.

More help is available by typing NET HELPMSG 3521.

The Windows Search service is starting.
The Windows Search service was started successfully.
```

DOWNLOAD

[Download](#) from the Office-Watch.com web site a small package with all the above files ready for you to try. The three Batch files plus the two .reg files.

# ONEDRIVE

Windows 10 with OneDrive is a backward step and a considerable disappointment. OneDrive has been removed from Windows 10 settings entirely and demoted to limited options via a status bar icon. Placeholder files are gone. Worse, Metered Connections are no longer supported with OneDrive, leaving users open to massive data charges if they aren't careful.

These changes in OneDrive are mysterious and a notable move away from Microsoft's long stated intention of integrating OneDrive fully into Windows. OneDrive is installed with Windows 10 but largely operates like a separate program. It will be interesting to see how this develops. Possibly, Microsoft is trying to separate cloud storage service from Windows to avoid a repeat of the web browser legal actions.

## METERED CONNECTIONS

This is important so we've putting it near the top of the chapter on OneDrive.

---

*OneDrive in Windows 10 does NOT honor the Metered Connection setting.*

---

Metered Connections is a setting that can be applied to any Wifi or mobile broadband link. Any connection that you want to limit data usage on can be marked as a 'metered connection'.

If you're using a mobile broadband or other link with a MB or GB data limit, OneDrive could use that up in almost no time at all. Worse, you could be left with a large bill for excess usage.

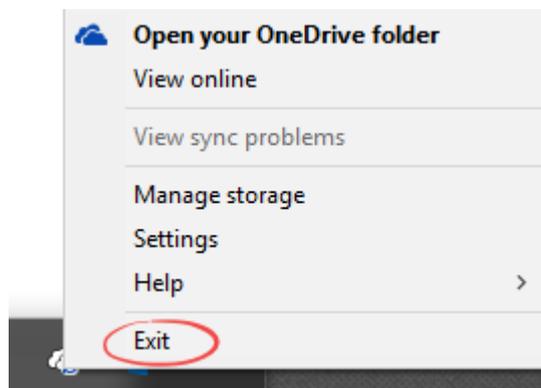
Unlike Windows 8, there is NO OneDrive options for using metered connections.

This is a major failing in Windows 10 and OneDrive, especially on mobile devices. There's no pause or stop syncing option on OneDrive!

## Windows 10 for Microsoft Office users

### OneDrive - Placeholders Gone

Your only choice is to shut down OneDrive entirely while on a Metered Connection.



## CAPACITY

At minimum, with a Microsoft Account, you're given 5GB of OneDrive space (in Nov. 2015 the free accounts were reduced from 15GB or more).

Office 365 'subscribers' get 1TB (Terabyte = 1,000GB) per account of OneDrive storage. This was reduced from 'unlimited' in Nov 2015.

Microsoft pushes Windows users to put everything on OneDrive and you can certainly do that up to the storage limit. But be aware of the privacy and security risks that cloud storage can cause.

Our practice and recommendation is to use cloud storage where necessary for sharing and moving files between people or just your own devices. But keep most files, images and videos safely on your computer with backups.

## SKYDRIVE IS THE OLD NAME

Due to a court case, Microsoft was forced to change the SkyDrive name to **OneDrive**. You'll still see the SkyDrive name in places but it's just a name change, nothing more.

If you've upgraded from past Windows, it's quite possible that your OneDrive storage is actually saved in a folder called 'SkyDrive'. Even in Windows 10 there's web links using the 'Skydrive' name. Just ignore the old name, things will work fine.

## PLACEHOLDERS GONE

In Windows 8.1 Microsoft introduced 'placeholder' files. These were markers in explorer that showed details of files that were stored in Onedrive online but not copied to the local computer.

That's now dropped in Windows 10 with no effective replacement.

## Windows 10 for Microsoft Office users

### OneDrive - Setup

The Available offline / online-only indicator has also been dropped.

 DSCF9173.JPG	14-Oct-07 5:18 AM	Available offline
 DSCF9191.JPG	18-Oct-07 7:46 PM	Online-only
 DSCF9200.JPG	18-Oct-07 4:22 AM	Available offline

You have to check the OneDrive taskbar icon to see if synchronization is up to date.

It's possible to choose folders (not files) to sync with your computer. OneDrive folders not synced to your computer don't show up at all in Explorer.

## SETUP

If you login to Windows 10 with a Microsoft account, OneDrive is no longer enabled automatically. When you first access the OneDrive folder you'll be asked to login to your Microsoft account (even if it's the same as the Windows login).

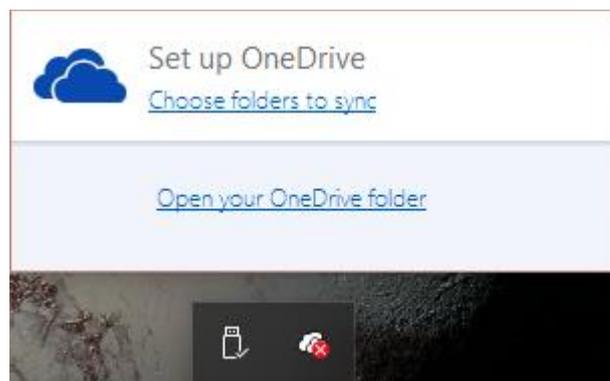
For a Windows 10 upgrade, OneDrive will use your previous settings. In particular, which folders are synced.

With a 'clean' Windows 10 install, OneDrive is enabled if you use a login linked to a Microsoft account. But it won't start syncing until you select which folders to sync. You can choose to sync all (recommended if you have plenty of disk space) or only selected folders.

Go to the status bar and choose OneDrive



Then 'Choose folders to sync'.



# Windows 10 for Microsoft Office users

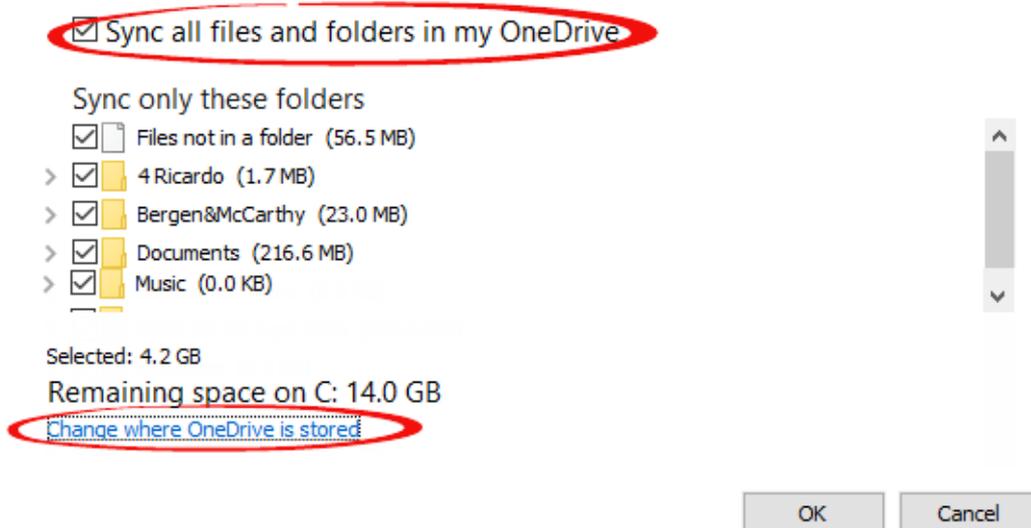
## OneDrive - Settings

Microsoft OneDrive



### Finish setting up OneDrive

The files you sync will take up space on this PC. You can download only some folders, or sync files on another drive on this PC.



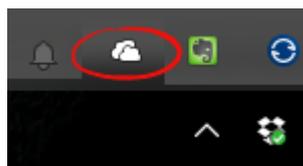
This is also a convenient and best time to choose where the OneDrive files are stored. You may want to choose another hard drive with larger capacity. To do that choose 'Change where OneDrive is stored' and select another location.

There is also a OneDrive Modern app. At this time, it has even less features than the main OneDrive program we describe in this chapter. The OneDrive app may be improved in the future but, for the moment, stick with the desktop program.

## SETTINGS

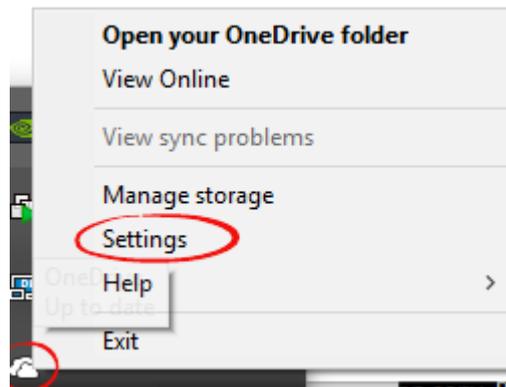
Curiously, there are no OneDrive parts in the Win 10 Settings, as there were in Windows 8.1.

All the OneDrive settings are now on the taskbar. Look for the little OneDrive icon and right-click.



## Windows 10 for Microsoft Office users

### OneDrive - Settings



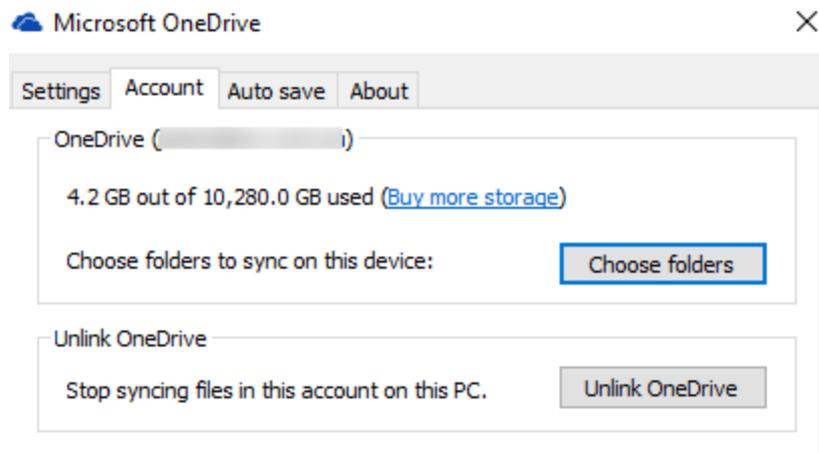
**Open your OneDrive folder** – opens Explorer to the OneDrive folders.

**View Online** and **Manage storage** open web pages on the OneDrive site.

**Settings** opens a very traditional dialog box with tabs.

### ACCOUNT

Here's where you can see how much OneDrive space you've used and available.



There is also an option to link both a personal and business OneDrive account on the one computer.

### SELECTIVE SYNC

**Choose folders to sync on this device** – aka 'selective sync'. By default, all your OneDrive folders are synced to your computer. That's great for a desktop computer or laptop with plenty of space. To save space on your local hard drive, click 'Choose folders'. Uncheck the box for any folder you don't want saved on your computer. Or check it again to sync locally.

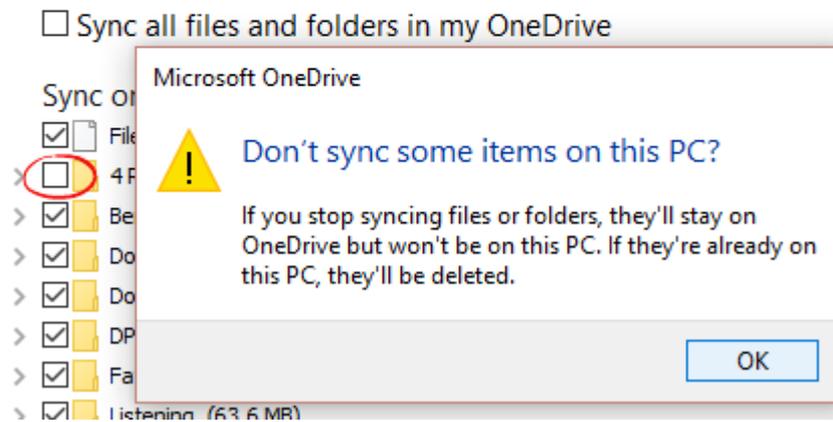
# Windows 10 for Microsoft Office users

## OneDrive - Settings

Microsoft OneDrive

### Sync your OneDrive files to this PC

The files you sync will take up space on this PC

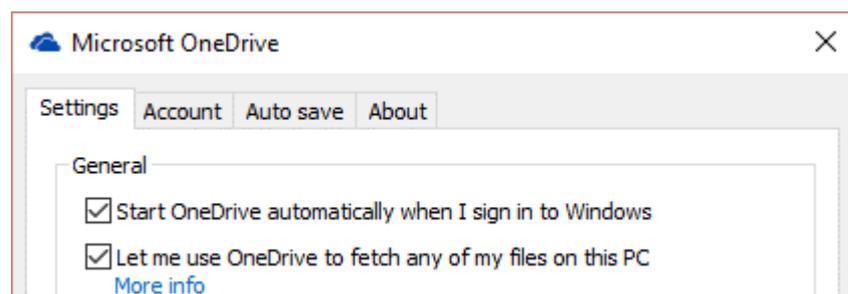


*Note the warning that de-selected folders are removed from the local computer.*

#### UNLINK

Use the 'Unlink OneDrive' to stop syncing with your online storage completely.

#### SETTINGS



**Start OneDrive automatically when I sign in to Windows** – defaults on. It's usually best to let OneDrive sync in the background.

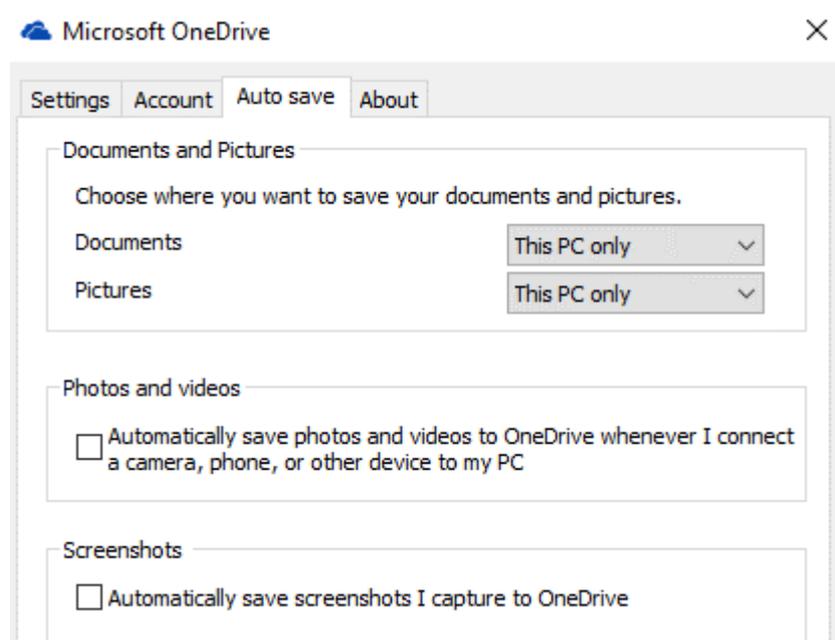
*Warning: OneDrive will work on any Internet connection to the computer including anything tagged as a 'Metered Connection'.*

## Windows 10 for Microsoft Office users

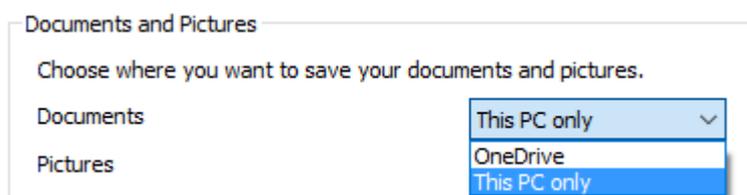
### OneDrive - Settings

**Let me use OneDrive to fetch any of my files on this PC** – lets you go to your OneDrive account on the web site then copy files from the computer (assuming it's on and connected).

#### AUTO SAVE



**Documents and Pictures** – choose whether documents or images can be saved by default to the computer or to OneDrive.



**Photos and Videos** – this is the 'camera roll' option to automatically copy new images to OneDrive

**Screenshots** – similar to the 'camera roll' feature. Windows 10 screen shots can be copied to OneDrive.

#### DEFAULT SAVE LOCATIONS

Microsoft is very sneaky about pushing OneDrive on their customers, whether they like it or not.

**Save documents to OneDrive by default** – this is turned ON by default.

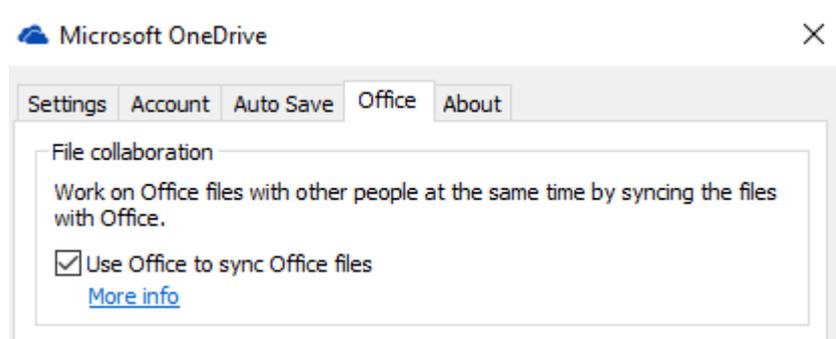
That might suit you, then again you might not want your private documents saved on a cloud service where any hacker or NSA operative can have a look.

## Windows 10 for Microsoft Office users

### OneDrive - Settings

There is a separate OneDrive Modern app which opens up when you click on 'See my files on OneDrive'.

### OFFICE



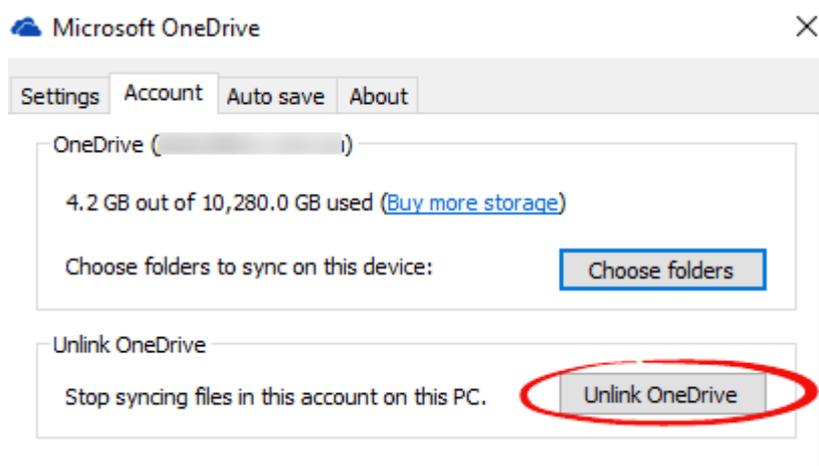
**Use Office to sync Office files** – allows automatic merges of the changes you and others make to a document. This allows the OneDrive app to work with the document collaboration features in Office 2013 and Office 2016.

### CHANGE ONEDRIVE FOLDER

Another Windows 10 / OneDrive curiosity is the lack of an option for changing the folder where OneDrive files are saved. It's available for other types of Windows folders (Documents, Music etc.) but not OneDrive in Windows 10. This is yet another OneDrive feature dropped from Windows 10.

The workaround is to Unlink OneDrive then restart it with the same account but choose a new save location. Nasty but that's what Microsoft has left us.

Go to OneDrive | Settings | About and choose 'Unlink OneDrive'.



Once you unlink, OneDrive will show the setup wizard again for you to start over again.

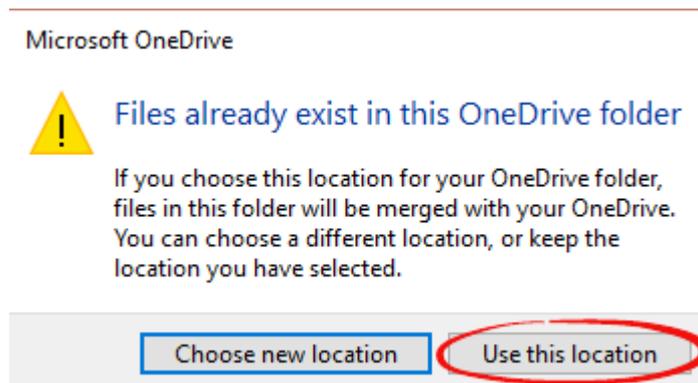
## Windows 10 for Microsoft Office users

### OneDrive - Settings

While that wizard is open. Switch to File Explorer. Copy all the OneDrive files/folders to the new location. Select the OneDrive folder, right-click and choose Copy. Copy, don't move, just in case something goes wrong.

Then return to the OneDrive setup. Go through the options, choose which folders to sync and the new save location (where you copied your OneDrive files to).

When sync starts you'll get this warning.



Choose 'Use this location' to proceed.

OneDrive should resync to the new location and accept the copied files as being the same as the originals. This saves time and bandwidth syncing files you already have.

Once you're sure the new setup and location is working properly. You can delete the 'old' OneDrive folder.

### CAMERA ROLL

Camera Roll will automatically upload photos and videos in the 'Camera Roll' folder to OneDrive. This is more useful on phones or tablets because it puts photos taken on those devices quickly onto your desktop or laptop computer.

What's been dropped from OneDrive in Windows 10 are the 'quality' options to upload images at a low quality. Also the option to stop video uploads has been dropped.

The Windows 10 / OneDrive 'all or nothing' and controlled from OneDrive | Settings | Auto Save.

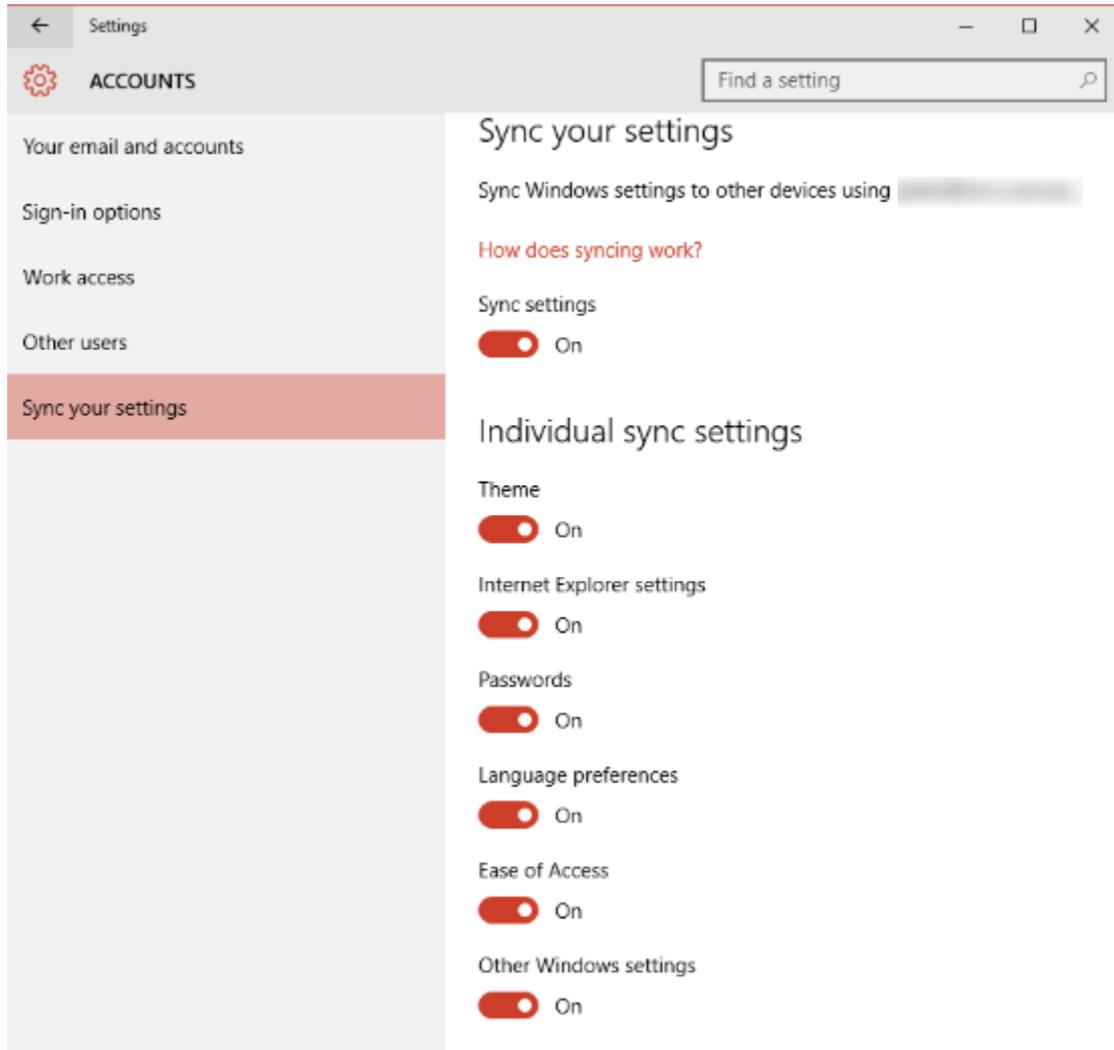
### SYNC SETTINGS

OneDrive doesn't just save files, it can also save your Windows settings and allow them to follow you to another computer. All you have to do is login to Windows with the same Microsoft account and your settings will be copied down from OneDrive and implemented on the new machines. It's a great time saver.

## Windows 10 for Microsoft Office users

### OneDrive - In Explorer

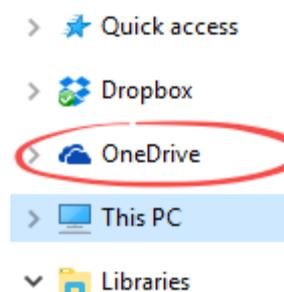
In Windows 10, these settings have moved from OneDrive to general Settings | Account | Sync your settings.



**Sync settings**– a general on/off switch for this feature.

## IN EXPLORER

OneDrive has its own special place in the Explorer Navigation Pane



For any program, simply save the file to the OneDrive folder and it will be copied to your OneDrive account online.

## Windows 10 for Microsoft Office users

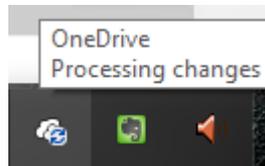
### OneDrive - What's going on?

For small files, this happens in seconds; longer for larger files. The speed of the Internet connection is the limiting factor. In most cases uploads to OneDrive will take a lot longer than downloads.

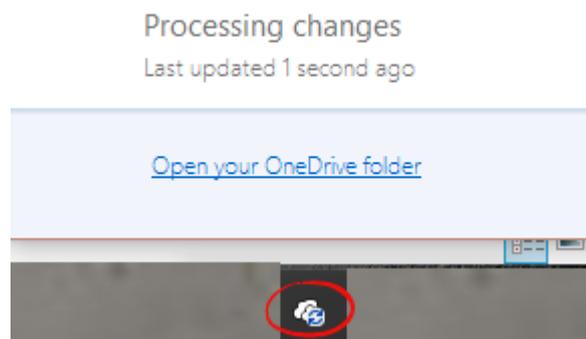
Office 2013/2016 doesn't normally use this feature. When you open or save a file to OneDrive from Office 2013/2016, the program saves directly to the cloud service. Of course, a copy appears in the local OneDrive folder as well.

## WHAT'S GOING ON?

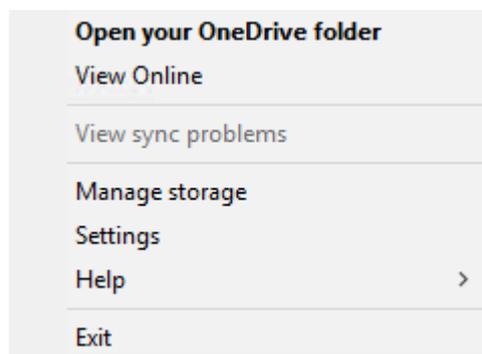
OneDrive synchronization in Windows has a taskbar icon to show the current upload/download status. Hover your mouse over it to see some more detail.



Click on the icon to see a little more information. The 'Pause' and 'Sync Now' options from Windows 8.1 have been dropped.



Right-click on the OneDrive icon to see some options. We've covered this menu in detail [above](#).



## Windows 10 for Microsoft Office users

OneDrive - Disable OneDrive entirely

### DISABLE ONEDRIVE ENTIRELY

You can completely disable OneDrive in Windows. Given Microsoft's commercial interest in forcing OneDrive use, it's not a simple thing to do, but it is possible.

#### THE NUCLEAR OPTION?

Before disabling OneDrive consider if it's necessary to cut it off entirely?

Microsoft does ram OneDrive in the face of Windows users, whether they like it or not. Making OneDrive the default save location for files is particularly aggressive and ignores the privacy concerns of customers.

On the other hand, OneDrive has a place. It's particularly good for accessing and sharing Microsoft Office documents. A document on OneDrive can be opened from almost any browser and shared with other people.

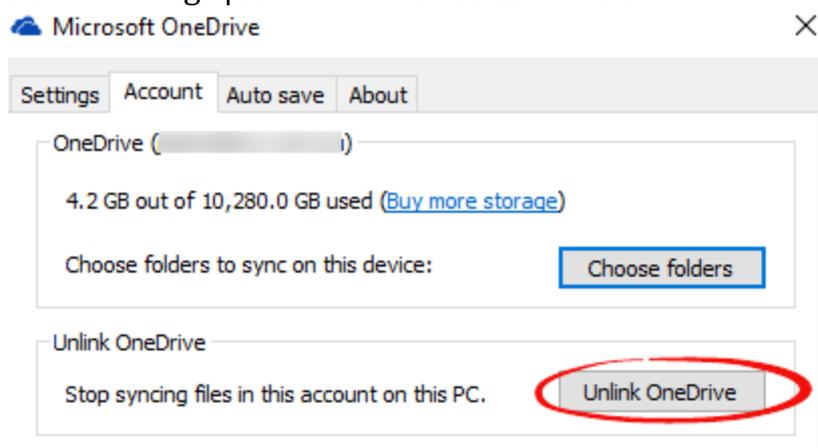
Many people use OneDrive in a limited way. They put only a few documents in the cloud like ones to share or important documents

If you have an Office 365 rental/subscription, it comes with a Terabyte of OneDrive storage. That much space can be useful even if it's not your primary storage location.

#### FULLY DISABLE

##### WINDOWS 10 HOME

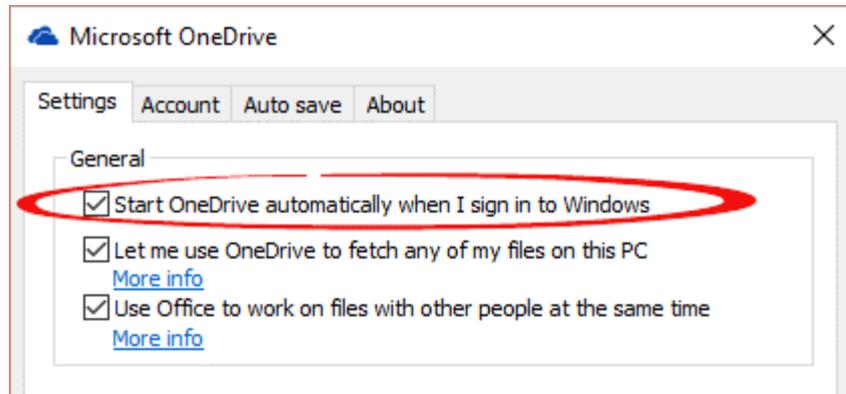
In Windows 10 Home you can stop OneDrive from starting with Windows. Go to OneDrive Settings | Account and Unlink OneDrive.



## Windows 10 for Microsoft Office users

### OneDrive - Disable OneDrive entirely

Ignore the OneDrive wizard that will appear. Go back to the OneDrive settings and on the Settings tab turn off OneDrive starting automatically with Windows.



That stops OneDrive but it'll still show up on the Explorer navigation pane.

To remove OneDrive from there you have to [edit the registry](#).

### 32-bit

HKEY\_CLASSES\_ROOT\CLSID\{018D5C66-4533-4307-9B53-224DE2ED1FE6}\

DWORD value System.IsPinnedToNameSpaceTree

Change from default 1 to 0,

### 64-bit

HKEY\_CLASSES\_ROOT\Wow6432Node\CLSID\{018D5C66-4533-4307-9B53-224DE2ED1FE6}\

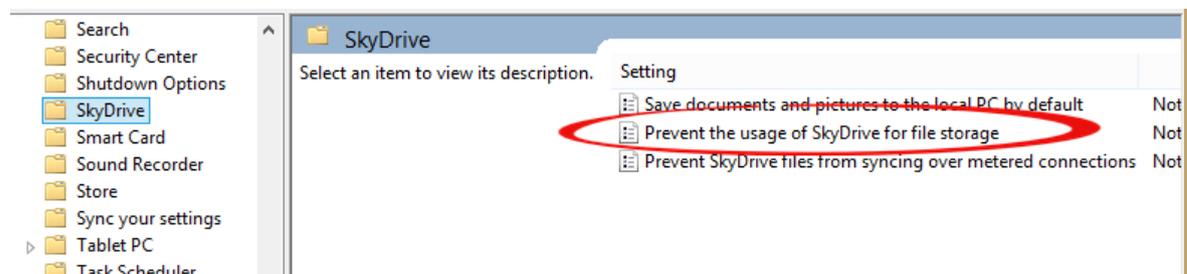
DWORD value System.IsPinnedToNameSpaceTree

Change from default 1 to 0,

WINDOWS 10 PROFESSIONAL, ENTERPRISE, AND EDUCATION

For the other versions of Windows 10, the option to disable OneDrive hasn't changed from Windows 8.

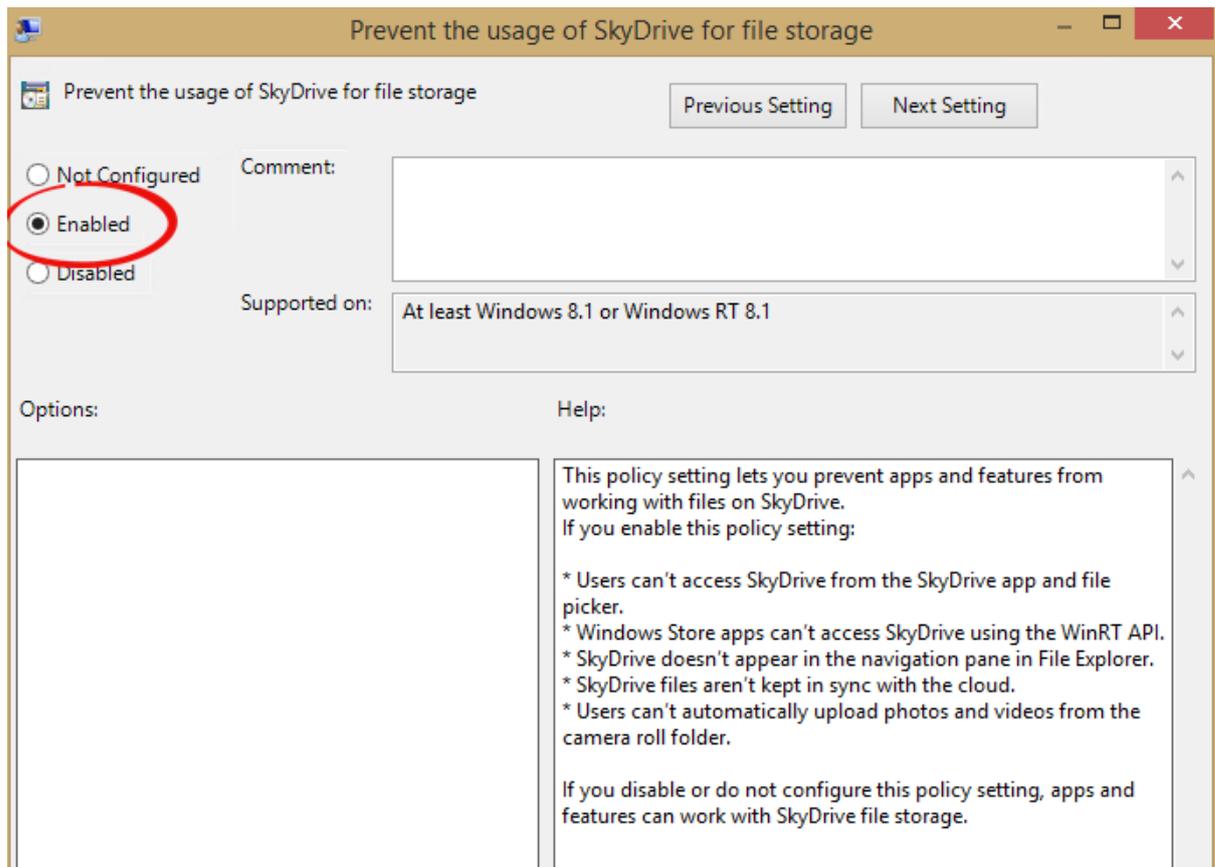
To disable OneDrive, use the Group Policy editor and go to Computer Configuration\Administrative Templates\Windows Components\OneDrive



## Windows 10 for Microsoft Office users

OneDrive - Sending / Sharing files with OneDrive

Choose 'Prevent the usage of OneDrive for file storage' then Enabled:



OneDrive will disappear from Explorers Navigation pane right away.

## SENDING / SHARING FILES WITH ONEDRIVE

There are many ways to send files that are too big for email (usually over 20MB). In this section we'll look at how to do that with OneDrive.

There are more options available for sharing with OneDrive, especially for Office documents (Word, Excel, PowerPoint and OneNote). Microsoft has 'Office Web Apps' which are web browser versions of Word, Excel, PowerPoint and OneNote. OneDrive can open Office documents directly in the browser to view, edit or download.

### ONE-OFF SEND

To send a file as a 'one-off' to one person or more is quite simple.

- Send files one at a time
- To one person or many
- Any person who gets the file link can download it
- Only the sender can modify or delete the file saved on Dropbox

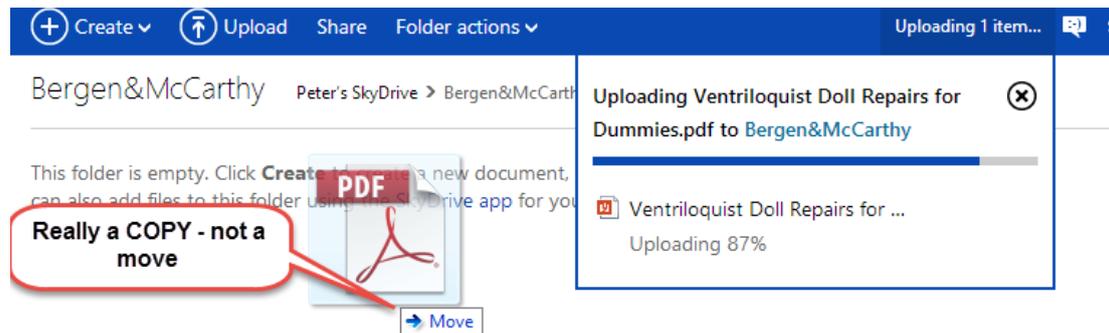
Upload the file to a OneDrive folder by copying it to your OneDrive folders in Windows Explorer. From there it will be uploaded in the background

## Windows 10 for Microsoft Office users

OneDrive - Sending / Sharing files with OneDrive

but it's hard to tell when that's completed and there's no way to speed the sync.

Often you'll want to upload more quickly so you can send the file link as soon as possible. To do that, open up your OneDrive account in a web page. From there you can 'drag and drop' a file from Explorer over the OneDrive web page to start an upload. This upload will go as fast as your Internet link will allow.

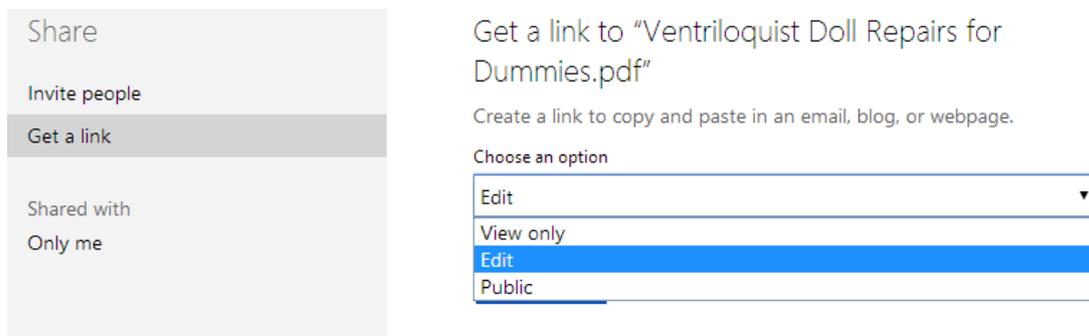


When you drag over the OneDrive web page the cursor icon may show as 'Move' but it's really copying the file.

When the file is uploaded, go to the OneDrive web site and locate the file.

Select the file then choose 'Share' from the top menu bar.

OneDrive will offer to email the link for you using the 'Invite people' option, but you can ignore that by choosing 'Get a Link'.



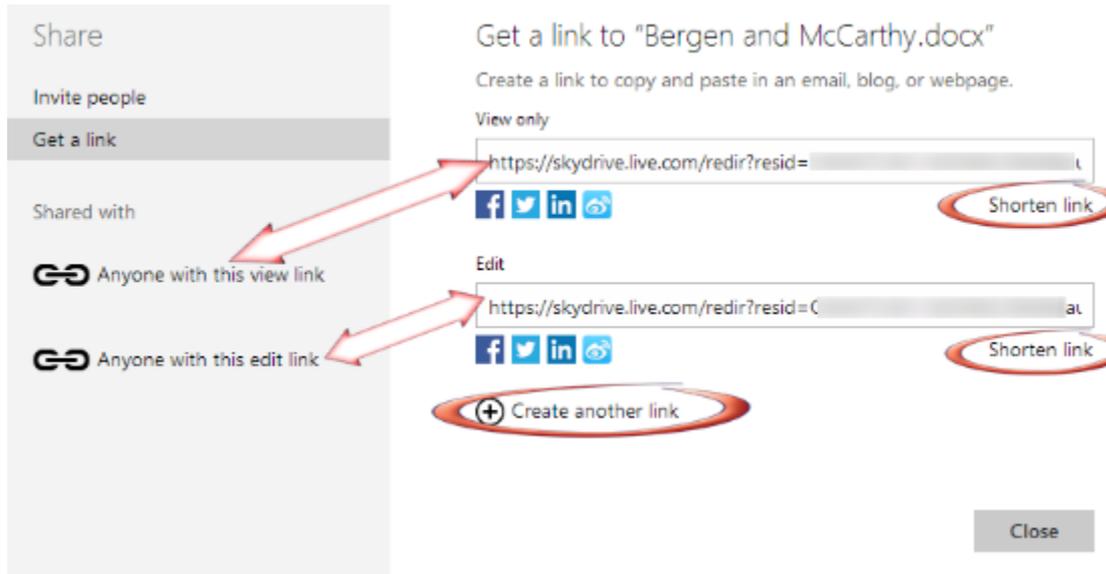
This is one place where OneDrive is better than Dropbox. You can choose to share a file in three different ways:

- **View only** - really should be called 'Read only' because anyone with the link can download the file as well as view it online (depending on the file type).
- **Edit** - anyone with this link can edit the file online (depending on file type). An Office document can be downloaded and edited in Office software after login with a Microsoft account. Other types of file can be downloaded without login.
- **Public** - everyone can view / download the file.

You can have three different links for a file, one for each share type:

# Windows 10 for Microsoft Office users

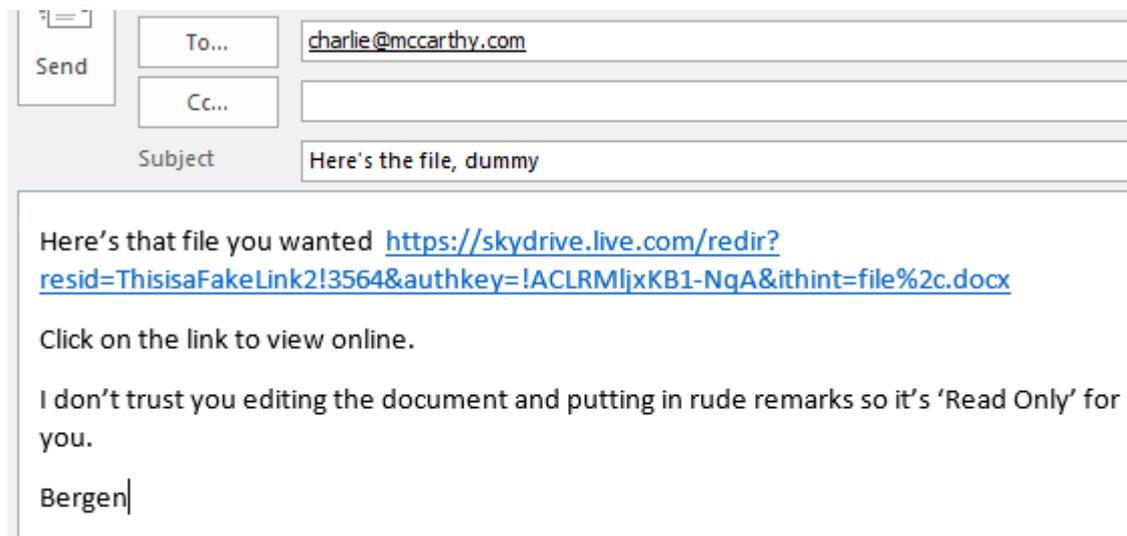
## OneDrive - Sending / Sharing files with OneDrive



Click on 'Shorten Link' to get a shorter version of the same link for use on social media. 'Create another link' is available to make the other type of link.

'Get Link' will copy a web link to your computer clipboard. Paste that link into your own email.

The link will look a bit like this when pasted:



Note: Anyone who gets that link can download the file, there is no login or security required.

The sender (owner of the OneDrive account) has no direct way of knowing whether the file has been downloaded, or by whom. However direct edits to Office documents are tracked.

For Office documents, the receiver opens the document in a browser window like this:

# Windows 10 for Microsoft Office users

## OneDrive - Sending / Sharing files with OneDrive



The File menu has options to Translate, Save As (i.e. Download), Print and Share.

'Edit in Browser' opens the Word Web App in the same browser window. From there you can open the same document in Word (assuming you have a compatible version of Word on that computer).

### EXCHANGING FILES

Here's one option for someone you regularly send or exchange files with.

- Exchange many files
- Between two people
- A free Microsoft account login is needed for some features
- Both people can modify or delete the files saved on the OneDrive folder

In short, create an online folder and share it with another person. Add files to the folder. The receiver gets the file and saves it to their local computer then deletes the file from the shared folder.

At the end, the file is gone from online storage so the sender knows the receiver has it. The cloud storage space is free for other files.

The sender simply copies the file to the shared folder and, maybe, lets the receiver know that a file is coming.

The receiver moves the file to their computer, leaving the cloud storage free for more files.

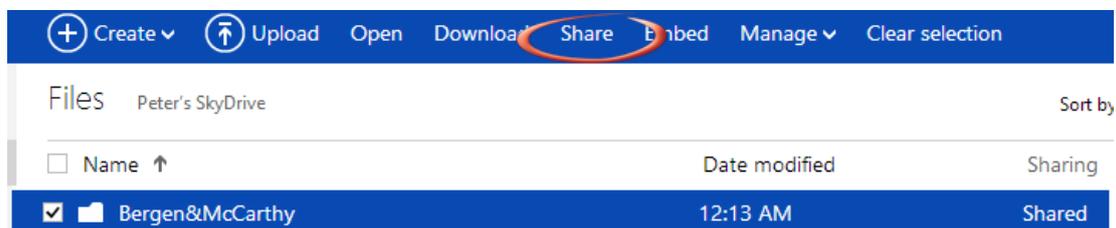
The same shared folder can be used to send files in either direction between two people because both have write permissions for the shared folder.

## Windows 10 for Microsoft Office users

OneDrive - Sending / Sharing files with OneDrive

### SETUP

Create a shared folder on OneDrive from your account on the web site. Choose the existing folder and click 'Share' :



The sharing options for folders are the same as for single files, as described above. Choose from View, Edit or Public.

To send files one-way choose View. To exchange files both-ways choose Edit.

### SENDING A FILE

Simply copy a file to the shared folder. Once uploaded it will appear in the cloud storage and be available to the other person you have shared the folder with.

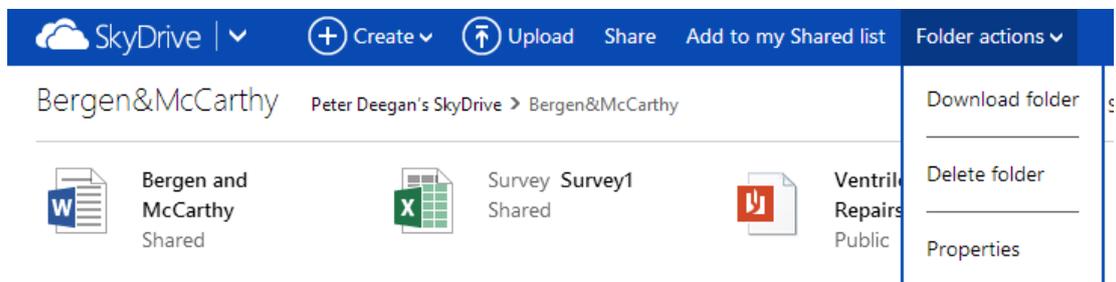
You upload a file using the web interface (the upload button or 'drag and drop').

If you have the OneDrive software installed (or Windows 8.1), simply copy the file to the matching shared folder on your computer. The software will upload the file to cloud storage automatically and in the background.

Unlike Dropbox, in OneDrive the receiver of a shared folder link does not have to 'accept' an invitation to join a shared folder.

### RECEIVING THE FILE/S

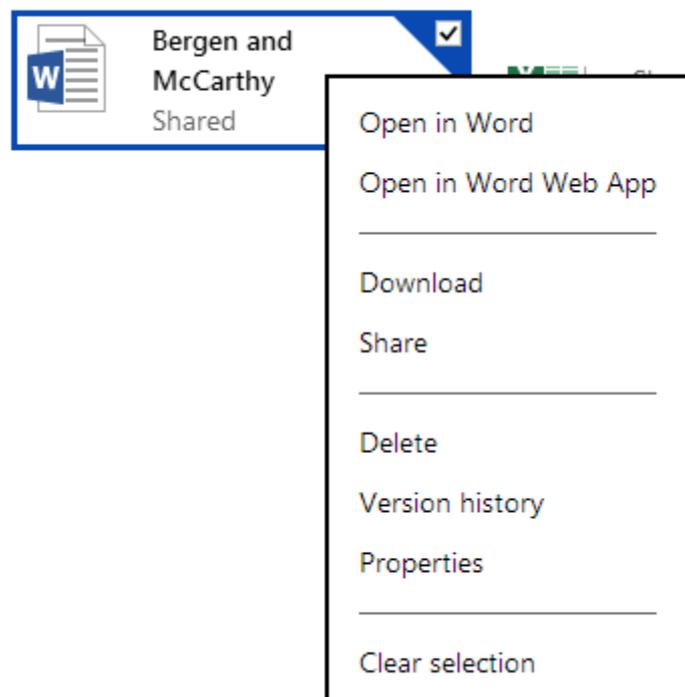
The person getting the web link opens up OneDrive in their web browser. Here's an example of what they'll see for a folder shared with Edit permissions



## Windows 10 for Microsoft Office users

OneDrive - Sending / Sharing files with OneDrive

Right-click on a file to see more options:



When the file is saved in cloud storage, the receiver can get it in various ways.

They can use the link you send them, choose the file/s and download manually. Individual files can be downloaded or the entire folder (Folder Actions | Download folder)

After downloading, delete the copy of the file in the cloud.

Deleting / moving the file from the shared folder tells the sender you have it and makes the space available for other files in cloud storage.

The same folder can be used for sending files both ways if shared with 'Edit' permissions. Each person looks in the shared folder and moves any file they didn't send themselves.

'Add to my Shared list' means the receiver can see that folder in their own OneDrive account under the Shared tab.

### SHARING / COLLABORATION OF DOCUMENTS WITH ONEDRIVE

OneDrive is far better for sharing and collaboration of documents (Word, Excel, PowerPoint or OneNote) because you can edit documents directly in the browser or on your computer with Office 2013 or Office 2016.

Microsoft's own cloud storage allows simultaneous collaboration – in other words more than one person can open and edit a document at the same time.

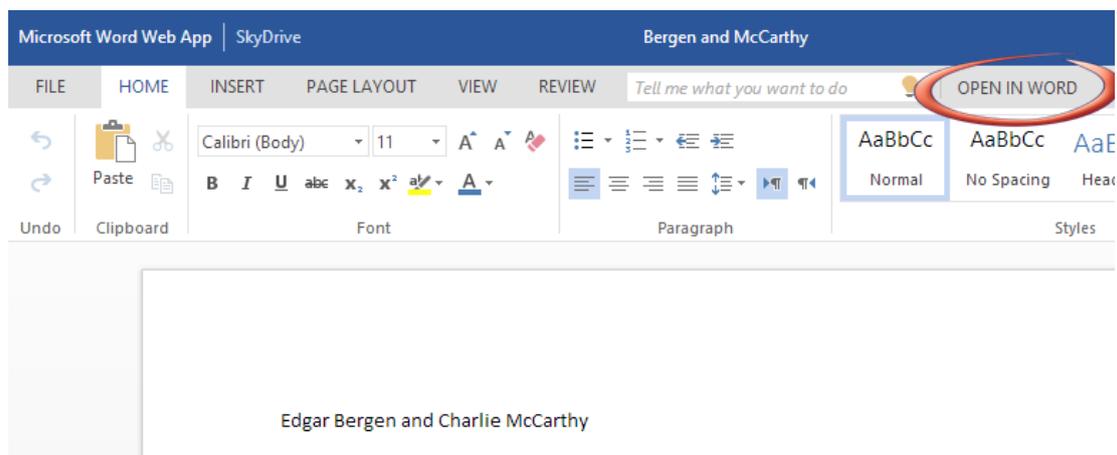
Anyone with Edit access to a document or folder can edit a document online. Click on the document in the browser display to view it.

## Windows 10 for Microsoft Office users

OneDrive - Sending / Sharing files with OneDrive



Click on 'Edit in Browser' (assuming you have 'Edit' access to the document)



If the computer has Office 2013/2016 click on 'Open in Word' to open the document directly to open up the document in the full Word software. Changes you make in Word should be automatically synced to OneDrive. After opening in an Office 2013/2016 program, the document should appear in the recently used file list and opened faster on later visits.

### MORE THAN TWO PEOPLE

You can fully share a folder with more than two people but it can be difficult to know when to delete the online copy of a file (i.e. when everyone has downloaded the file). As one Office-Watch reader says "I've been a member of such a large group where members delete or move files from their folder, and others wonder why their files are being deleted, which can be quite annoying."

But there is an alternative – you can share an entire folder with 'View' access. On the OneDrive web site, select a folder then choose 'Share' | Get a Link | select the View option.

Similar to getting a link for a single file, you can email the folder link from OneDrive or 'Get a Link' and paste it into your own email.

## Windows 10 for Microsoft Office users

### OneDrive - File Recovery

However, there are downsides to this approach. The folder link can be used by anyone who gets it without login, which makes it hard to control access.

### NOTIFYING THE RECEIVER

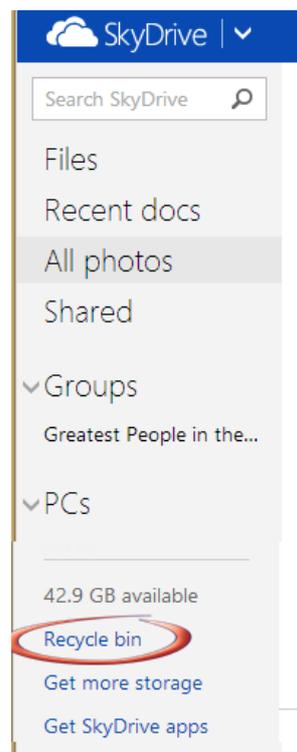
If you put a file up on a OneDrive shared folder, how does anyone know it's there?

Obviously you can tell them, by email, phone or even face-to-face! Or they can check the shared folder for anything new.

Sadly, OneDrive has none of the notification options that are so useful in Dropbox. There's no equivalent of the Events list, let alone an RSS feed.

## FILE RECOVERY

OneDrive retains deleted files for 30 days or until the Recycle Bin exceeds 10% of your allowed storage space. This feature works much the same way as the Recycle Bin in Windows and it's called 'Recycle Bin' down on the bottom left of your OneDrive account web page.



Select a file/s in the Recycle Bin and choose to:

**Restore** – to original folder

**Delete** – meaning Permanently Delete (or as permanently as is possible with cloud storage)

**Properties** – view details of the file

## CAMERA ROLL ON OTHER DEVICES

One of the features of OneDrive is the 'Camera Roll' or 'Camera Backup', it's a simple and automatic way to copy photos between some devices.

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*Is it 'Camera Roll' or 'Camera Backup'? Microsoft uses both terms, depending on where you look.*

---

Most commonly from your smartphone (Apple or Windows) to your computer. It works automatically and often takes only seconds from taking the photo to it appearing on your computer.

It saves you have to bother copying photos from your smartphone because they appear on your Windows or Mac computer/tablet automatically. Take a photo, then look in the Pictures | Camera Roll folder to insert the image into an Office document or email. Camera Roll also works for 'screen shots' taken on devices which makes it invaluable for technical writers.

We prefer Dropbox Camera Upload because its 'agnostic', meaning it works across a mix of Windows, Mac, Apple and Android devices.

Currently the OneDrive app for Android doesn't have the Camera Roll feature.

### SETUP

Open up the OneDrive app on your device and look for the Camera Roll option.

## Windows 10 for Microsoft Office users

OneDrive - Other Cloud Services

On iOS devices it's under Settings | Camera Backup



As you can see, there are options to:

- Turn Camera Backup on/off
- Resize photos
- Upload using Wifi only or mobile broadband when available
- Choose to upload photos or photos & videos.

On a computer with OneDrive software installed, look for the Picture | Camera Roll folder. In that folder you'll see all the photos taken on linked devices.

Note: if you have more than one device connected to the same OneDrive account (e.g. members of a family) then the one Camera Roll folder will have photos/videos from all devices.

You can share a Camera Roll folder with other people, just like any other OneDrive folder.

## OTHER CLOUD SERVICES

Happily, you're not locked into using OneDrive. You can disable it (see above), ignore it or use OneDrive for only some cloud storage.

### MIX THEM UP!

You can definitely use more than one cloud storage service and many people do. We've seen people with four or more sync software services running on a single computer.

## Windows 10 for Microsoft Office users

### OneDrive - Other Cloud Services

Services like [DropBox](#), [Google Drive](#), [Box](#), [SugarSync](#) and [Cubby](#) all offer cloud storage with a variety of options. They benefit from being 'agnostic', meaning they are not tied to certain operating systems or devices – a problem with both Apple and Microsoft's offerings.

**OneDrive** storage is used for Office documents because of the online editing. Alternatively **Google Drive**.

**Dropbox** for photos and videos, taking advantage of the good support across different OS and devices, (notably [Camera Upload](#)). Since Dropbox is so popular it's the easiest option for sharing a folder to exchange files.

With all these products you can install software on Windows to synchronize files and folders with the cloud. You can add those folders to Libraries and therefore get backups and file versions through File History, unlike OneDrive.

[BTSync](#) – is a great way to synchronize folders between computers either on the same network or anywhere else on the Internet. There's no 'cloud' storage so there's no limits on capacity and less privacy concerns. Exchanges are done on a 'per folder' basis so you can share a single folder with other people you choose.

# Windows 10 for Microsoft Office users

OneDrive - Other Cloud Services

## LIBRARIES

Libraries aren't new in Windows 10 and nor have they changed much, but they are a powerful part of Windows that is underappreciated. Instead of a passing mention as part of a chapter on Explorer, we've decided to devote a separate chapter to Libraries.

Sure, Microsoft has hidden Libraries away a bit in Windows 8.1 & 10 but that's for their ongoing marketing strategy, not because Libraries are bad. Microsoft is downplaying Libraries because they now want people to save everything in OneDrive cloud storage.

---

*Libraries let you bring folders from different locations into a single searchable 'location'.*

---

People have related files that have to be stored in different locations but people would also like to see them 'together'. There are also files or folders that you want to save to a single folder but are related to more than one topic or project.

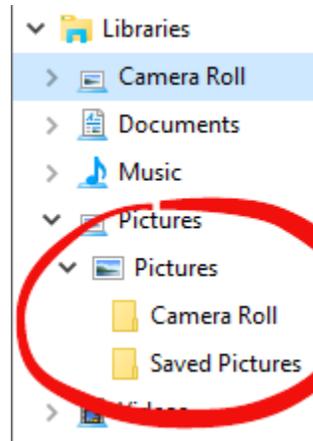
The default libraries for Documents, Music, Pictures, Videos and Camera Roll can give the false impression that libraries are only for grouping files of the same type.

Libraries can be used for more than that and are at their best when bringing together files of different types but related by subject or task.

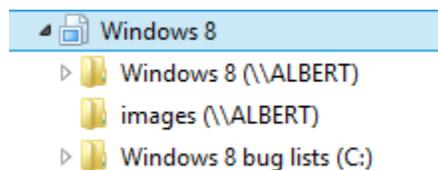
## Windows 10 for Microsoft Office users

### Libraries - Other Cloud Services

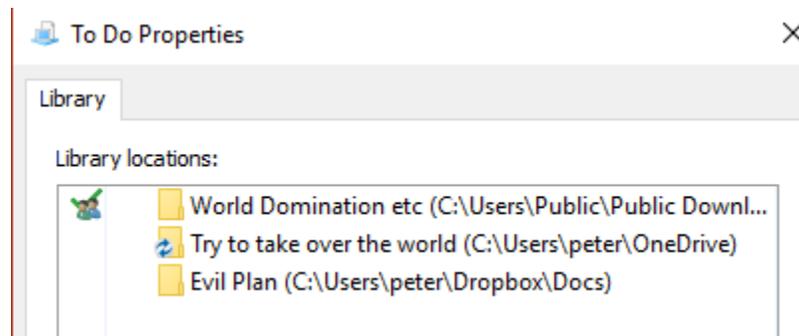
'Location' in quotes because no files are moved or copied – it's a virtual folder. For example, the 'Camera Roll' folder and the 'Saved Pictures' folder combine into a single view with the Pictures library.



Libraries can do a lot more than show just 'My' and 'Public' versions of the same folder. Here's a library that brings in folders from a network share and the C drive for a single topic.



Another use for Libraries is to combine a local folder and cloud storage folder on the same topic. Here's a Library with folders from the local drive, OneDrive and Dropbox.



There's a full example of making a [library by topic](#) later in this chapter.

Libraries haven't changed much (or at all) in Windows 10 except that Microsoft has tried to hide them from the general user.

## CHANGES IN WINDOWS 10

Just like Windows 8.1, you have to turn Libraries on from File Explorer.

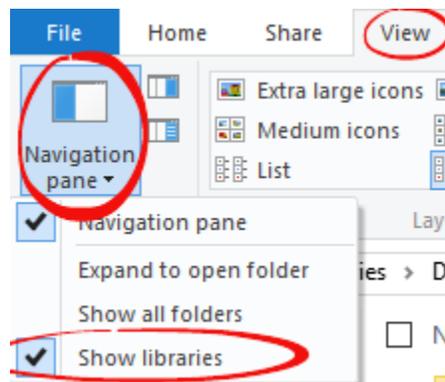
The 'Downloads' library has been dropped for clean installations and replaced with a 'Camera Roll' library.

Default libraries with a clean Windows 10 install have a single folder set. In the past default libraries would point to both the user folder and the Public folder (e.g. Music library would be set to the users Music folder and the Public Music folder).

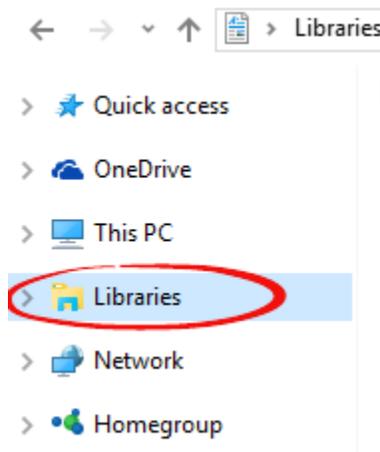
If you are migrating from Windows 7 or 8, your Libraries should be retained intact.

## SHOW LIBRARIES

Libraries are hidden by default but are easily restored to their rightful place. In Explorer go to View | Navigation Pane | Show Libraries

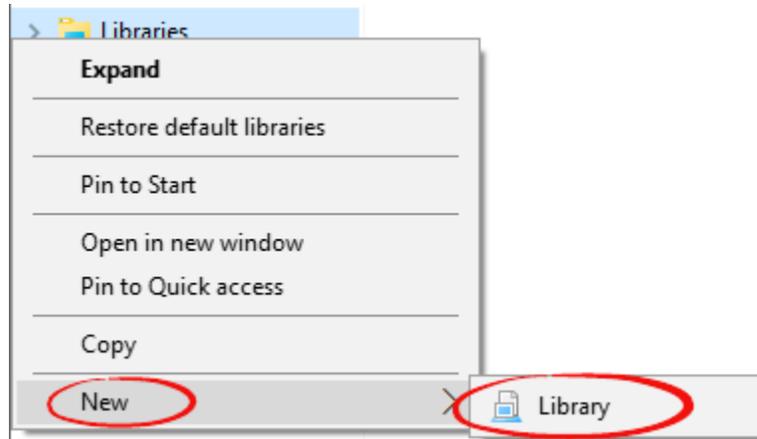


Now Libraries appear on the Navigation Pane.

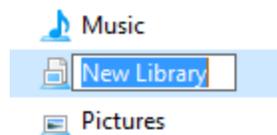


## MAKE A LIBRARY

To create a library right-click on the Libraries icon in the Navigation Bar and choose New | Library.

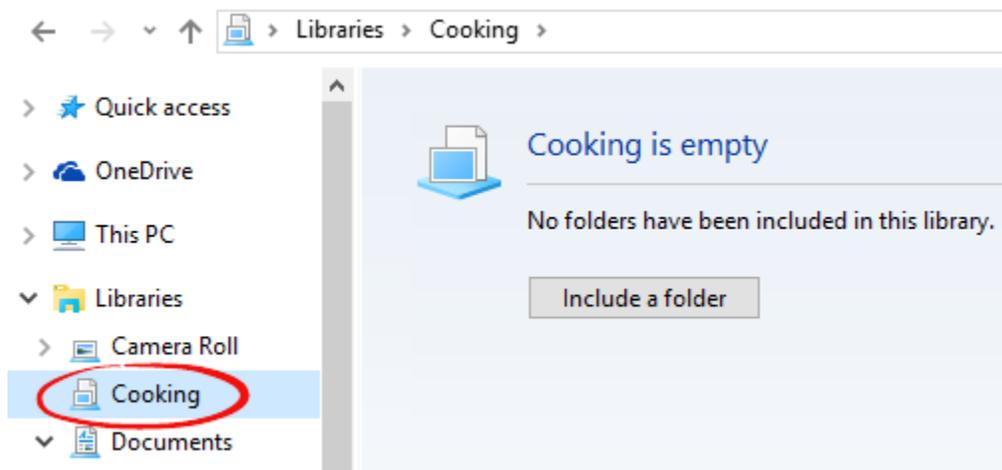


A new library will appear in the Library list ready for you to name.



A new library is created with the name of the selected folder and the folder linked to the new library.

## ADD A FOLDER



When there's no folders linked to the library there's an 'Include a folder' button to remind you.

You can add most folders visible to Windows into a library including from:

## Windows 10 for Microsoft Office users

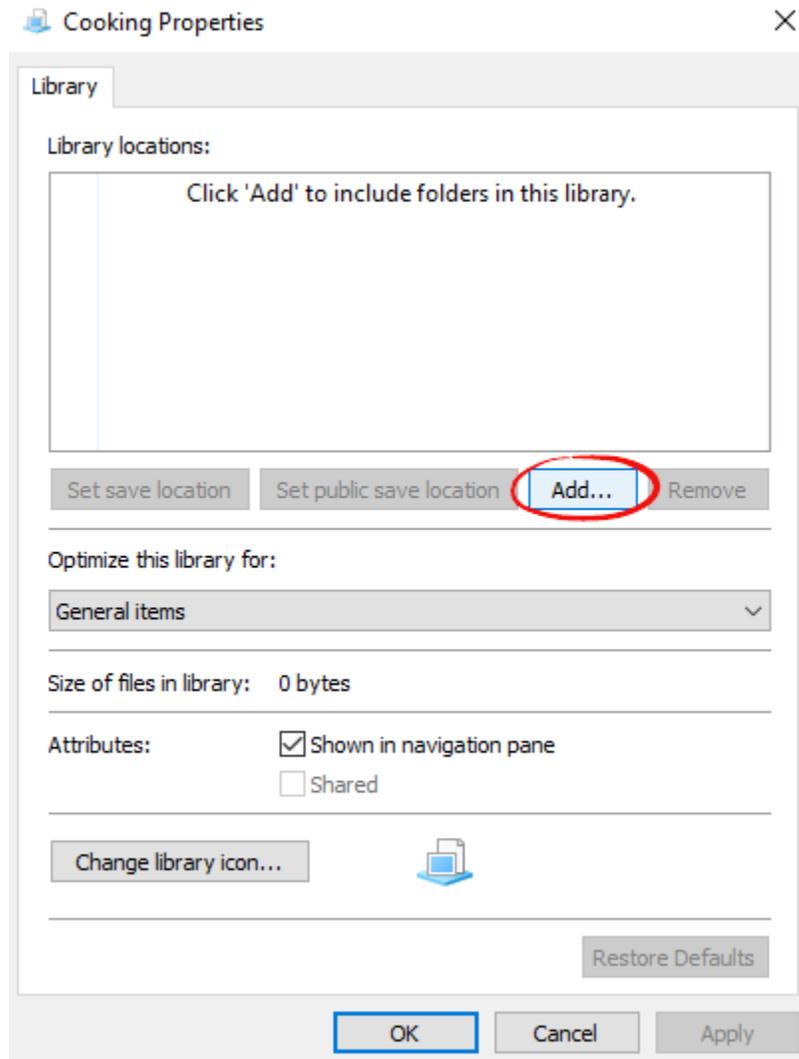
### Libraries - Add a folder

- Fixed drives on your computer
- Network shares e.g. [\\<server>](#) that are either indexed or made available offline on your computer.
- Some Portable drives via USB etc. If the drive appears under 'Hard Disk Drives' in Explorer's Computer view you can add it to a Library.
  - If it appears under 'Devices with Removable Storage' it cannot be added to a library.
- Some types of cloud storage can also be linked to a library, [see later in this chapter](#).

Some of the things that cannot be added to a library are: portable/removable storage, FTP or HTTP locations, CD/DVD/BluRay disks, individual files and saved searches.

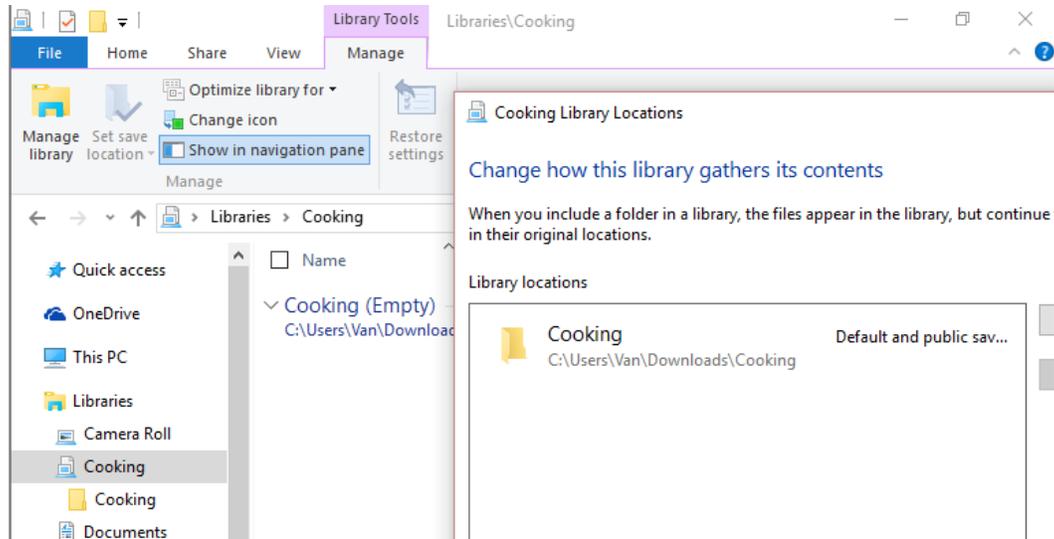
## Windows 10 for Microsoft Office users Libraries - Add a folder

Right-click on the library and choose Properties then click on 'Add'.



## Windows 10 for Microsoft Office users Libraries - Add a folder

On the Library ribbon there's a Manage library button that shows an abbreviated version of the Properties dialog which allows only Add and Remove folder.



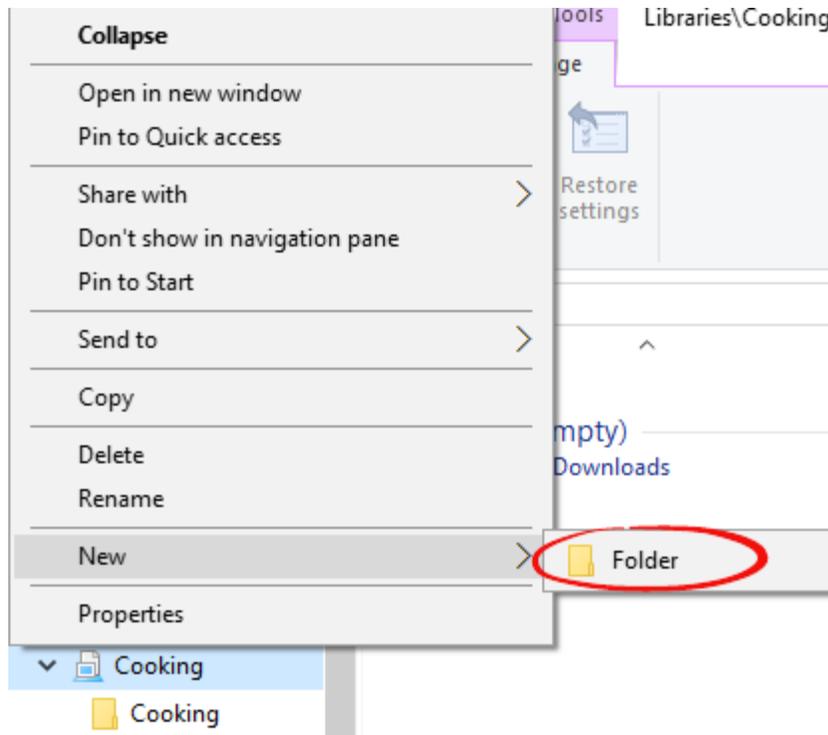
---

*Alert!*

*There is NO 'Add a folder' or 'Add a location' item when you right-click on a library heading in the navigation pane. No, we don't know why the massed Microsoft mind didn't put one in.*

*But there's a New / Folder option which misleads some people. This does NOT add an existing folder to the library, instead it makes a new folder in the default save location for the library.*

## Windows 10 for Microsoft Office users Libraries - Remove a folder



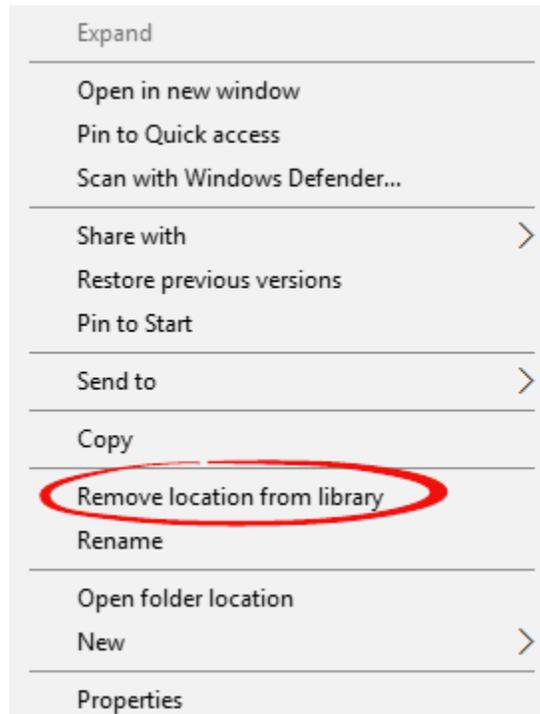
A folder or sub-folder can be in more than one Library. Folder contents will appear in any library you add it to.

### REMOVE A FOLDER

You can remove a folder from a Library using the Remove button in either the Properties or Manage dialogs mentioned above.

## Windows 10 for Microsoft Office users Libraries - Remove a folder

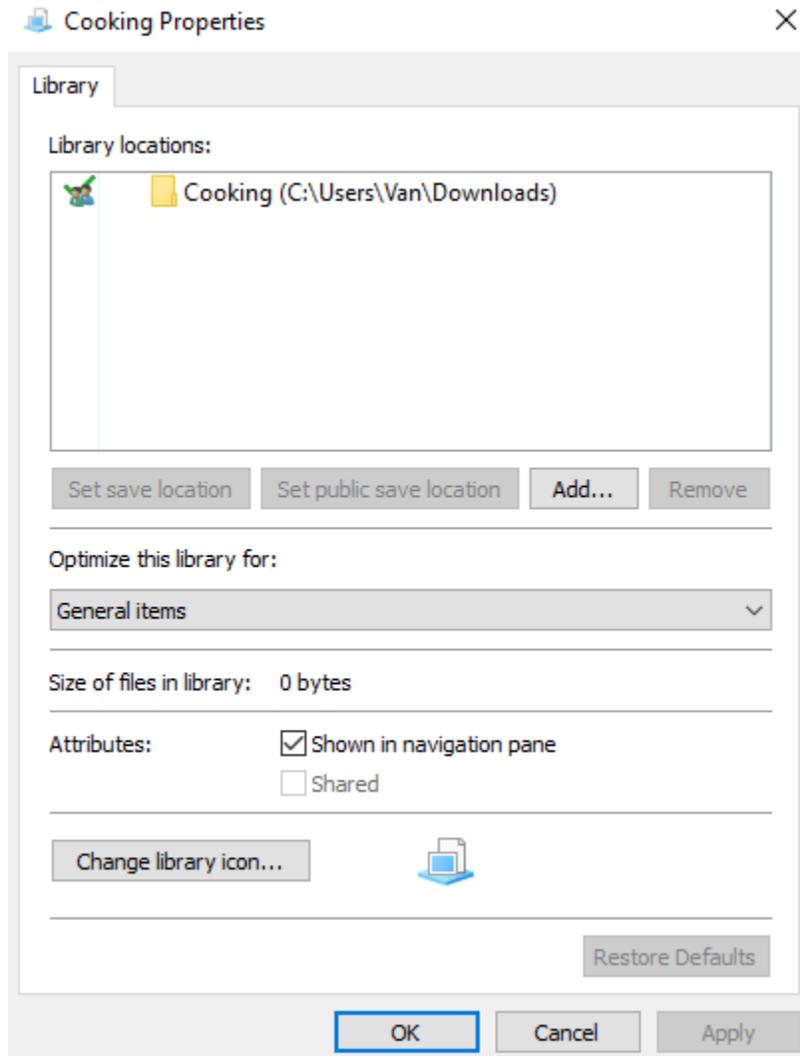
An easier alternative is right-click on the folder and choose 'Remove location from library'.



## Windows 10 for Microsoft Office users Libraries - Properties

### PROPERTIES

Let's look again at the Libraries properties dialog and cover the other options. There's only one small addition to Windows 10 (Change Library Icon).



#### SET SAVE LOCATION

If you save a file to the Library (as opposed to a specific folder in the library) Windows needs to know where to save the file. That's because the Library isn't a real folder in the usual way. This option tells Windows what physical folder to save files to if it's not sure.

'Set public save location' is available for folders that have sharing with write permission from other computers.

## Windows 10 for Microsoft Office users

### Libraries - Properties

#### OPTIMIZE THIS LIBRARY FOR:

As with any Windows folder, this configures the default display of the files in Explorer. It doesn't change the files or behavior in any way and the word 'optimize' implies some performance benefit that's not really there.

#### SHOWN IN NAVIGATION PANE

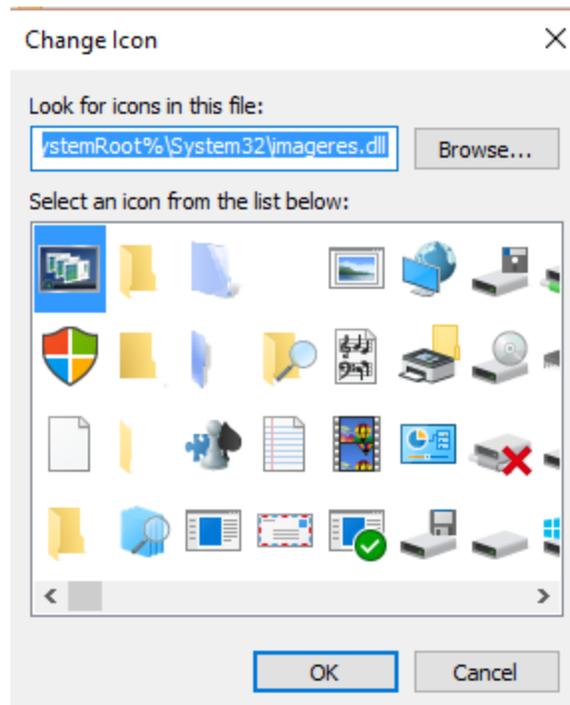
You can 'hide' a library from the left-hand Explorer pane without removing it completely. Handy for old projects that you don't want cluttering up the navigation pane but may need to revisit in the future.

#### SHARED

You can share a Library among users in a Windows Homegroup using the 'Share with' button in Explorer.

#### CHANGE LIBRARY ICON

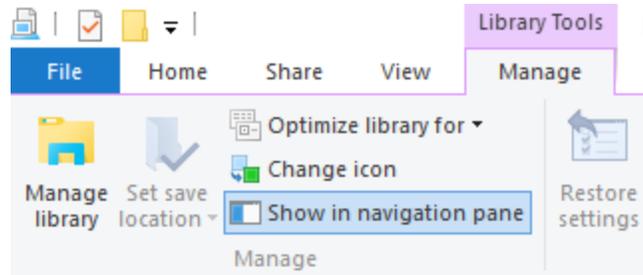
For non-default Libraries, you can choose an alternative icon.



#### RIBBON

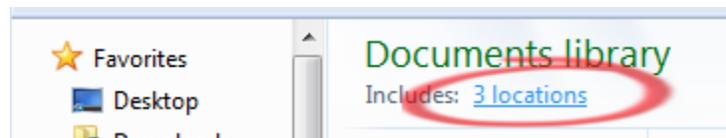
Naturally, Windows Libraries have a ribbon which has some of the options available from the Properties dialog mentioned above.

## Windows 10 for Microsoft Office users Libraries - Remove a Library



## WHAT'S IN A LIBRARY

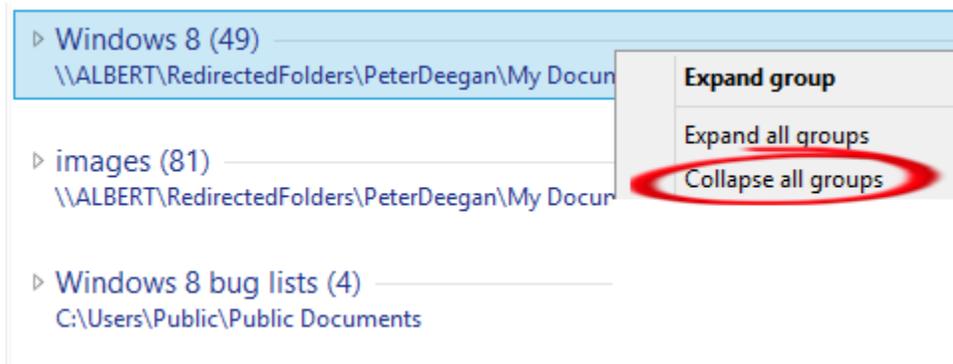
In Windows 7 there was a simple 'Includes nn locations' in the library heading with a link to open up a locations list.



Regrettably that was removed from Windows 8.

The nearest equivalent is the 'Manage Library' button on the ribbon.

Or right-click on a library view and choose 'Collapse all groups' to see only the linked folders with the number of files in brackets.



## RENAME A LIBRARY

Simple, click on library name in the navigation pane and press F2 to rename just like any file or folder.

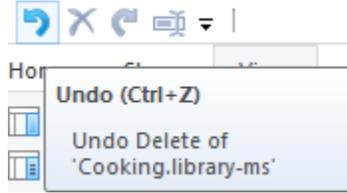
## REMOVE A LIBRARY

Click on the library name in the navigation pane and press Delete or choose Delete from the right-click menu.

The library is deleted but NOT the folders or files linked to it.

## Windows 10 for Microsoft Office users Libraries - Indexing

A library delete can be Undeleted like most Explorer functions.

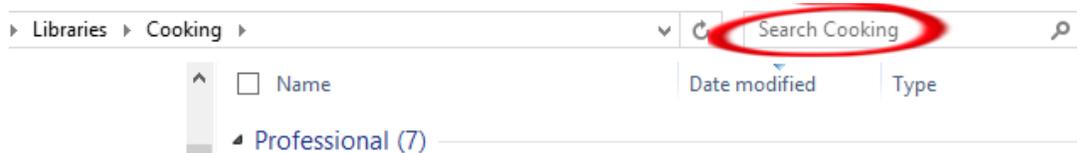


## USING LIBRARIES

Not a lot needs saying about using libraries because it's all the same as for regular folders.

Choose Details view to see all the folders and sub-folders in the library. Click on the column headings to sort the list.

Search the Library using the Search field on top right of the Explorer dialog,



## UPDATING

If a new file arrives into a library linked folder there's a short delay (seconds or occasionally minutes) before it shows up automatically in a library view.

When a new folder is added to the library or files change in an existing folder, Windows has to update its index to be able to find it. This should happen quickly and in the background but if there are a lot of files added quickly (or Windows isn't behaving) then it might take a little time for the new files to show up in the library.

## INDEXING

Files copied from cloud storage are indexed by Windows for quick searches just like all other files, but only the file types that Windows can recognize.

This isn't usually a problem but Google Drive is a notable exception. [Google Drive doesn't properly sync Google Docs to your computer](#) and even if it did, the .gdoc .gsheet and .gslides formats don't have indexing plug-ins for Windows.

## FILE HISTORY

As we discuss in the chapter on [File History](#), a main way that the File History feature decides what files to track and backup is using Libraries.

File and Folders that are in libraries AND stored on local drives (not network shares) will be backed up using File History.

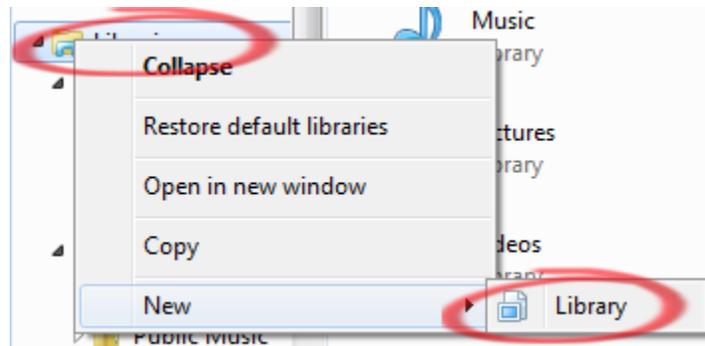
## LIBRARIES BY TOPIC

Microsoft's default Windows Libraries mislead people into thinking libraries are for types of files (Music, Video etc.). Libraries can be used for any heading or subject you like as long as they are separated by folder in their original location.

A super-villain has an evil plan to take over the world. The plan files are in several locations on his computer and LAN.

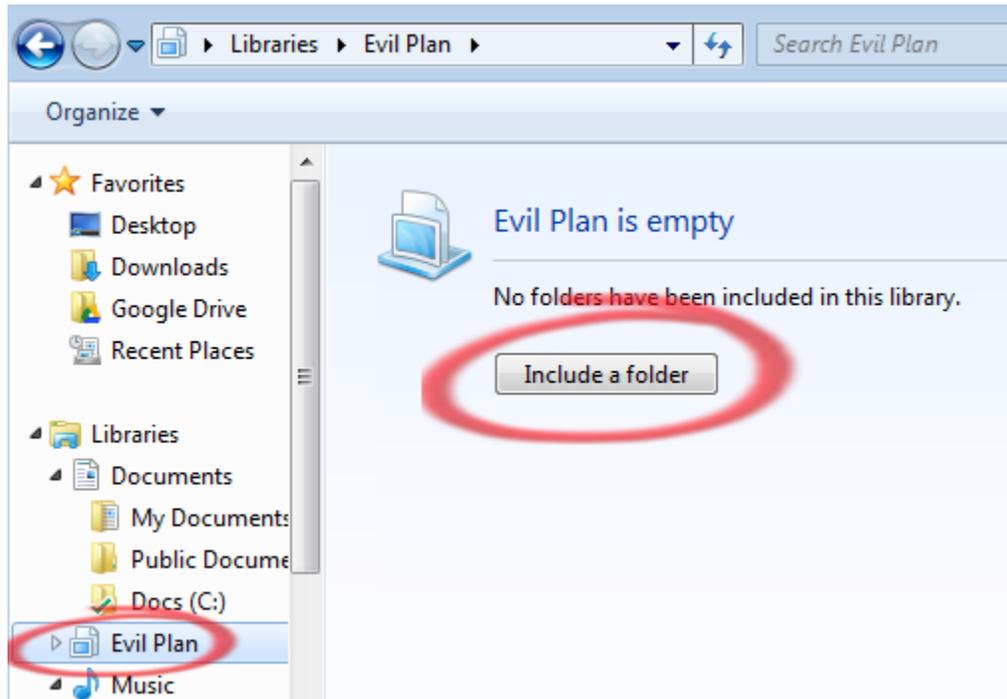
A Windows Library could bring all those folders into a single view for easier access (e.g. by a superhero with only moments at the computer before being caught ...)

On the Libraries heading in Explorer, right-mouse click, choose New | Library,

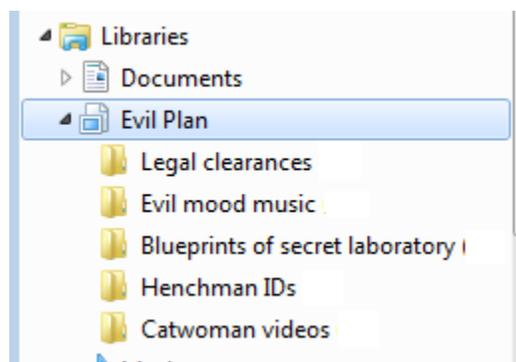


## Windows 10 for Microsoft Office users Libraries - Adding cloud storage

Give the Library a name and then you have a library but no contents.



Microsoft has put a helpful 'Include a folder' link in the pane to get you started. Bring in folders from different places under the one library as our super-villain has done.



His documents, pictures, videos and even music for a single project can be found in a single library.

## ADDING CLOUD STORAGE

You can include cloud folders into any library just like any other folder.

The condition is that the cloud files have to be synced to your computer. Windows can't really 'see' cloud storage but it can deal with a local copy of the cloud files. Happily most cloud storage has sync software (at least for Windows) with [Google Drive](#) being the last major player to do so.

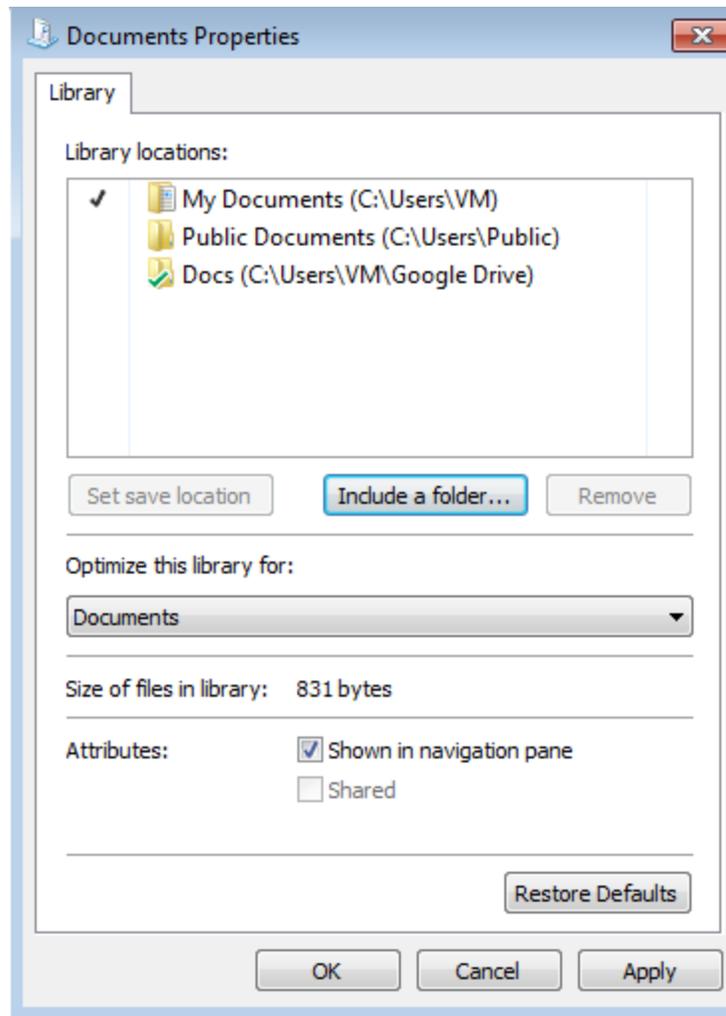
## Windows 10 for Microsoft Office users

### Libraries - Adding cloud storage

Cloud sync software automatically keeps copying between the cloud storage files and folders on a local computer. This lets you manage the files when offline and is much faster than waiting for the Internet connection.

Since the sync'd folders on your computer are normal folders (as far as Windows is concerned) you can add them to library. We'll use Google Drive in this 'step-by-step' however you can use the same tip with any sync'd cloud service including [Onedrive](#), Dropbox, Sync and SugarSync.

Go to the library folder, right-mouse click and choose Properties.



Click 'Include a folder ...' then select the folder you want to add to the library.

---

*You don't have to add the entire cloud storage to a library. You can add any cloud folder or sub-folder to a library.*

---

## MULTIPLE MONITORS

As the price of monitors drop to once unimaginable levels, more and more people are plugging in a second monitor to their desktop or laptop computer.

There's good reason for that, twin monitors are easy to buy and setup. How you use them is up to you and with Windows you have some more options.

Some people have their work programs (like Word or Excel) on one screen with email (Outlook) and browsing on the other. Developers can have their code on one screen and the test programs on the other.

There are monitors that can rotate into Portrait mode which can be used as a 'reading' monitor next to a landscape monitor for regular work.

It's easier to work with matching monitors because your eye travels more smoothly between the two. However, there's nothing stopping you having mismatched monitors.

Your computer will need multiple video output ports but that's rarely a problem these days. Modern video cards almost always have two video sockets, so much so that the features advertised don't bother to mention it!

For a portable computer you can use the extra monitor as a replacement for the built-in screen or an additional screen. Make sure any new laptop has a high resolution video socket, either DVI or HDMI. A standard VGA socket is enough but you should be able to do better on a new machine.

A USB 3 socket can be used to connect another monitor with the right adapters.

In this chapter we'll look at the multi-monitor features in Windows, whether they are new or not.

*Due to the difficulties in making screen shots of multi-monitor setups we have, unusually for us, used some Microsoft supplied images in this chapter.*

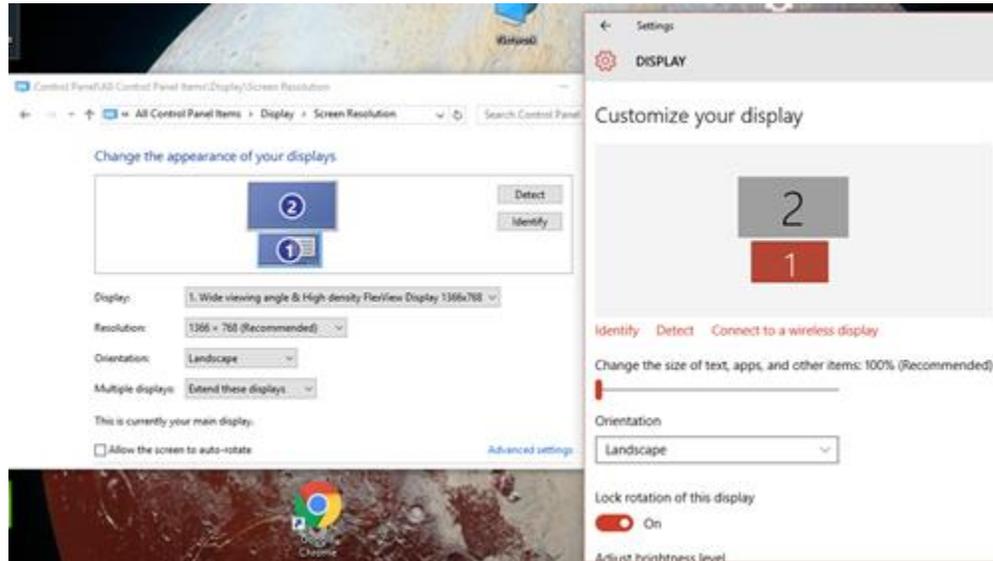
## SPLIT SETTINGS

Nowhere is the split settings problem in Windows 10 worse than in the display settings. They are in both the new Settings and Control Panel. Some settings are in both while some are only in one place.

# Windows 10 for Microsoft Office users

## Multiple Monitors - Add a monitor

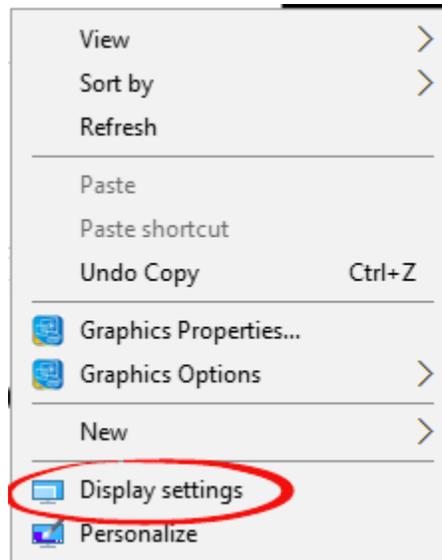
Here's a single screen image showing the two configuration dialogs open at the same time. They show the same two-screen situation in different ways.



## ADD A MONITOR

After you've added a monitor to your computer, Windows might detect it right away. However, it's possible you'll have to restart the computer to make the second screen appear.

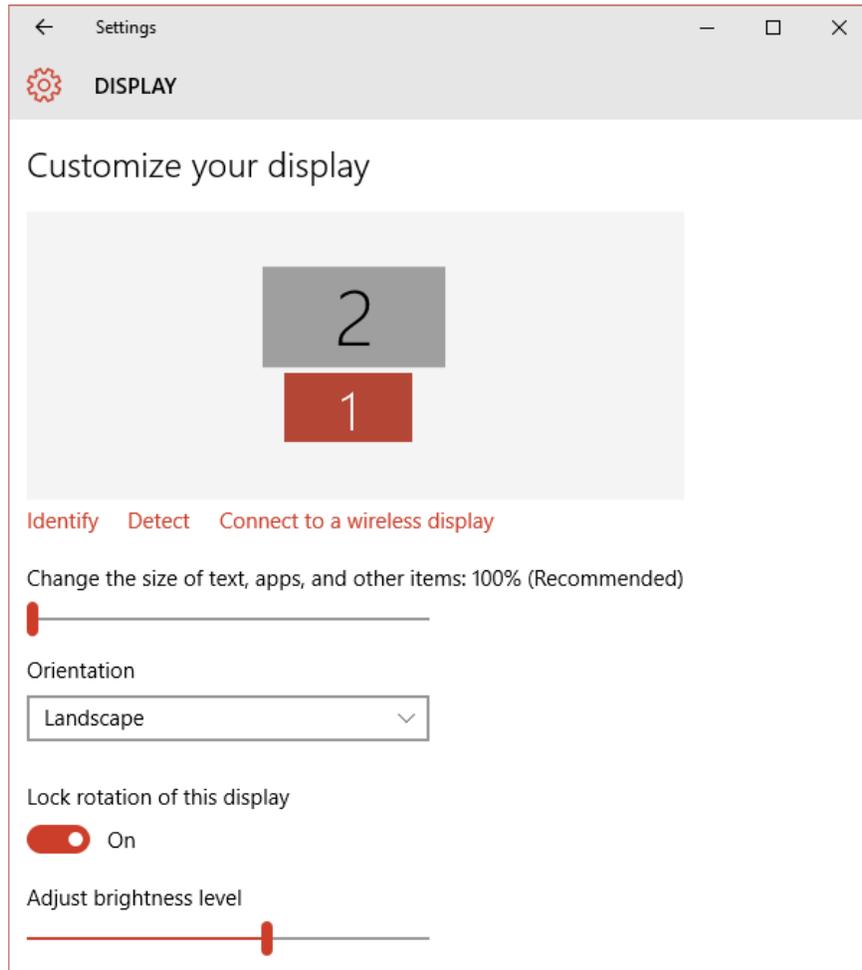
Go to the desktop, right-click and choose Display Settings (was called Screen Resolution).



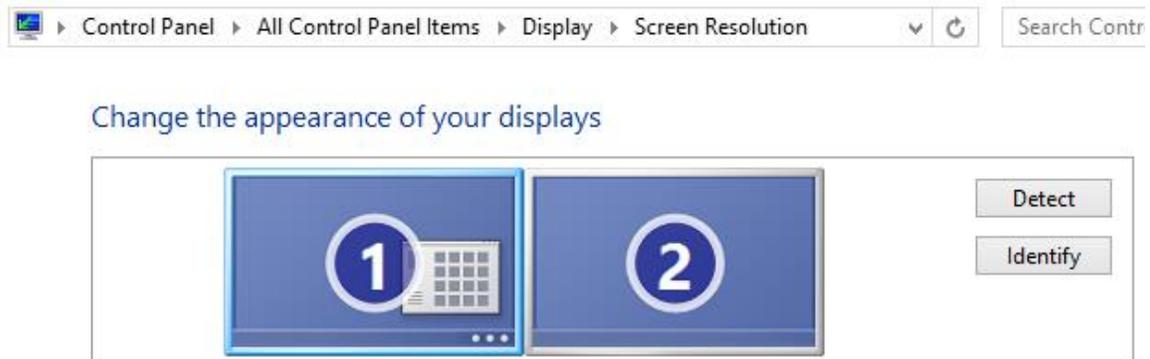
# Windows 10 for Microsoft Office users

## Multiple Monitors - Add a monitor

This will open Settings | System | Display.



Or go to Control Panel | Display | Screen Resolution. Either way, you should see two monitors, if not click 'Detect'.



If you're not sure which monitor is which number, click 'Identify' and a large digit will appear on each monitor.

# Windows 10 for Microsoft Office users

## Multiple Monitors - Re-position

### RE-POSITION

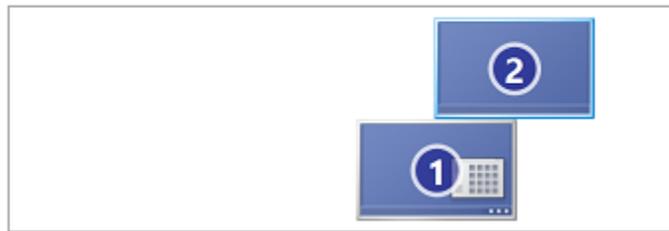
Next, click on the monitor tiles and move them around to match their position in the real world.



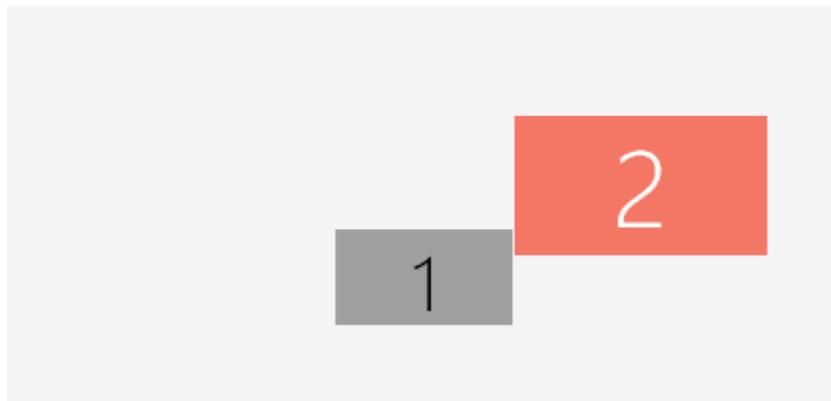
#### Change the appearance of your displays



#### Change the appearance of your displays



#### Customize your display



Identify Detect Connect to a wireless display

The positioning sets how extended monitors are spanned – across or up/down.

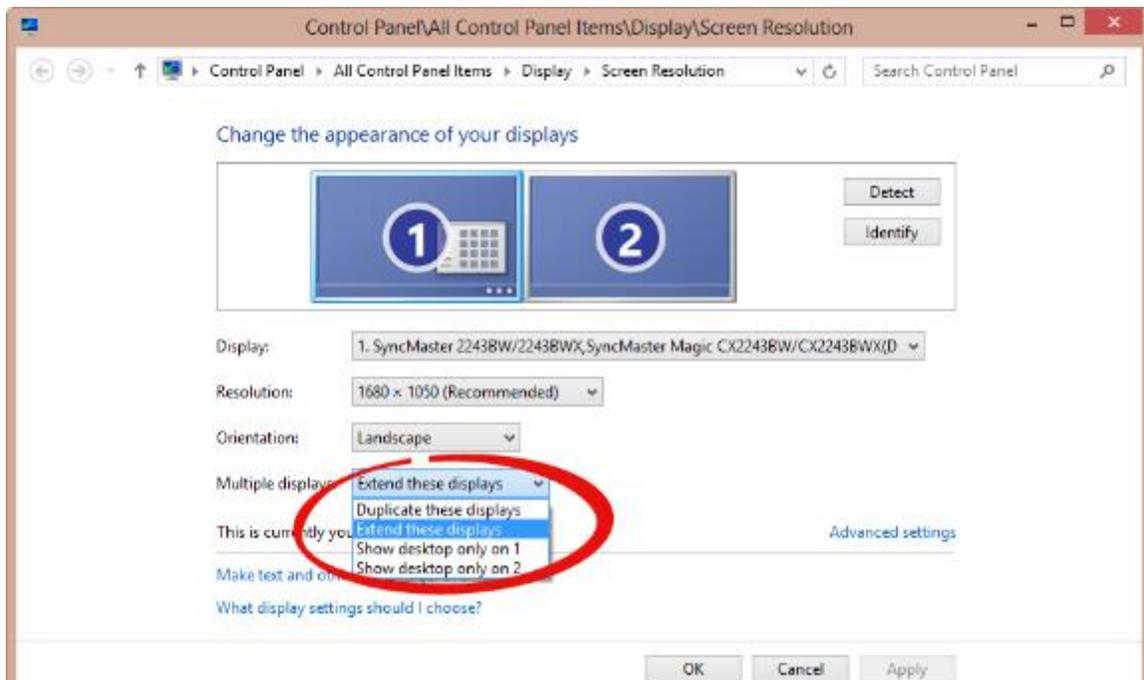
# Windows 10 for Microsoft Office users

## Multiple Monitors - Extend Displays

### EXTEND DISPLAYS

With an extra monitor you have choices about how to two screens relate to each other.

- **Duplicate** – only one Windows screen that appears on both monitors. Sometimes useful for presentations.
- **Extend** – there is one big Windows screen that stretches across the monitors. This is the most common setting for multi-monitor setups.
- **Show desktop only on ...** - tells Windows to only use a single monitor even though it can detect more. The word 'desktop' here is a holdover from earlier versions of Windows and should read 'screen' in the Windows context.

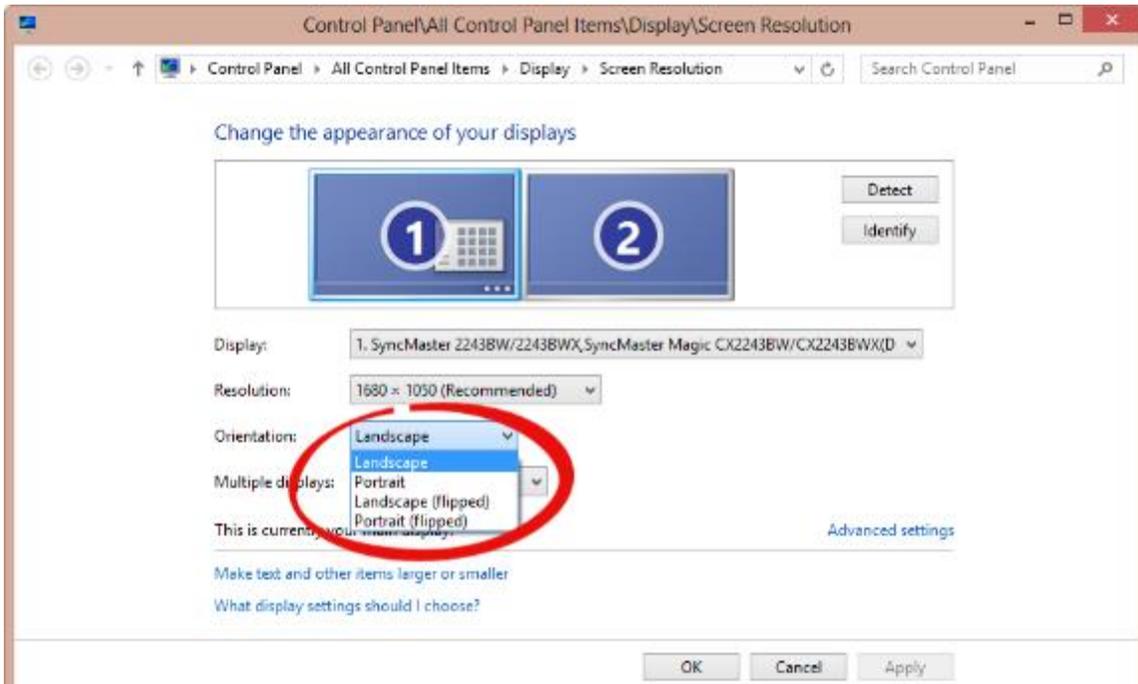


# Windows 10 for Microsoft Office users

## Multiple Monitors - Auto-Rotate

### ORIENTATION

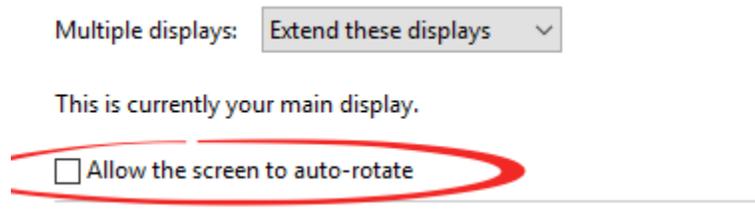
As already noted, some monitors can be rotated into a Portrait mode that's good for reading. Use the orientation option to control how Windows uses a screen.



### AUTO-ROTATE

Many laptops have a little sensor to tell it which way 'up' it's currently positioned. Windows uses this to automatically rotate the screen between portrait / landscape.

You can control this feature from either configuration dialog when the hardware supports it.



## Windows 10 for Microsoft Office users

Multiple Monitors - Scaling



Lock rotation of this display

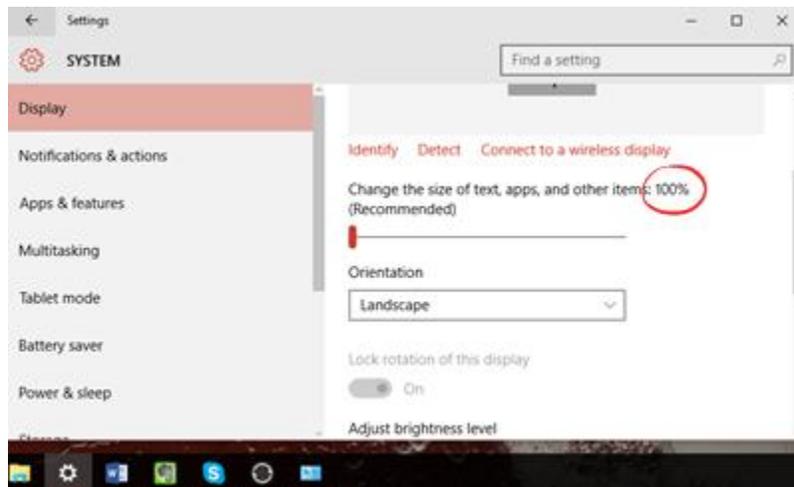


Adjust brightness level

We've rarely seen autorotation work reliably. Usually the orientation sensor gets confused and either won't rotate when it should or changes at the moment of maximum inconvenience.

## SCALING

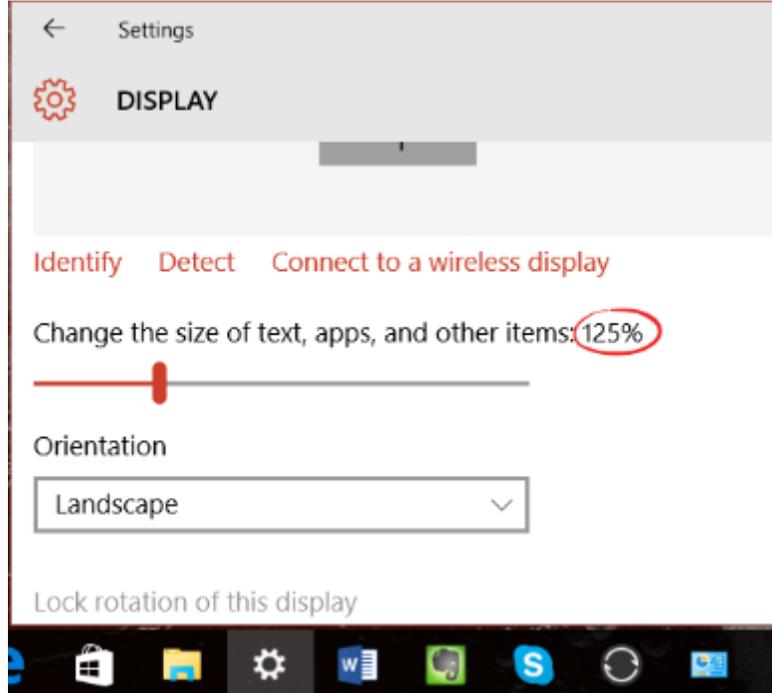
For a long time, you've been able to change the scaling of text on a display. Microsoft calls this option 'Make text and other items larger or smaller'. People having trouble looking at a standard display might want to try scaling. Usually, the default 100% setting is correct.



# Windows 10 for Microsoft Office users

## Multiple Monitors - Scaling

But you can enlarge like this at 125%



Notice that the text is larger and so are the task bar icons. There's no Apply button, just move the slider and see the change immediately.

That's really handy on larger screens. Without scaling you can find yourself squinting to see icons and ribbons.

### INDIVIDUAL SCALING

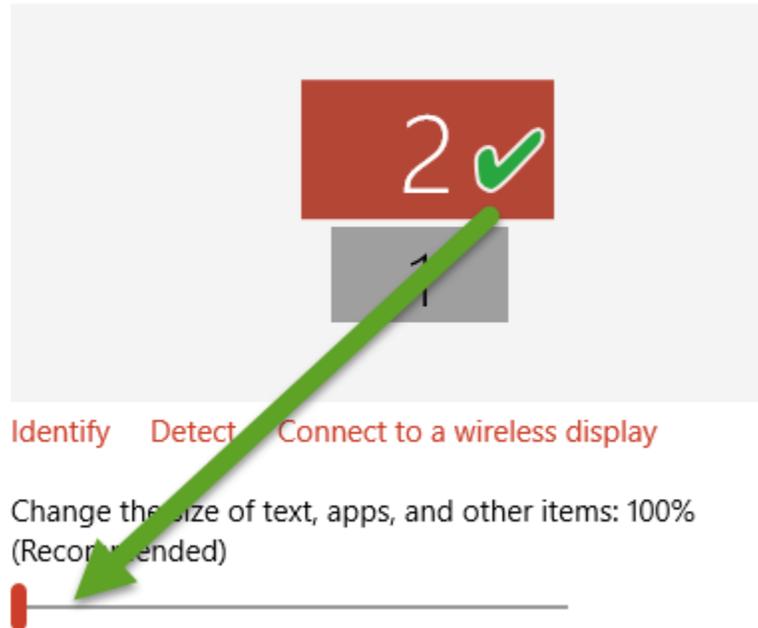
New in Windows 10 is individual screen scaling. Until '10', the display scaling had to be the same for all screens. That's not useful when the screens are very different - for example a laptop with an internal screen and a large TV screen connected.

## Windows 10 for Microsoft Office users

### Multiple Monitors - Desktop Background

In Windows 10 scaling works the same way as before, except that you click on the display icon first then change the scale.

### Customize your display



## DESKTOP BACKGROUND

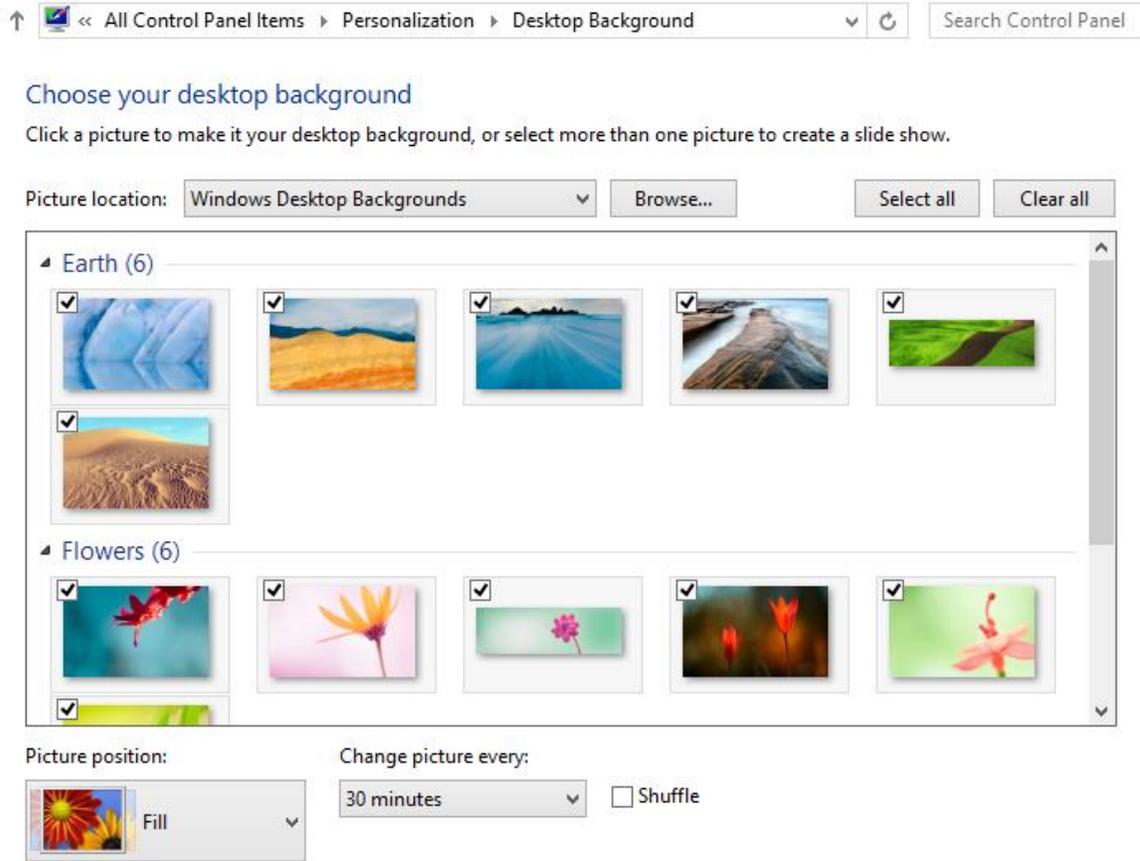
Now the monitors are setup, what more can you do?

New in Windows is the ability to have a different desktop background on each screen or a single image across both monitors.

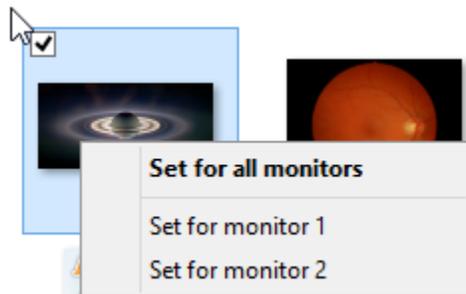
These options aren't obvious from the Control Panel | Personalization | Desktop Background window.

# Windows 10 for Microsoft Office users

## Multiple Monitors - Desktop Background



But if you select one of more images and right-click on them you'll see options to set the desktop background on a specific screen or all.

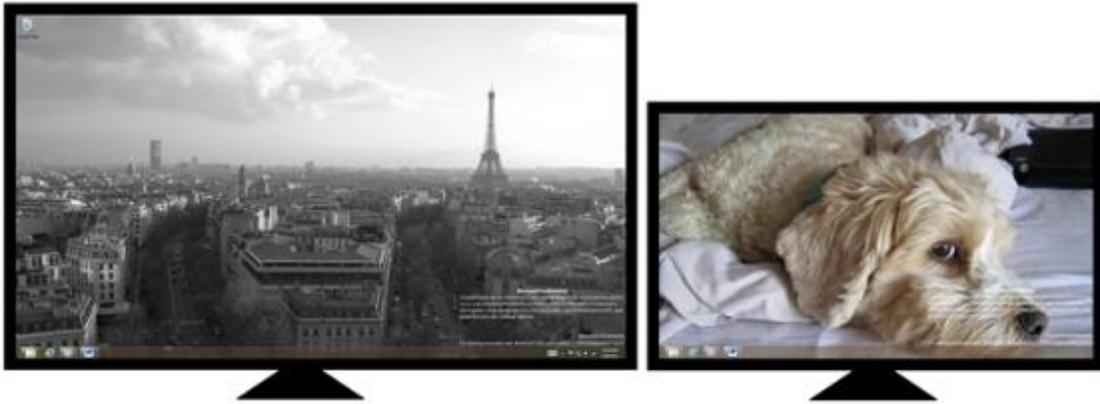


### DIFFERENT

Right-click on the desktop, choose Personalization then Desktop background to choose different images for each monitor.

## Windows 10 for Microsoft Office users

### Multiple Monitors - Desktop Background



*Source: Microsoft*

### SPAN

Or choose a panoramic photo and the Span option so the image stretches across both monitors.



*Source: Microsoft*

Many cameras have a panorama mode to take wide or tall pictures you can use with this feature.

Or search the internet for a suitable image. As a long time NASA nerd, I like this panorama from [Apollo 11 photos](#).

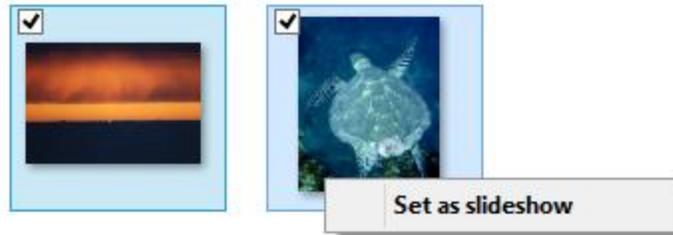
### SLIDE SHOW

On all monitors you can have a slide show of images instead of just one. The slide show applies to all monitors,

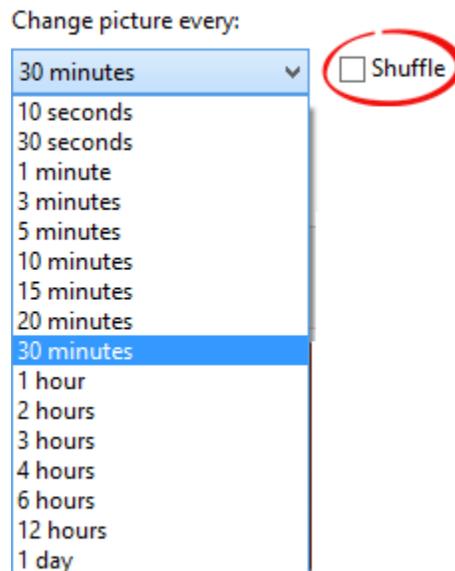
To do that, select more than one image then right-click and choose 'Set as slideshow'.

## Windows 10 for Microsoft Office users

### Multiple Monitors - Taskbar



Below the picture selection pane are options to time the display of each image and either display in order or jumble them up.



## TASKBAR

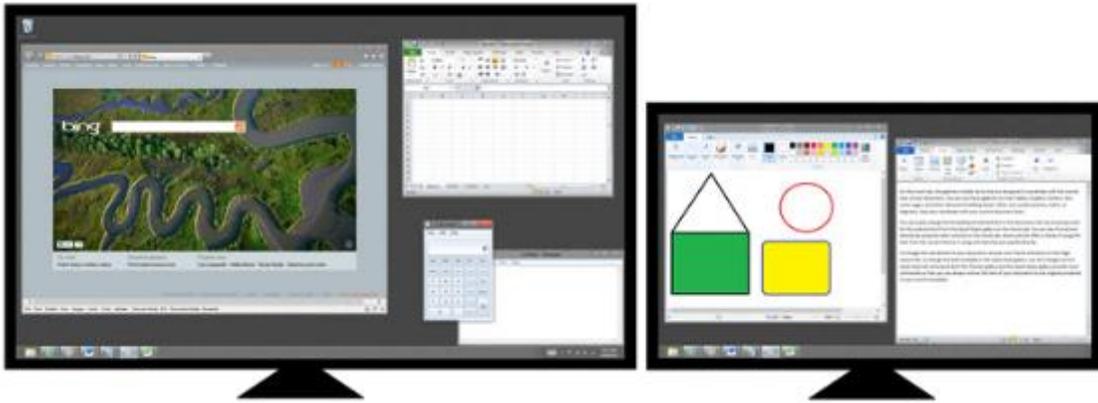
How best to position the taskbar across two or more monitors is a hot topic among computer geeks and they all have firm views on what is 'right'.

Microsoft has tried to accommodate all the major schools of thought with these options.

- Show taskbar on primary display only
- Show taskbar on all monitors with:
  - All taskbar buttons show on all monitors OR
  - Each taskbar button only shows on the monitor where the related program is displayed OR
  - Each button is on main monitor and the monitor where the program is displayed.

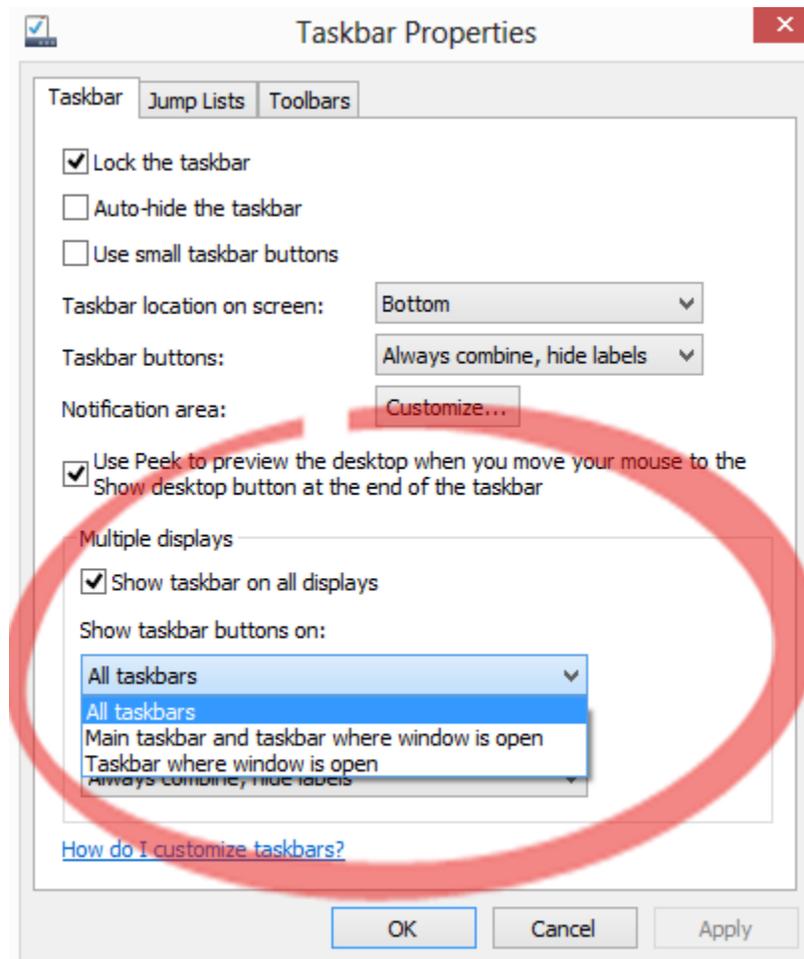
# Windows 10 for Microsoft Office users

## Multiple Monitors - Taskbar



*Source: Microsoft*

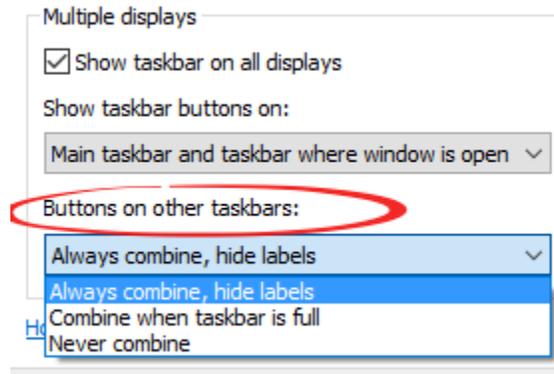
This is all controlled from the Taskbar properties. Right-click on an empty part of the taskbar and choose Properties then make your choices in the Multiple Displays section.



## Windows 10 for Microsoft Office users

### Multiple Monitors - Moving apps

There are also options for how to combine icons on other taskbars.



## START MENU

There's a Start Menu button on the bottom left of each monitor. Click on it to see the Menu on that screen.

Using the shortcut to Start Menu, the Windows key, will display it on the primary monitor. That applies even if you're currently working/focused on another monitor.

## TASK VIEW

When you go to Task View (the task view button or Win + Tab) each monitor will show only the programs open on that screen.

Task View won't let you drag a window to another screen.

## MOVING APPS

To move a program/window between screens, just drag the title bar from one screen to another.

Sadly, there's no shortcut to let you quickly move a program to another screen.

## MIX AND MATCH

In Windows you can mix Modern apps and desktop on different monitors. Use the Insert / Snap options to arrange each screen the way you like.

## Windows 10 for Microsoft Office users

### Multiple Monitors - PowerPoint presentations

# POWERPOINT PRESENTATIONS

A quick mention of making PowerPoint presentations with two monitors.

In early versions of PowerPoint you could only show the presentation itself. With two monitors, one for the presenter and one for the audience, using 'duplicate displays' to show on both screens.

Starting with PowerPoint 2002 we got 'Presenter View' with a presenter specific view on one monitor and the presentation on the other.

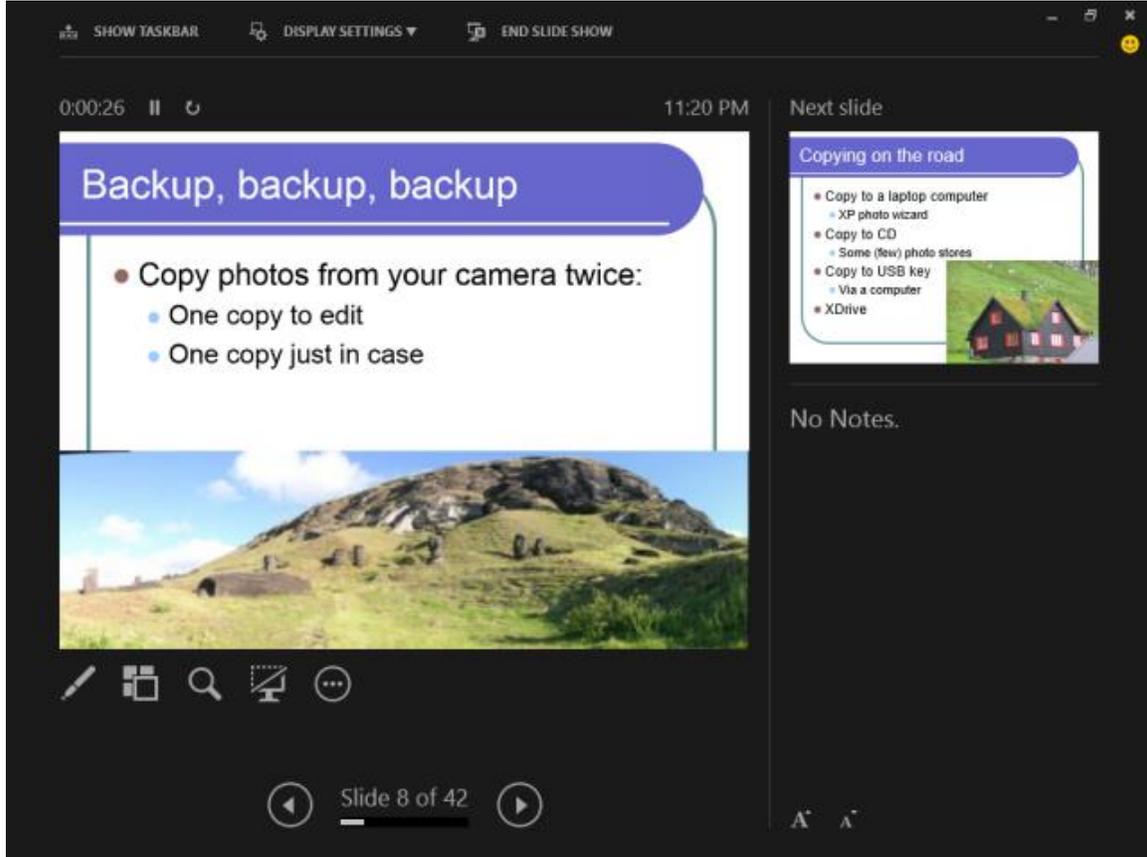


Presenter view has a preview of slides as well as slide notes.

# Windows 10 for Microsoft Office users

Multiple Monitors - PowerPoint presentations

In PowerPoint 2013 the Presenter view has improved considerably.



## WIRELESS EXTRA SCREEN

Miracast is the marketing name for a clever trick that lets you wirelessly connect some Windows computers and Android devices to any HDMI capable monitor or TV screen.

All you need is a Miracast dongle available online for around US\$20 or perhaps a Miracast ready TV.

Miracast works via standard Wifi frequencies and the computers Wifi adapter. The clever trick is that Miracast does this while the Wifi network and Internet connection works on the same hardware.



This is just one of the 'fling to screen' or 'casting' technologies around to send video from a device to a larger screen. Apple's AirPlay, Google Chromecast, Roku and Plex all do similar things.

But Miracast is fully supported in Windows 10, as long as your device supports it

This feature is mostly sold as suitable for PowerPoint presenters but Miracast can be used by anyone to mirror, extend or replace the main monitor. That's the same as a second, cabled, monitor.

We've seen Miracast used to display a laptop screen on a large lounge room TV without a cable running across the floor.

We take a Miracast dongle when travelling (it's tiny). It plugs into most hotel and cruise cabin TV sets for a big screen view of your travel photos and videos.

## Windows 10 for Microsoft Office users

Wireless Extra Screen - Is your computer capable?

Miracast is available to send from other devices. Android 4.2 and later will Miracast as long as the device hardware supports it. Windows Phone 8.1 and BlackBerry 10.2.1 are also Miracast capable, but check the hardware specs as well.

### IS YOUR COMPUTER CAPABLE?

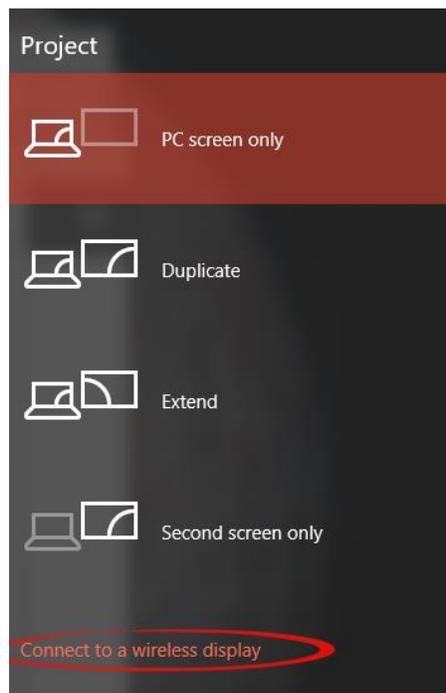
Before you go buying a Miracast dongle, check that your portable computer or device is Miracast capable. Miracast (usually in the form of Intel's **Widi** service) has to be supplied with the computer.

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*There's no way to buy an accessory (like a Wifi adapter) to add Miracast support to an existing computer. Miracast needs a tight integration of graphics adapter and Wifi. It's usually only available for laptops, tablets and smartphones – either Windows 10 or Android.*

---

The easiest way to do that is to press the Windows key and P (Win + P) to open the Project pane.



If there's a link 'Connect to a wireless display' then your computer is Miracast capable.

## Windows 10 for Microsoft Office users

Wireless Extra Screen - Miracast receiver/dongle

### WHAT YOU NEED

To send:

- Miracast capable computer, see above
- Windows 8.1 or Windows 10 – the original Windows 8 did not support Miracast.

Or

- Some other Miracast capable operating system and device (see above).

To receive:

- A Miracast capable TV  
or, more likely
- a Miracast receiver/dongle.

### MIRACAST RECEIVER/DONGLE

The Miracast receiver/dongle is a small connector, a bit larger than a regular USB memory stick. It has a small antenna, a HDMI male plug and a USB socket or cable.



## Windows 10 for Microsoft Office users

Wireless Extra Screen - Miracast receiver/dongle

The HDMI plug goes into the HDMI socket on the TV/Monitor and the USB cable goes into any working USB socket, there's often one on the monitor itself like this:



Most advertising for Miracast and similar devices does NOT tell you that a USB socket is needed as well as the HDMI socket.

The HDMI connection doesn't usually provide enough power for the Miracast receiver to work. The USB connection provides the extra power needed.

If there isn't a USB socket on the TV/Monitor, you'll need to find another powered socket. Most likely that will be an AC/USB power adapter, similar to one for charging a phone or tablet. If desperate, plug the Miracast USB cable into a portable power pack (usually for emergency recharging a phone) or your portable computer, though that negates the purpose of a wireless connection!

For more flexibility we prefer Miracast dongles with a separate USB cable (usually a microUSB socket on the dongle, the same as on many non-Apple smartphones) rather than a fixed cable. This gives you more options for connecting a longer or different cable when necessary.

There are many Miracast dongles and logos out there.

**Miracast** is the main one for our purposes. Often the same devices also support:

**DLNA** – Digital Living Network Alliance, a set of guidelines for the interconnection of media devices.



## Windows 10 for Microsoft Office users

Wireless Extra Screen - Connecting to a monitor

**AirPlay** – Apple’s version of screencasting from iPhone, iPad or Mac computers to a limited set of receivers, usually Apple’s own AirPort Express or Apple TV.

In our experience, devices that promote both AirPlay and Miracast support don’t work well (or at all) in AirPlay mode. Most likely that’s because Apple has added protections to stop unauthorized devices from using their technology.

Intel Wireless Display (Widi) technology is included with many Windows laptops. Widi v3.5 and later includes Miracast.



Here’s some possibilities for a Miracast dongle including a recommended model.

### Microsoft Wireless Display Adapter

Before reading this, regular Office-Watch.com readers might want to sit down and take a deep breath <g>. We *like* this piece of Microsoft hardware and use it ourselves.

It’s very reliable and works well with a range of Windows and Android devices. Video / Audio sync is good. Very simple to use.

The only problem with the Microsoft Wireless Display Adapter is the price. At US\$59.95 its expensive and, as usual, the most expensive place to buy Microsoft goods is the Microsoft online store. Happily, a little shopping around can save you some money. [Amazon US](#) usually has the adapter for about \$10 off with free shipping. There are some ‘[certified refurbished](#)’ adapters around for about \$40. Ebay also has some of these adapters available (as usual, be careful and use reputable retailers).

### Belkin Miracast Video Adapter

around US\$60. Belkin gear is usually good quality and is updated via firmware downloads.

There are plenty of cheaper ‘no name’ Miracast dongles available on Amazon or search for ‘Miracast’ on ebay will find dongles around the US\$20 mark. We’ve had mixed results with these cheaper devices. They don’t always work reliably or broadcast synchronized video/audio.

Note: Google’s Chromecast and Roku devices are **not** Miracast compatible at the time of writing. You can ‘cast’ from Windows to a Chromecast device via the Google Chrome browser.

## CONNECTING TO A MONITOR

The receiver should come with some instructions. Here’s a general guide.

## Windows 10 for Microsoft Office users

### Wireless Extra Screen - Connecting to a monitor

Once you have a Miracast receiver/dongle, plug it into a HDMI socket on your TV/monitor.

Plug the USB cable into the dongle and the other end into a working (powered) USB socket. Ideally there's one on the TV/monitor itself.

If necessary, switch the monitor to that HDMI input line.

The screen will show some default information so you know that the dongle is working and waiting for a connection:



Miracast includes audio so you should be able to get sound out of speakers connected to the TV/monitor. If not, sound can come out of the computer however there's a chance that the video and audio will be out of sync due to latency/delays in transmitting the video.

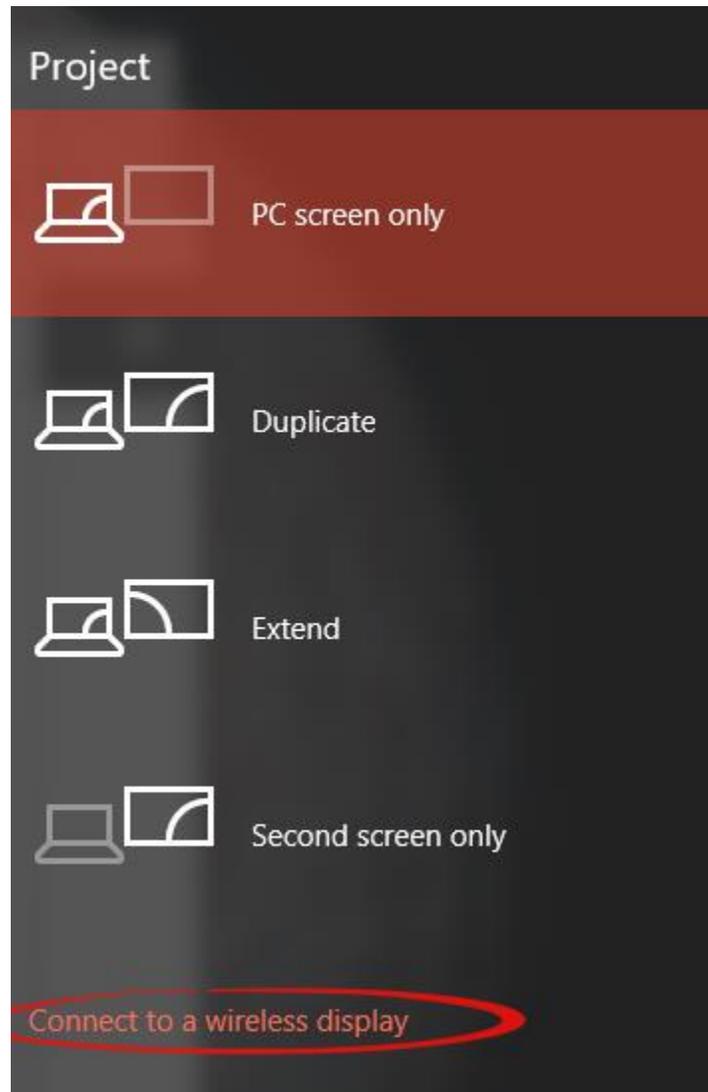
## Windows 10 for Microsoft Office users

Wireless Extra Screen - Connecting the computer to Miracast

### CONNECTING THE COMPUTER TO MIRACAST

Finally, we turn to the Windows computer. Go to the Project pane via the Win + P shortcut. Choose if you want to display the same screen on both displays or, more likely, extend across the two displays.

To setup on first use, click on Connect to a wireless display. This will take you to PC and Devices | Devices and automatically start a search for new devices.



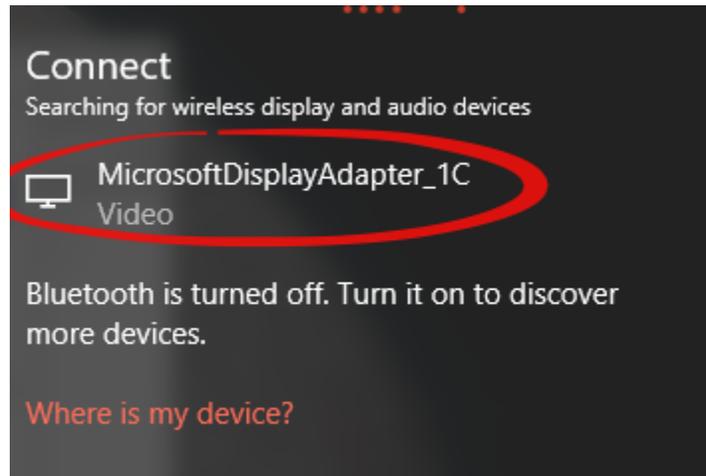
Once the Miracast device appears in the new device list, click on it to install. The device name may be some strange serial number.

## Windows 10 for Microsoft Office users

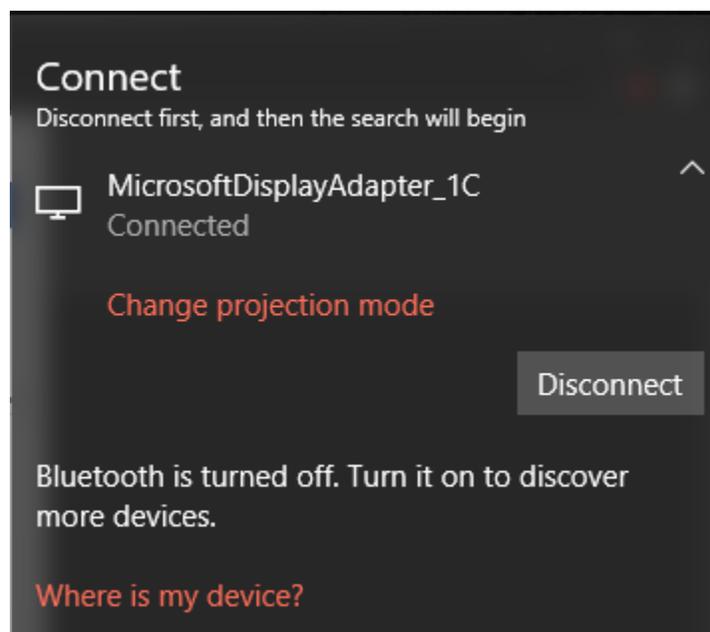
Wireless Extra Screen - Connecting the computer to Miracast

The display adapter might take up to a minute before appearing on the device list.

Once setup, go to Project and click on the Miracast device.



Wait a few moments while the Miracast connection starts working. Then go back to Devices | Project then click on the Miracast device again. Now it will show the connected screen options:



**Disconnect** – will stop the Miracast display from your computer.

**Duplicate** – the same as ‘mirroring’. What is on your main screen will also appear on the Miracast screen.

**Extend** – your main screen and the Miracast screen are ‘side-by-side’. You can position the two relative to each other from the Screen Resolution dialog (see below).

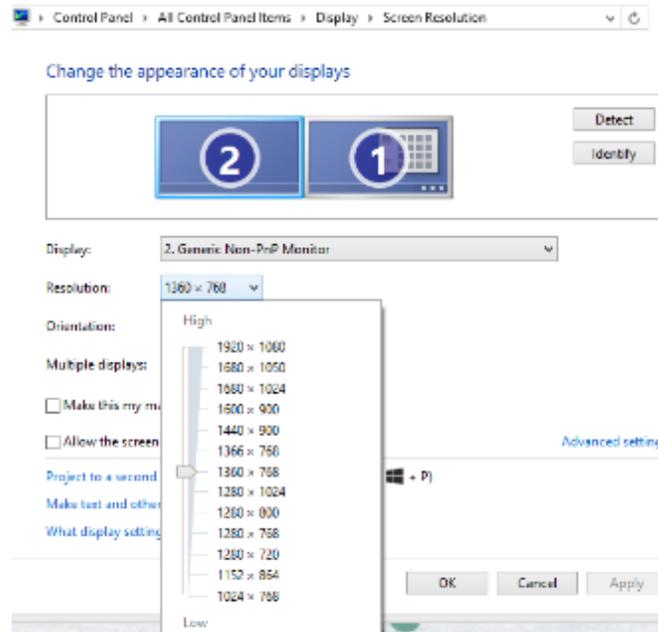
**Second screen only** – blank out the main screen and use the Miracast display only.

## Windows 10 for Microsoft Office users

### Wireless Extra Screen - Miracast receiving

Notice that, despite much of the promotion and even the homophone 'Mira', there's not just screen mirroring but other screen options.

Alternatively, you can go to the Screen Resolution dialog (right-click on the desktop or Control Panel | Display) where the Miracast screen appears just like any additional display.



In Extend mode, click on the display icon (the number 2) and move around so it's in the correct place in relation to the primary monitor.

Windows 10 lets you set different resolutions for each attached monitor. In Extend or Second screen only mode, the screen resolution can be changed from the default to a separate resolution for the Miracast screen. At higher resolutions like 1920x1080 the Miracast display might be shaky because the wireless connection can't properly cope with the high data rate required. If that happens, switch to the lower resolution until you find a setting that's stable.

## MIRACAST RECEIVING

Windows 8.1 and later can allow using your laptop as the *receiving* screen for another device. This will let you display, say, a smartphone screen on your laptop.

But Microsoft hasn't enabled this feature in Windows. They added some "Wi-Fi Direct APIs for Discoverability" to Windows, leaving software makers to create the software and drivers to receive Miracast signals and put them on the screen.

One option to try is [AirServer for PC](#) – this will let wirelessly stream from an Android or other Miracast device onto a Windows screen.

## Windows 10 for Microsoft Office users

Wireless Extra Screen - Updating dongle

### MIRRORING APPLE DEVICES

The most exciting perspective for casting to Windows is the ability to receive screens from Apple devices. Apple uses proprietary technology (not Miracast). Officially, you need an Apple TV to wirelessly stream from iPhone's and iPads.

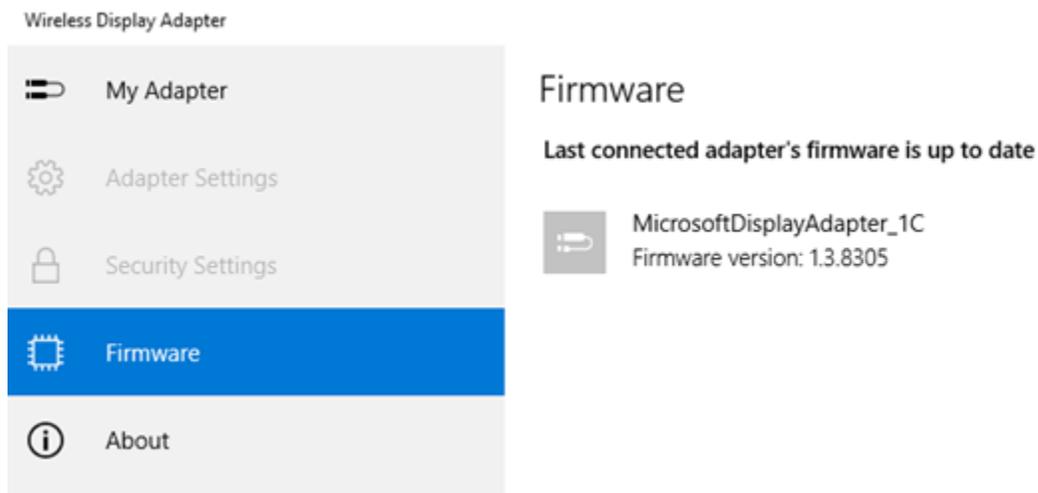
But there are cheaper alternatives. [AirServer for PC](#) also supports Apple iPhones and iPads.

### UPDATING DONGLE

You can plug-in the Microsoft Display Adapter and it should work. But we found a few devices that could 'see' the adapter but not connect and display through it.

The solution may be to update the firmware inside the dongle. Even though your dongle is new, it will have left the factory many months before the latest update was released.

Get the dongle up to date via the [Wireless Display Adapter app](#) from the Windows Store.



Connect to the adapter, then open the app. Choose Firmware from the left menu to see if there's an update available for your dongle. If there is, the app will handle the download, updating the dongle and restarting it with the latest firmware. The whole thing takes 5-10 minutes.

Our 'new' dongle had v1.2.nnnn firmware and we could not connect it to some Android tablets. After upgrading to the latest v1.3.nnnn release the dongle could handle any device we threw at it.

# VIRTUAL DESKTOPS

Virtual Desktops are a handy way to organize your work. Instead of a mess of applications and windows on a single screen, you can have your work arranged with different apps on different desktops.

You can see one of these 'desktops' on the physical screen at any one time. The rest are 'virtual' or hidden away until you summon them.

Virtual Desktops are a useful and somewhat overdue addition to Windows 10. They have been in Mac and Linux for some years. There have been Windows add-ons to add virtual desktops to past versions of Windows.

We'll show you how to [get started](#) with virtual desktops, [essential settings](#) that should be changed and desktop tricks for [Microsoft Office](#) users.

## USES

What use are virtual desktops?

You can put programs for different projects or subjects on different desktops. Perhaps desktops for:

- Regular work, Outlook email, Word documents, browser windows.
- Another with an Excel worksheet and other Word document for that special job the boss gave you.
- One for your personal project like a hobby, volunteer work or travel planning.
- A [remote desktop](#) running full screen or a virtual machine.
- Browser windows to watch the news and that ebay item you're bidding on.
- A game, Solitaire, World of Warcraft ... whatever you'd like to hide from the boss.

They are also a good way to reduce distractions while working by hiding irrelevant windows on other virtual desktops.

## MULTIPLE WINDOWS

The same program, like [Outlook](#), can have windows open on different desktops. In the case of Outlook, you can have duplicate windows (for example Inbox) open on different desktops. *(how to do that? Choose the Inbox from Outlook folder view, right-click and choose 'Open in new window'. Do it again so you have two Inbox windows open. Now position one of those windows in another virtual desktop, see [below](#)).*

We'll show you how to open the same document in different virtual desktops for [Word](#), [Excel](#) and [PowerPoint](#) plus [web browsers](#).

## Windows 10 for Microsoft Office users

### Virtual Desktops - Your first virtual desktop

All programs are compatible with Windows 10 virtual desktops. The whole thing is run by Windows with the individual programs 'unaware' that there's a virtual desktop involved.

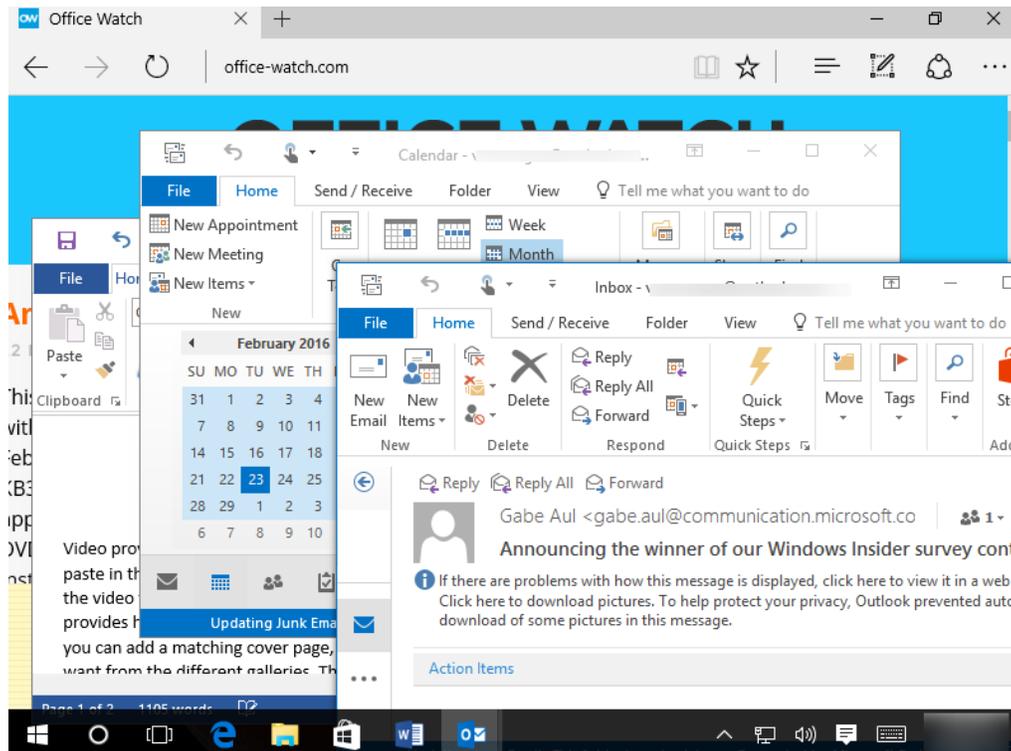
### SMALL SCREENS

Virtual Desktops are fantastic on laptops and tablet devices. Crowding lots of apps onto a small screen is a thing of the past.

## YOUR FIRST VIRTUAL DESKTOP

Trying virtual desktops can be a little scary. It's a different way of working that isn't obvious or natural. So here's a step-by-step guide to making and using your first virtual desktop.

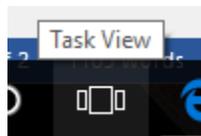
We'll start with a simple desktop. Outlook is open with windows for the Inbox and Calendar. Word has a document and a browser has an essential web site.



Let's split up those layers of windows across two virtual desktops.

### MAKE A VIRTUAL DESKTOP

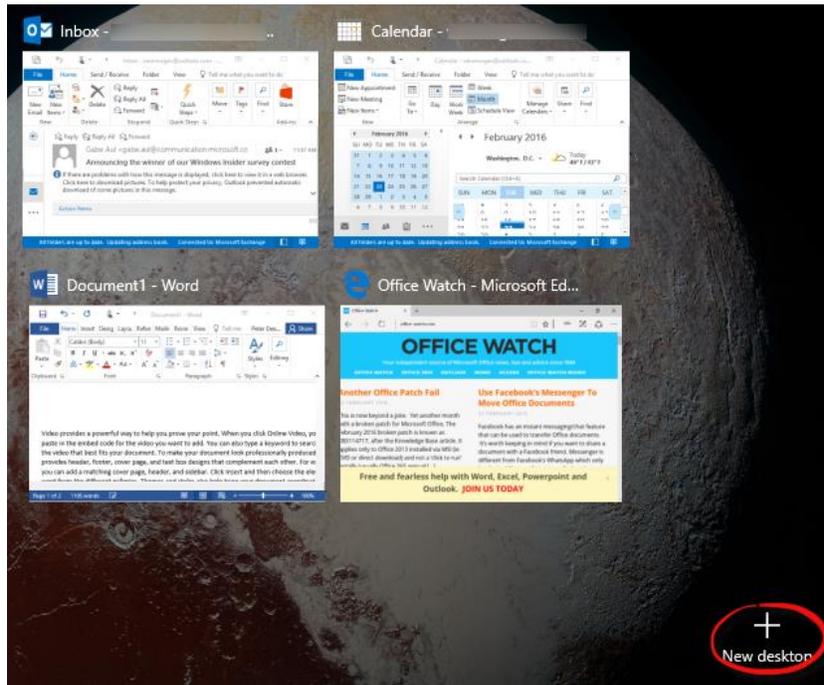
Click the Task View button, **Win + Tab** or swipe from left of screen.



## Windows 10 for Microsoft Office users

### Virtual Desktops - Your first virtual desktop

All the open programs show up with thumbnails. On the bottom right of Task View is a 'New Desktop' button.



That creates a new desktop and open the desktop thumbnail view.



There's a new virtual desktop shortcut **Win + Ctrl + D**.

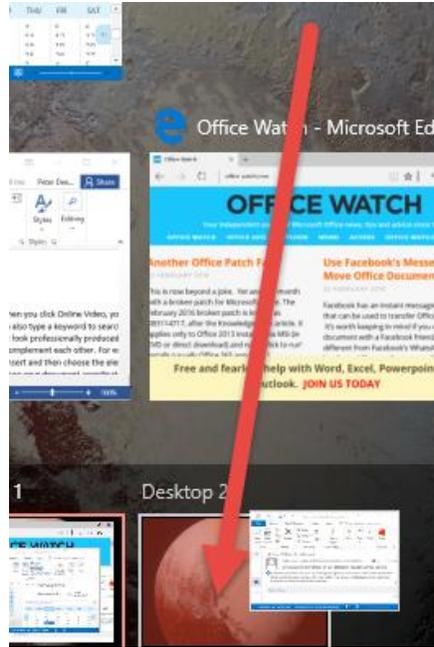
Here you can see the original 'Desktop 1' with all the apps open on it. And the newly created 'Desktop 2' that has no visible apps and only the desktop image (Pluto) showing.

# Windows 10 for Microsoft Office users

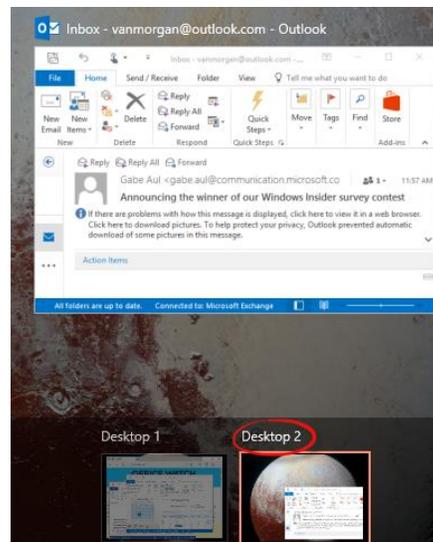
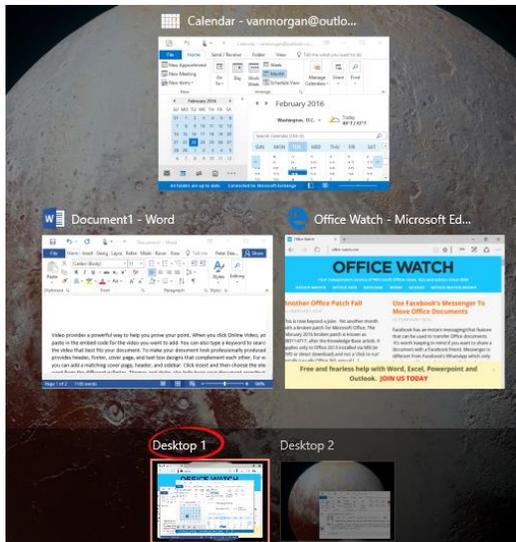
## Virtual Desktops - Your first virtual desktop

### MOVE A PROGRAM

Now let's move an open app window from one desktop to another. Click on the program image (not the title bar) and drag it to the desktop thumbnail you want.



If you hover over a desktop thumbnail, you can see the programs open on that desktop.



Click on one of the desktop thumbnails to see that desktop in full view.

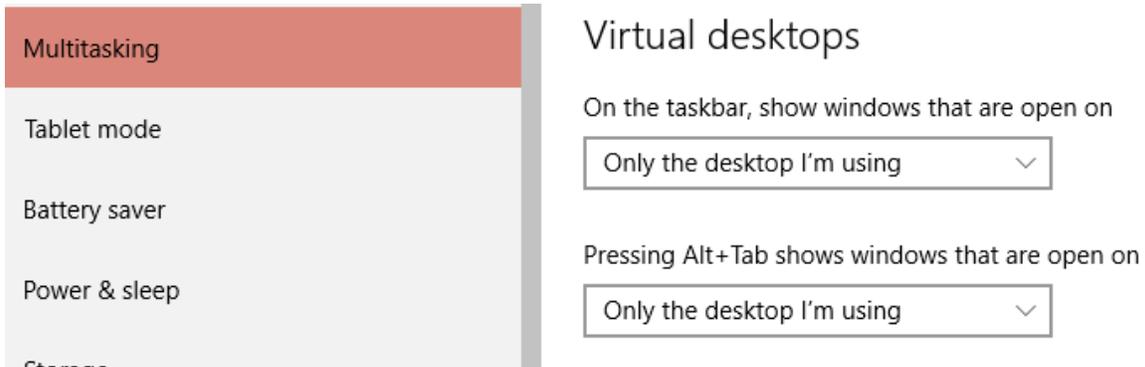
To switch between the virtual desktops, press Win + Tab then click on the desktop thumbnail. There are other options we'll show you **later**.

# Windows 10 for Microsoft Office users

## Virtual Desktops - Options

### OPTIONS

Before we continue, a note about some important virtual desktop settings. These are important and you'll probably want to change the Microsoft defaults at Settings | System | Multitasking.



#### **On the taskbar, show windows that are open on:**

- Only the desktop I'm using
- All Desktops

#### **Pressing Alt+Tab shows windows that are open on:**

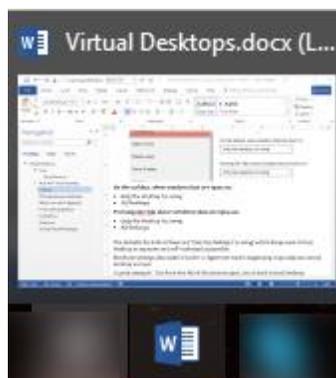
- Only the desktop I'm using
- All desktops

The defaults for both of these are 'Only the desktop I'm using' which keeps each virtual desktop as separate and self-contained as possible.

But those settings also make it harder to figure out what's happening, especially for virtual desktop novices.

A quick example. You have two Word documents open, one in each virtual desktop.

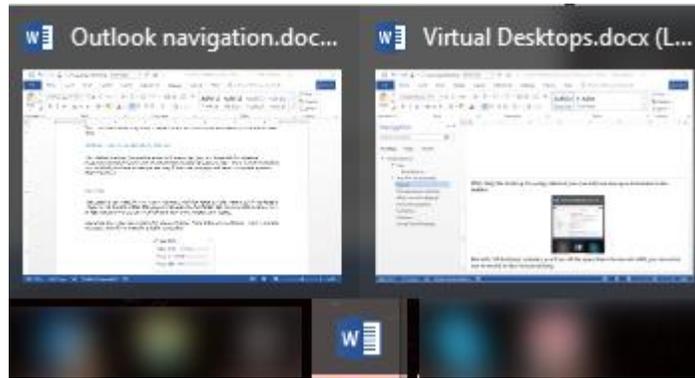
With 'Only the desktop I'm using' selected, you can only see one open document in the taskbar.



## Windows 10 for Microsoft Office users

Virtual Desktops - Moving between desktops

But with 'All desktops' selected, you'll see all the open Word documents.



Even better, those thumbnails become a simple way to switch between virtual desktops or just peek at one.

- Hover your pointer over one of the taskbar thumbnails to view that windows and virtual desktop.
- Click on the thumbnail to switch to that window and virtual desktop.

---

*We suggest changing both these settings to 'All desktops', at least while you're getting comfortable with virtual desktops. For the rest of this chapter we'll assume that both settings are 'All desktops'.*

---

## MOVING BETWEEN DESKTOPS

Now you have some virtual desktops, how to do move between them?

### VIA TASKBAR

Perhaps the easiest way to switch desktops is to choose the program window you want from the bottom taskbar. If you have "**On the taskbar, show windows that are open on:**" set to 'All Desktops' then you'll see open program there.

### SHORTCUT

The fastest way to cycle around the virtual desktops is the shortcut **Win + Ctrl** plus the **left/right** arrow keys.

### WIN + TAB

Win + Tab will open the Task View with the virtual desktops shown in a row at the bottom.

## Windows 10 for Microsoft Office users

Virtual Desktops - Moving programs between desktops

### SWIPE FROM LEFT

On a touch screen, swiping in from the left of screen will also open the Task View.

### FOUR FINGERS

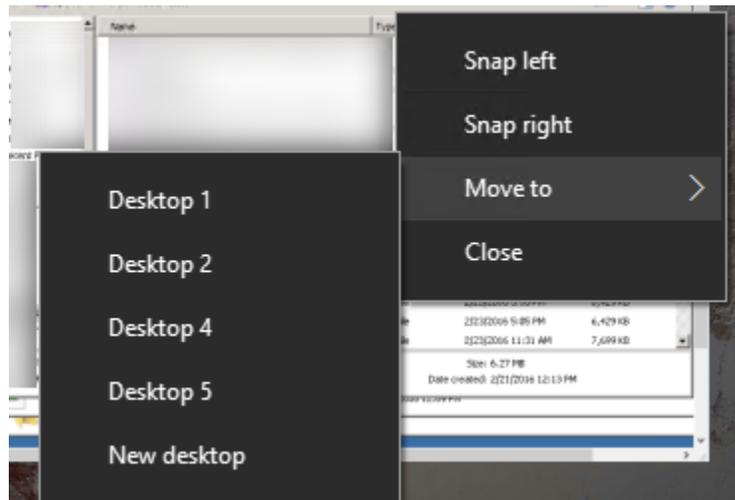
On some touchpads, use a four finger swipe to switch between desktops.

## MOVING PROGRAMS BETWEEN DESKTOPS

Very soon after making a virtual desktop, you'll want to move a window from one desktop to another.

Do that from Task View by dragging an application thumbnail as shown [above](#).

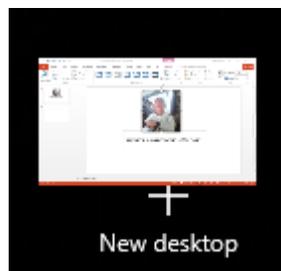
Or right-click on the Task View thumbnail then choose Move to and choose an existing desktop or create a new one.



### MOVE AND ADD

You can add a new virtual desktop and move a program to it at the same time.

In Task View drag and drop a program thumbnail to the New Desktop icon at bottom right of the screen. When the thumbnail shrinks to a small size, it's considered 'over' that icon.



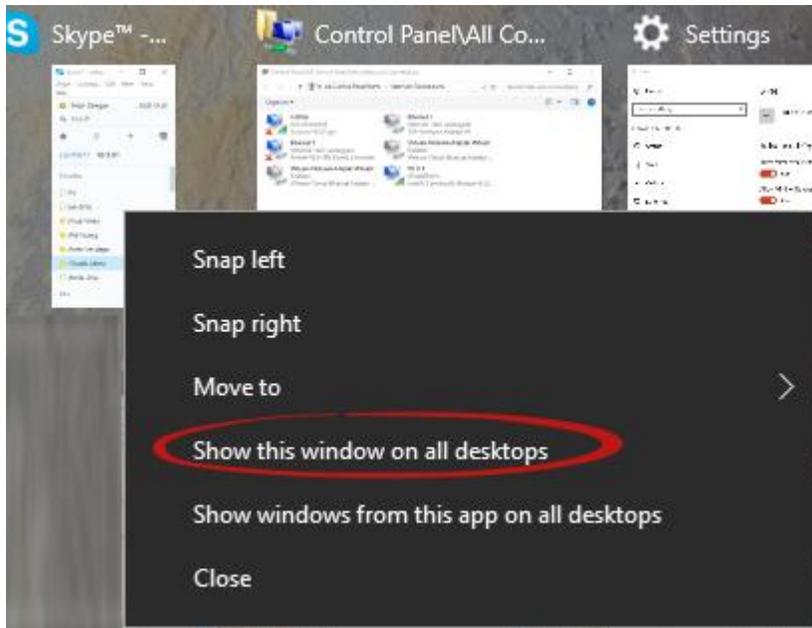
## Windows 10 for Microsoft Office users

Virtual Desktops - Same document / different desktop

Moving programs between desktops is an area that Microsoft has neglected so far. There should be faster and more elegant ways to move an open window between virtual desktops, preferably from the programs themselves.

### ONE APP – ALL DESKTOPS

It's possible to have one program appear on all desktops. Right-click on the task view thumbnail and choose 'Show this window on all desktops'.



For example, you might want Skype or some other messaging app to appear all the time.

The window stays in the same position on each of the virtual desktops.

**Show windows from this all app on all desktops** - is similar but applies to all windows run by the selected program.

### NEW PROGRAM

To start a new program in a particular virtual desktop, switch to that desktop then start the program. Programs/app will always start in the currently visible desktop.

### SAME DOCUMENT / DIFFERENT DESKTOP

The mid-2016 addition of '[Show this window on all desktops](#)' makes it a lot easier to see one document on all windows. But it doesn't let you choose which virtual desktops nor does it let you show different parts of a document in different windows.

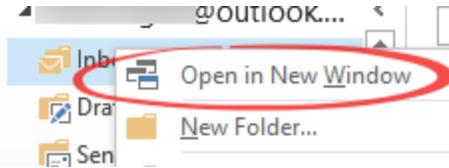
You can have the same information visible on more than one desktop, exactly how depends on the application and document.

## Windows 10 for Microsoft Office users

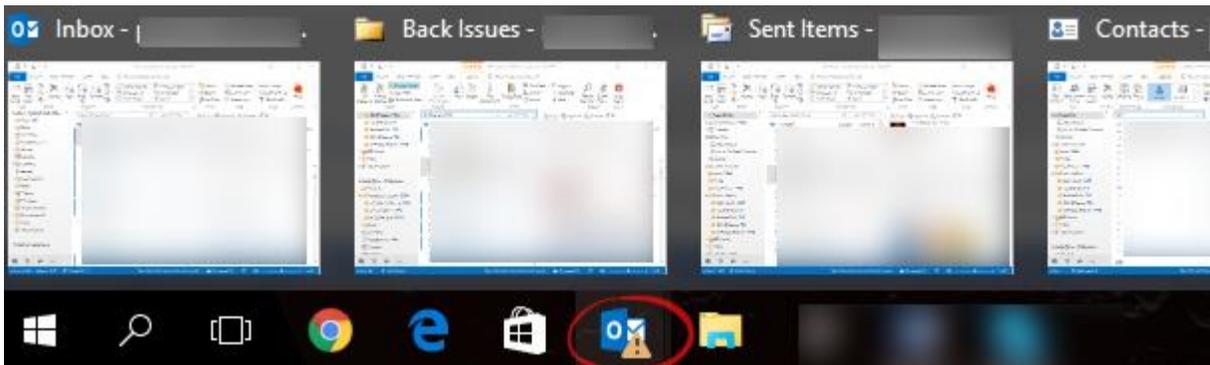
Virtual Desktops - Same document / different desktop

### OUTLOOK

Outlook lets you open multiple windows by right-clicking on a folder or icon then choosing 'Open in New Window'.



Normally this is used to open different windows (e.g.t. Inbox, Calendar and Contacts). These can be moved to different virtual desktops. In other words, Outlook can show up in different desktops.



Outlook can also have two or more windows showing the *same* folder or view. Including multiple windows with the same Inbox or Calendar. Any updates to the folder will show up in all windows.

### WORD

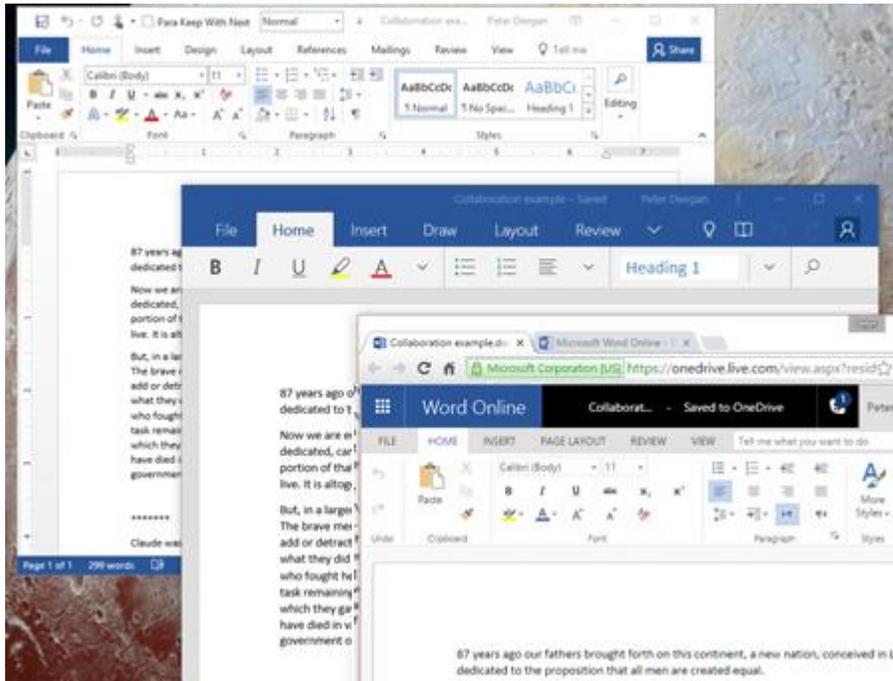
Word can't open the same document in two windows, but you can cheat!

In Windows 10 you can have more than one Microsoft Word - the desktop app (Word 2013 or Word 2016), the mobile/Windows 10 app or Word Online (Word in a browser).

## Windows 10 for Microsoft Office users

Virtual Desktops - Same document / different desktop

Here's the same document, open for editing in each of the three Word variations.



That means you can open the same document twice or thrice; once in each program. Then put those programs on different virtual desktops.

The document has to be saved on OneDrive or some other service that supports document collaboration.

### POWERPOINT

Like Word, you can open a PowerPoint presentation on PowerPoint 2013/2016, PowerPoint Mobile app and PowerPoint online.

The presentation has to be saved on OneDrive or some other service that supports document collaboration.

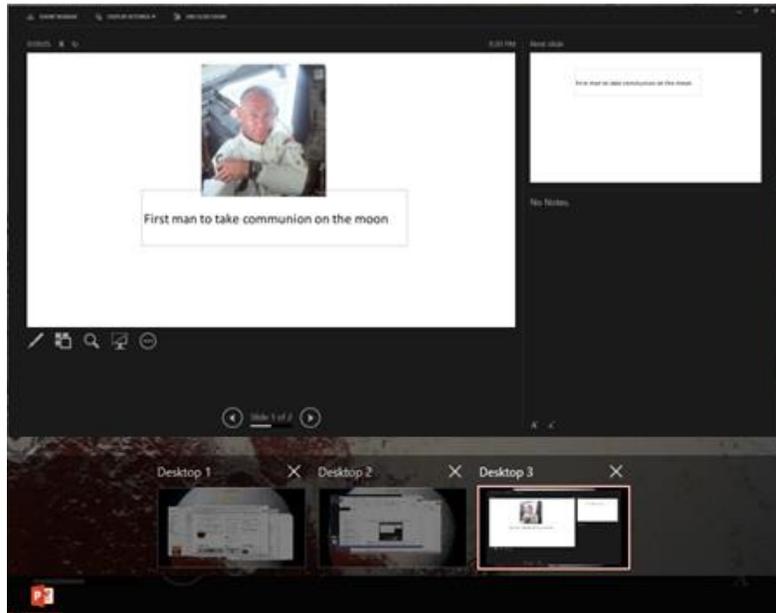
### PRESENTATIONS

A slide show is in a different window to the PowerPoint edit view. This isn't clear because the Presenter view automatically goes full screen, hiding the windows behind it.

## Windows 10 for Microsoft Office users

Virtual Desktops - Same document / different desktop

Presenter View is a separate window and can be moved to another virtual desktop.

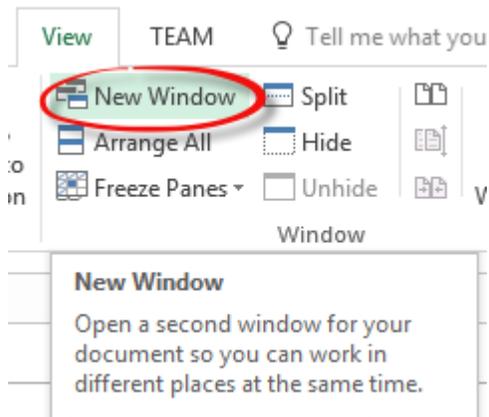


That opens up the interesting possibility of showing (or at least testing) a slide show on one virtual desktop while editing the same presentation on another desktop.

## EXCEL

You can do the same 'three program' trick with an Excel worksheet but you don't need to.

Excel lets you open the same worksheet in separate windows - View | New Window.

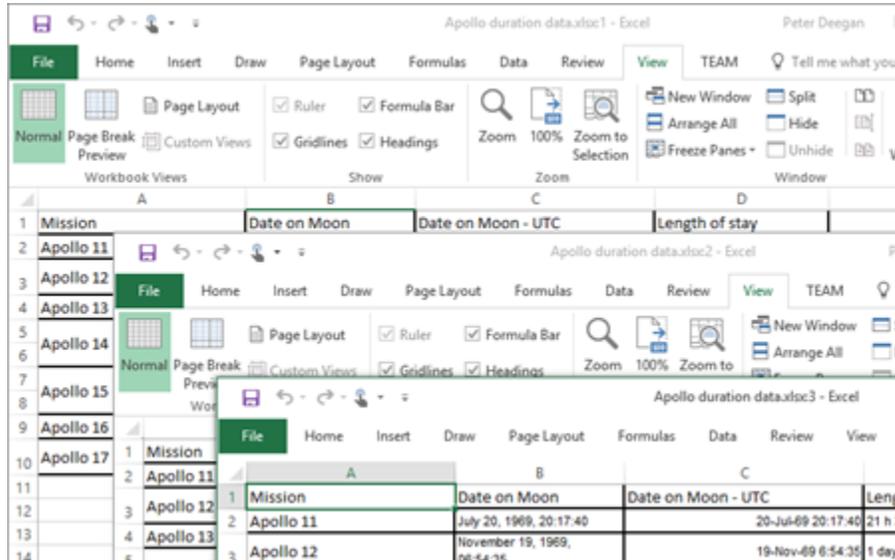


## Windows 10 for Microsoft Office users

Virtual Desktops - Same document / different desktop

This feature was intended to let you view different parts of a large worksheet in different windows. But it can be used for virtual desktops too.

Here's the same worksheet open three times in Excel 2016.



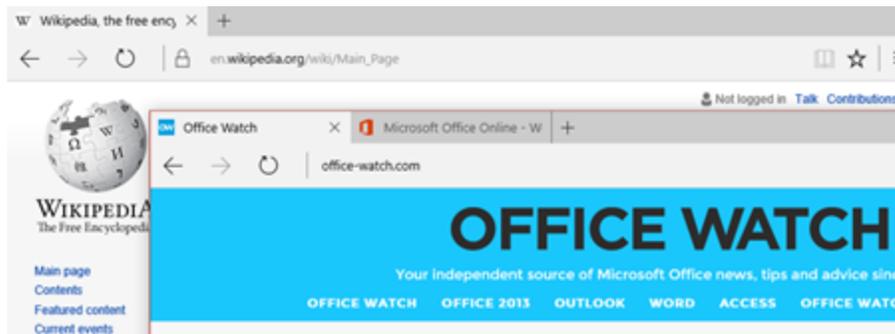
The worksheet can be saved anywhere.

## BROWSERS

All modern web browsers have multiple tabs on windows. Those windows can be moved between separate browser windows.

Each browser window (and any tabs on it) can be moved to another virtual desktop.

Here's an example using Microsoft Edge; there are two browser windows open, one has a single tab (web site) while the other window has two tabs. Each window can be on a different virtual desktop.



Check your browser help for details but they all work much the same. Tabs can be dragged between browser windows or dragged 'away' to make a new window.

## Windows 10 for Microsoft Office users

### Virtual Desktops - Shortcuts

Naturally, you can have the same web page displayed on two different tabs, and put the tabs on different windows / desktop. Most browsers have a 'Duplicate Tab' option (right-click on the tab) to make that easy.

## PHYSICAL SCREENS

Virtual Desktops take up all the physical screen space available.

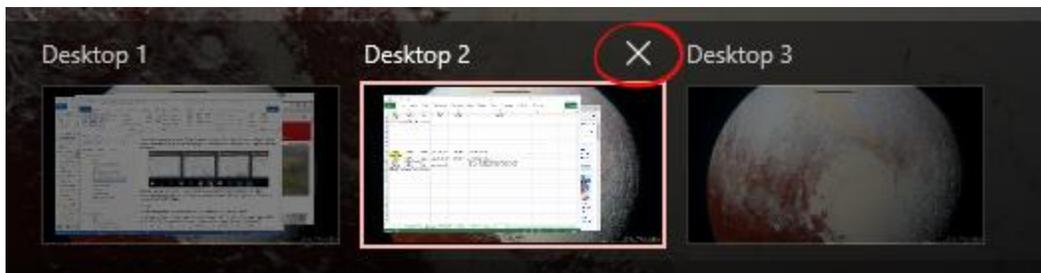
If you have two physical screens set to 'Duplicate' then the virtual desktop will be the size of a single screen.

But if you have multiple physical screens set to 'Extend' or span across the screens, the virtual desktops will be the size of the spanned screens. The desktop thumbnails in Task View show only the current screens part of the larger virtual desktop.

We can only hope for this to change in a future Windows. The ability to have different virtual desktops on different physical screens would open up many great possibilities.

## CLOSE A DESKTOP

On Task View, close a virtual desktop by clicking on the X at the top right corner of the thumbnail.



The close desktop shortcut is **Win + Ctrl + F4**

Whenever you close a virtual desktop it does NOT close the programs on that desktop. Any programs are moved to the next lowest virtual desktop – for example closing 'Desktop 3' will move those programs to 'Desktop 2'.

## SHORTCUTS

Here's a summary of the Virtual Desktop shortcuts.

- **Win + Ctrl + D** – Make a new virtual desktop and switch to it
- **Win + Ctrl + F4** – Close the current virtual desktop. The F4 key is the general 'close' key in Windows.
- **Win + Ctrl + Left / Right** arrows – Move to the virtual desktop on the left or right.

## Windows 10 for Microsoft Office users

### Virtual Desktops - Remote Desktop

After you've used Virtual Desktops for a little while you'll be yearning for another shortcut; to move the current program window to another desktop. We'll have to hope the Microsoft gods will oblige.

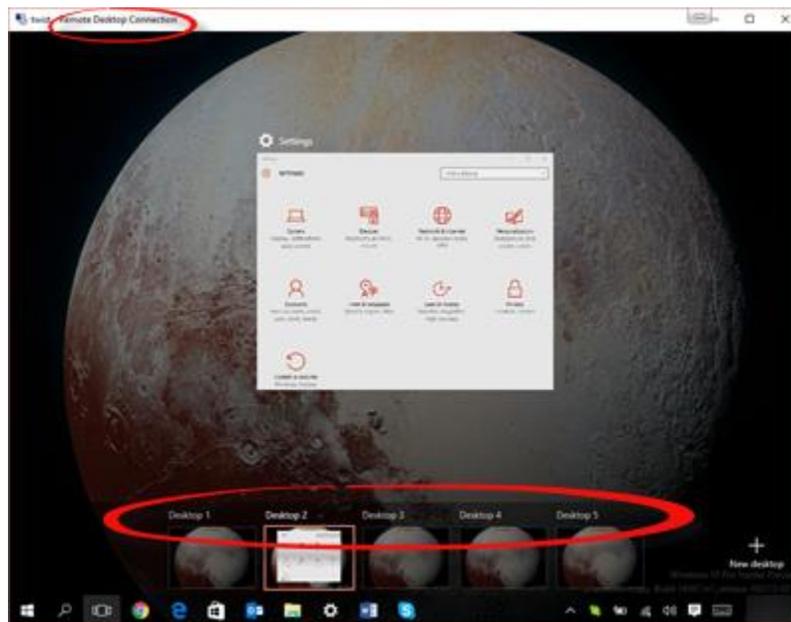
## REMOTE DESKTOP

How does Microsoft's Remote Desktop work with virtual desktops? Rather well really, either connecting to a Windows 10 computer or using Remote Desktop on a Windows 10 computer with virtual desktops.

### DESKTOPS ON REMOTE HOST

Virtual Desktops are available within a remote connection.

Here's a Remote Desktop window to a Windows 10 computer. As you can see, there are virtual desktops available because the remote computer runs Windows 10.



You may have a problem with desktop shortcuts because those keystrokes will be 'grabbed' by the main computer and not passed along to the remote machine. Use the on-screen actions instead.

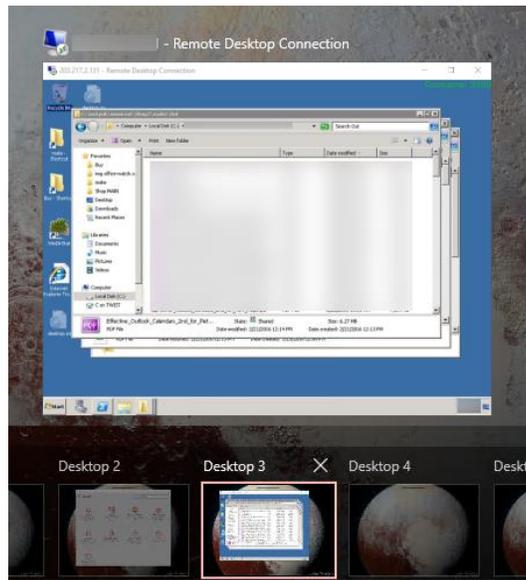
### REMOTE DESKTOP ON A VIRTUAL DESKTOP

A Remote Desktop window is just another program as far as the virtual desktops are concerned.

## Windows 10 for Microsoft Office users

### Virtual Desktops - Remote Desktop

You can put a Remote Desktop window on any virtual desktop.

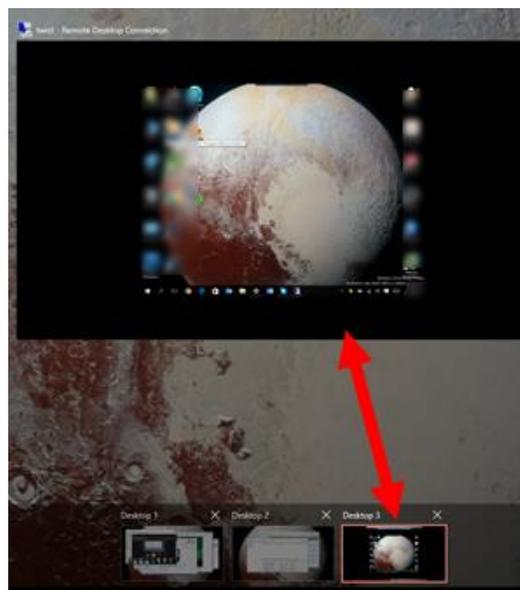


#### FULL SCREEN

A great trick with virtual desktops is to make a desktop show an entire program. This works well with Remote Desktop.

Place the remote desktop window on a separate desktop (as shown above) then switch the remote desktop to full screen mode.

Now the remote desktop view fills the entire virtual desktop – in effect putting the remote desktop seamlessly onto your screen as if it was 'real' on that computer, not remote.

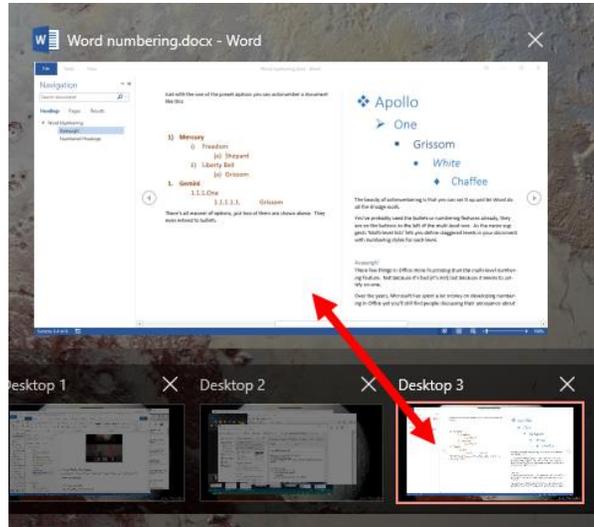


# Windows 10 for Microsoft Office users

## Virtual Desktops - Limitations

### FULL SCREEN PROGRAMS

Any program can be switched to 'full screen' so it takes up an entire virtual desktop. Here's Word in full screen read mode, filling up desktop 3.



### REMOTE DESKTOP

As mentioned [above](#), you can make a Remote Desktop window go full screen. Doing that makes the remote computer appear seamlessly on your physical computer.

### VIRTUAL MACHINES

Hyper/V, VMware Workstation and other virtualization programs have a full screen option. Like remote desktop, use this on a separate virtual desktop so the virtual machine shows up fully on your screen.

### LIMITATIONS

Naturally, virtual desktops have some limitations and considerations. Most of them are quite understandable though we wish Microsoft would improve some parts of the interface. We list these limitations so you can keep them in mind, also not waste time looking for a feature that's not available (yet).

There's no hard limit on the number of virtual desktops that we're aware of. We've made up to 50 virtual desktops just to test Windows 10. In practice that many desktops would be unwieldy.



## Windows 10 for Microsoft Office users

### Virtual Desktops - Limitations

A program on a hidden virtual desktop is still using up memory and computer resources. More important than the number of virtual desktop is the total resources, especially memory, being used. That's the case whether you're using virtual desktops or not.

You can't reorder the desktops, for example to put two related desktops next to one another.

There's no keyboard shortcut to jump directly to a specific desktop. The **Win + Ctrl + Left / Right** arrow shortcuts is the next best thing.

Labelling or renaming a virtual desktop isn't possible. It would be nice to label a virtual desktop (e.g. 'New web sites', 'Urgent Project', 'Game' etc.) instead of just numbers.

All virtual desktops have the same desktop background, unlike physical screens which can have different backgrounds.

### POWERSHELL

There are no PowerShell or Command Prompt commands for virtual desktops. No options to make a new desktop or open a program to a virtual desktop.

To date, Microsoft has provided a very basic shell interface called [IVirtualDesktopManager](#) for programmers.

### SAVING VIRTUAL DESKTOPS

Sleep and Hibernate will save the current Windows state, including virtual desktops.

You can't save a desktop configuration between logins (at least not by any regular means). However, if you shut down with virtual desktops running, Windows 10 will restart later with the same number of desktops available. Of course, those virtual desktops won't have any programs running in them.

### DESKTOPS VS MONITORS

*"A simple case of non-presence really."* – Monty Python.

The obvious difference between monitors/screens and Windows desktops is the physical nature of the former.

You can't drag programs between virtual desktops as you can with screens. Physical screens can have different backgrounds and resolutions.

## Windows 10 for Microsoft Office users

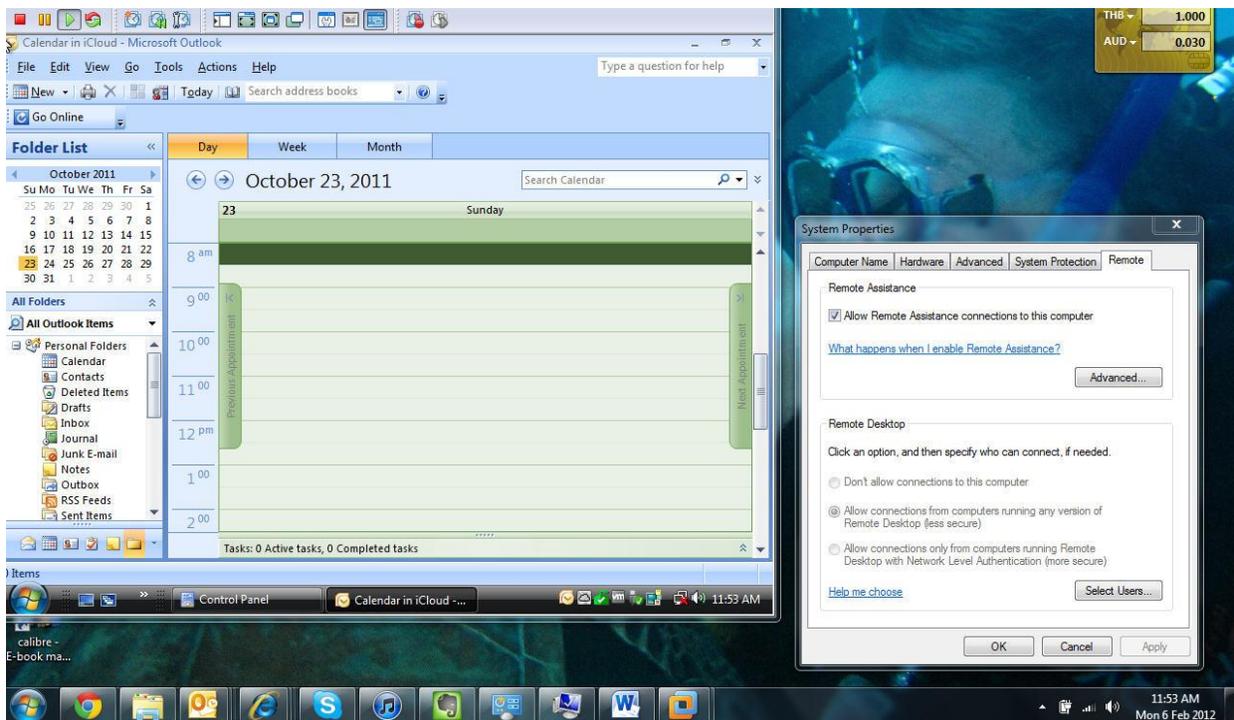
Remote Desktop - One Outlook – Two Computers

# REMOTE DESKTOP

Remote Desktop is a way to view one computer from the screen of another computer. The two computers can be next to each other or half a world away.

Remote Desktop is a way to operate one computer (e.g. a laptop) from another (e.g. desktop).

On the remote/desktop machine you can operate almost anything on the other computer. You can copy/paste to and from it, print files. With a fast LAN connection there's no noticeable time lag in response, it's as if you have a 'machine within the machine'. Here's an example of remote desktop on the main/desktop computer – click on the image to see a full size version.



On top left is the remote computer displayed in a window. In this case Outlook is taking up the full screen on the remote computer, but you can see the remote machines start button and taskbar at the bottom.

Once running you can switch between the remote desktop and programs on your main computer quite normally.

## ONE OUTLOOK – TWO COMPUTERS

There's an easy way to run a single copy of Outlook and use it on multiple machines – Remote Desktop.

## Windows 10 for Microsoft Office users

### Remote Desktop - Availability

We've heard from many Outlook users who move their PST data files between a laptop and desktop computers. With Remote Desktop you can view the computer with Outlook from another machine.

For this article we'll talk about the remote computer as being a laptop and the computer you're working from as a desktop. They can be any two computers however the "laptop displayed within a desktop" is a common situation so we'll use that wording here. This can be a very useful option when one is travelling with a laptop.

Remote Desktop is good as a work-around for the problem of managing multiple Outlooks but has other uses. It lets you run software on a powerful computer (eg a desktop) while working from a slower machine. You can operate expensive software from another computer without having to pay for another license.

In short, we get many questions about installing Office or accessing documents that can be fixed with creative use of Remote Desktop.

There are options for remotely operating a computer from anywhere on the Internet and we talk about them [below](#). In this chapter we'll focus on the faster and easier connection within a home or office local network (cable or wifi).

## DEFINITIONS

**Local computer** – the computer you are working at.

**Remote computer** – the computer you are connecting to and showing in a window.

**Server** – the remote computer, which is 'serving' to the **client** or local computer.

**RDC** – the usual acronym for Remote Desktop Connection.

## AVAILABILITY

There are two parts to the availability of Remote Desktop. The server/remote part (which lets a computer receive RDC requests) and the client/local (to view RDC from elsewhere)

### SERVER / REMOTE

Remote Desktop server component is available with higher priced versions of Windows.

Specifically:

- Windows 10 Pro, Enterprise and Education

The more recent versions of Remote Desktop have additional features however they should connect to older versions, just without supporting the newer technologies.

## Windows 10 for Microsoft Office users

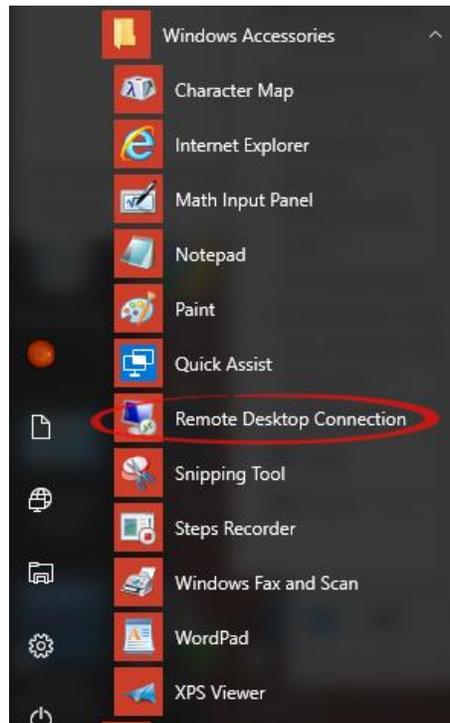
### Remote Desktop - Firewalls

#### CLIENT / LOCAL

On the client / desktop side you need the Remote Desktop client software.

Windows 7, 8 and 10 machines should have the latest client software installed automatically.

It's under Windows Accessories in the Start Menu | All Programs list.



Or just tap the Start button / Windows key then type 'Remote' and it should appear in the search results.

There is also a [Remote Desktop preview](#) app for Windows 10 that currently has limited functionality.

Windows 7/8 users should have the latest client installed but if you want to check go [here](#). It's a Microsoft web page that should detect the version of Windows and serve up the right software.

There are also Remote Desktop clients for Android, Apple iOS and Mac available from [Microsoft](#).

## FIREWALLS

Getting Remote Desktop connections to work can be complicated because of modern internet security.

Connections on a local network are fairly simple. All you have to do is ensure that any firewall will allow RDC to communicate through it.

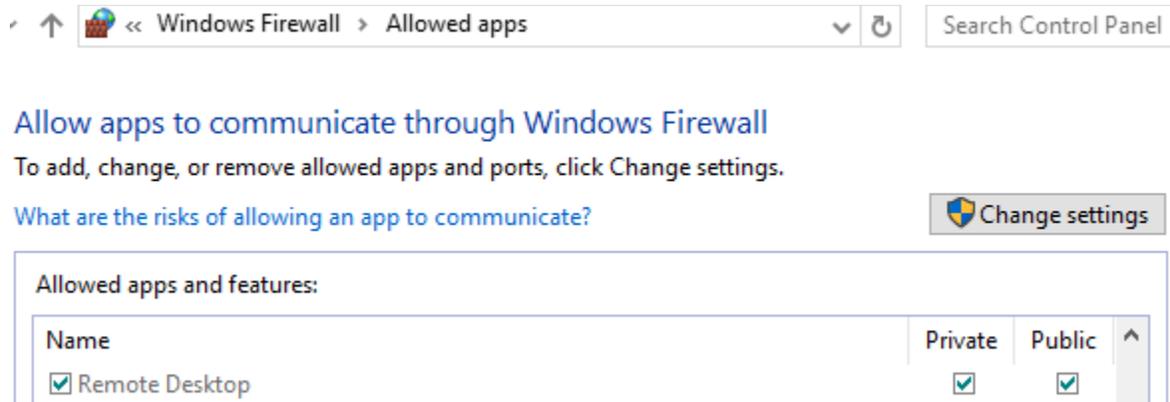
# Windows 10 for Microsoft Office users

## Remote Desktop - First timers

*Remote Desktop uses port 3389 (TCP and UDP), an important number to remember in any RDC setup.*

Windows Firewall *should* handle Remote Desktop automatically but you may need to double-check that an exception is in place.

Go to Control Panel | Windows Firewall | Allowed Apps. Ensure that Remote Desktop is allowed for Private (local) networks and, if necessary Public (Internet) access.



If you have another firewall service, it will need separate configuration to allow Remote Desktop connections.

## FIRST TIMERS

Running Remote Desktop for the first time can be frustrating. You have to get the configuration on both computers exactly right. The few error messages from Remote Desktop aren't a lot of help.

If you're first trying Remote Desktop, we suggest using it on two computers on a local network, preferably right next to each other. That's the simplest configuration to start with and, if they are both in easy reach you can easily tweak the settings on either machine.

If you get stuck, check the Firewall settings on both remote and local machines. That's the most common problem. At worst, try turning off a firewall entirely for a short time to see if RDC will work. If RDC works without the firewall, then you know the firewall settings need changing. Remember to turn the firewall back ON, immediately after a test.

Another possible problem is name resolution on a LAN. Try using the IP address of the remote/server computer, instead of the name. That will work around any name problem (at least while testing).

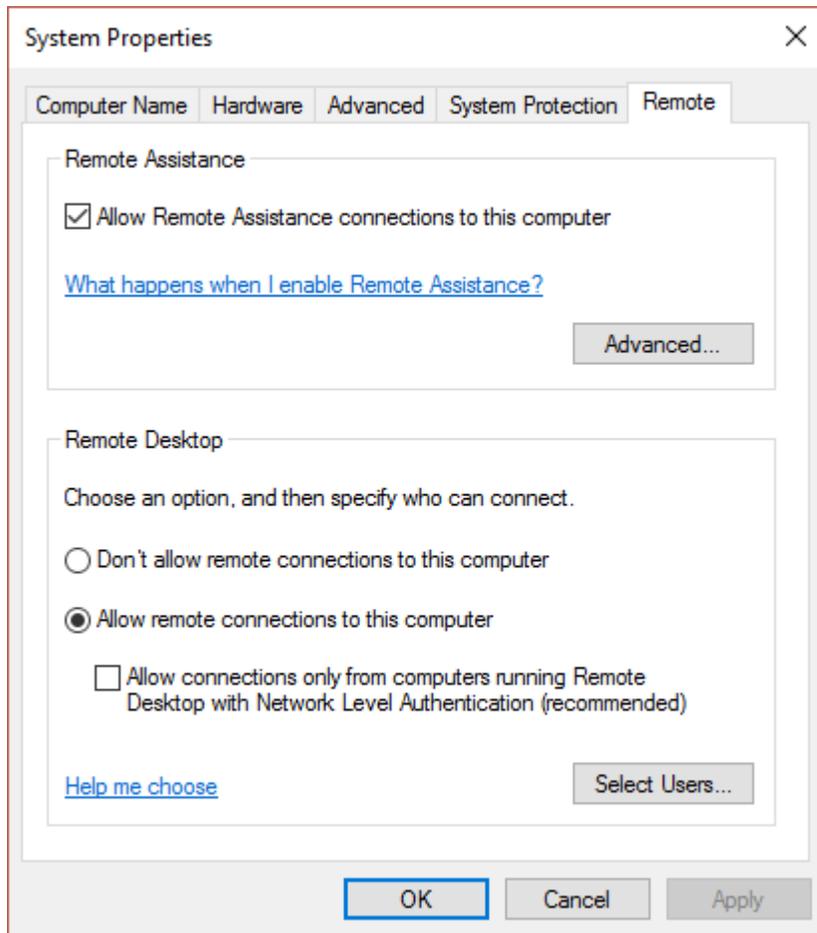
# Windows 10 for Microsoft Office users

Remote Desktop - Remote Setup

## REMOTE SETUP

Remote Desktop has to be configured on the machine to be controlled (ie the laptop machine in this example).

The configuration is done in the Advanced System Properties tab – right-click on the Start button | System. This is the dialog box in Windows 10 – it's not changed much for recent versions of Windows.



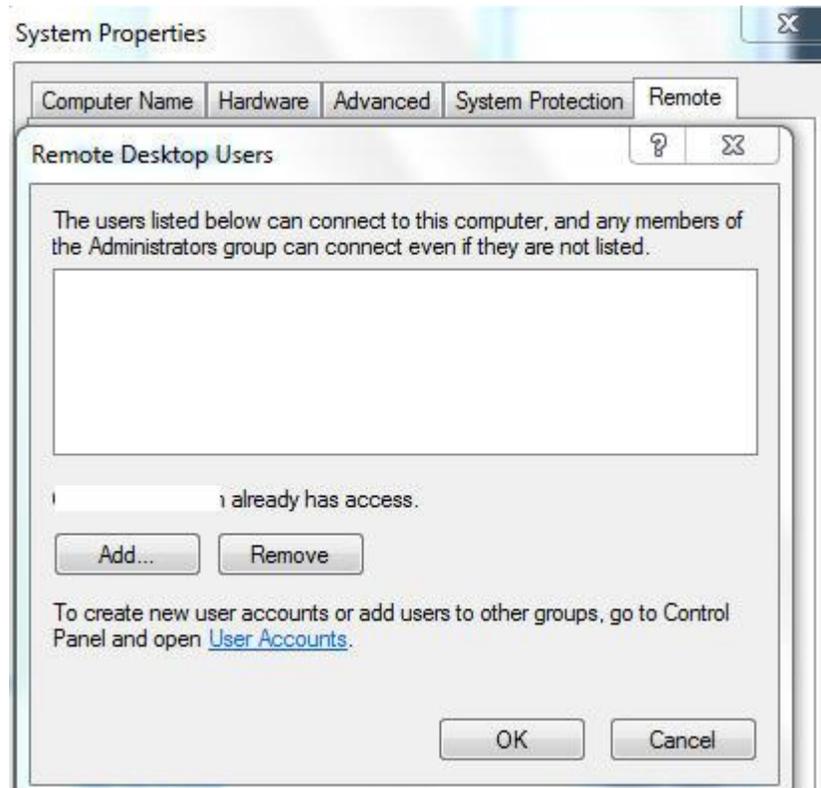
Make sure the 'Allow remote connections to this computer' is selected but 'Allow connection only from computer running Remote Desktop with Network Level Authentication' is OFF. This gives you maximum compatibility across versions of Windows.

As with many Windows features, corporate users may be blocked from using Remote Desktop by their network administrators. If so, these options will be greyed out.

## Windows 10 for Microsoft Office users

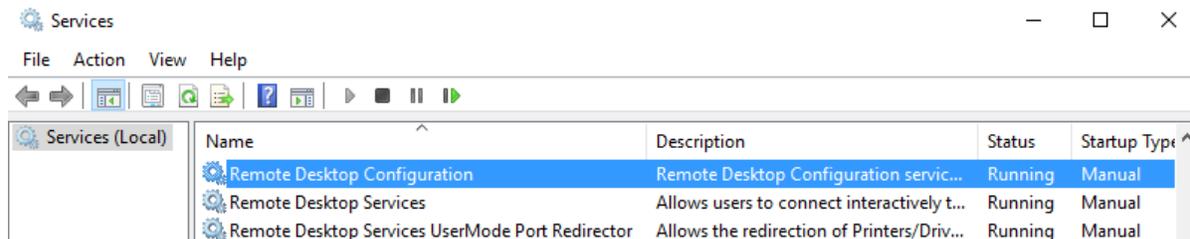
### Remote Desktop - Local Setup

Then click 'Select Users' to choose the user logins that can access this computer.



All Administrator level users are automatically allowed remote access. Click Add to select other users who can login remotely.

At a deeper level, Remote Desktop runs as a Windows service. Go to Controls Panel | Administrative Tools | Services and scroll down to the Remote Desktop entries.



You normally won't have to worry about the services except if troubleshooting.

## LOCAL SETUP

Once Remote Desktop is setup on the computer you're connecting to (ie laptop), switch over to the other machine (ie desktop) to use the Remote Desktop client software.

Make sure the remote computer is running and connected to the local network. You need to know the remote computer machine name or IP address.

## Windows 10 for Microsoft Office users

### Remote Desktop - Local Setup

On the local / client machine start Remote Desktop from the Start Menu.

Type in the name or IP address of the remote computer.



Click Connect and, if all has been configured properly, you'll see a new window on the main machine with a login prompt for the remote computer. Enter the login for the remote machine (there's a special button for Ctrl+Alt+Delete if you need it).

Then you can start any program on remote machine, like Outlook, and it'll run quite normally. Simply use the Start Menu or taskbar inside the remote desktop pane.

Give a few things a try like copying something to the clipboard then pasting it into a program on the other computer.

When you take the laptop away from the local network you can simply disconnect the machine and walk away. The remote desktop session will disconnect automatically.

That's just the 'Quick Start'. There are many, very useful, options available especially for regular users.

## Windows 10 for Microsoft Office users

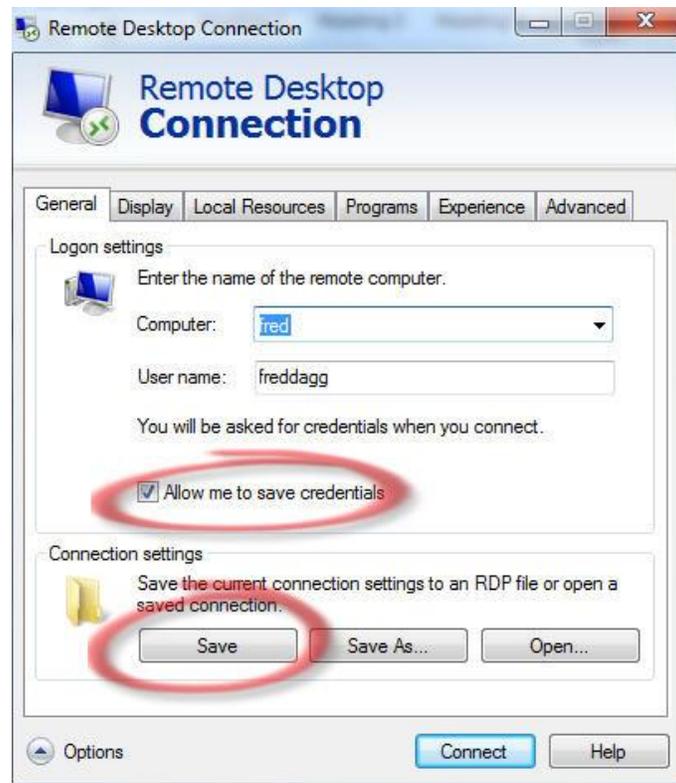
### Remote Desktop - Local Setup

Here's a quick tour of some Remote Desktop options available when you click the Options button on bottom left of the opening dialog:



### GENERAL

For the faster start of a remote connection, click 'Allow me to save credentials' and type a user name into the box. You'll be prompted for the remote computer password during the next connection.



## Windows 10 for Microsoft Office users

### Remote Desktop - Local Setup

Click on Save ... the computer name, user name and password, plus other settings detailed below are all saved in an RDP file.

When you next choose that computer, you have the choice to edit or delete the login credentials or just choose Connect to login.



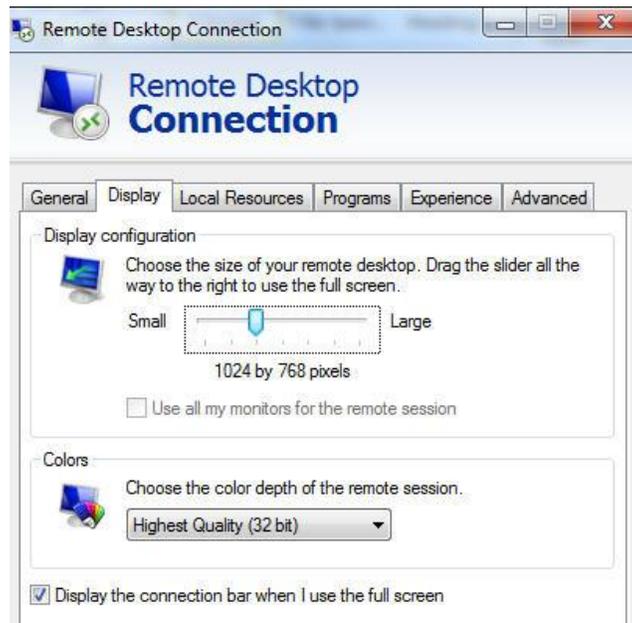
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*Tip: create a shortcut to regularly used .RDP files and put them on your start menu.*

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## DISPLAY

This is where you control the size of the display on the remote computer and therefore the amount of space it takes on the main computer screen. This is a setting you might tinker with before finding a size that works for you.



A higher resolution and color depth takes up more network bandwidth. On a local network connection, 32-bit color should work OK.

## Windows 10 for Microsoft Office users

### Remote Desktop - Local Setup

You can make the remote computer take up the entire screen on the main computer. To return to the main computer click a button the connection bar that appears at the top of the screen.

### LOCAL RESOURCES

### SOUND

When a sound is played on the remote computer, Remote Desktop gives you three choices

- Play on the controlling/local computer
- Don't play at all
- Play on remote computer



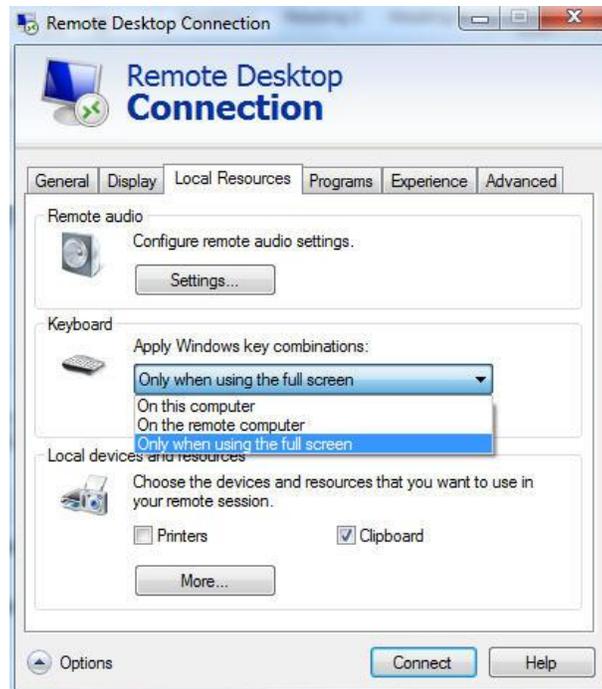
Which option you choose is up to you. Sometimes we play music from iTunes or Windows Media Player and let it play on the remote computer because both machines are in the same room and the remote computer has better speakers! Other times the remote computer is in another room so we get the sound to play on the local computer.

# Windows 10 for Microsoft Office users

## Remote Desktop - Local Setup

### KEYBOARD

When you type a special Windows key shortcut like Alt+Tab, Windows needs to know whether you mean that command to apply to the main computer or the remote one.



By default, Windows key combos apply to the main computer except when you have the remote computer in full screen mode.

### LOCAL DEVICES AND RESOURCES

When you do a Print command on the remote computer it will normally print from a device connected to that computer. If you click on the 'Printers' choice, the printer/s on the main computer will be available to the remote machine.

With 'Clipboard' checked (the default) the remote and main computers share the same clipboard for cut/paste. This is very useful and highly recommended to leave on.

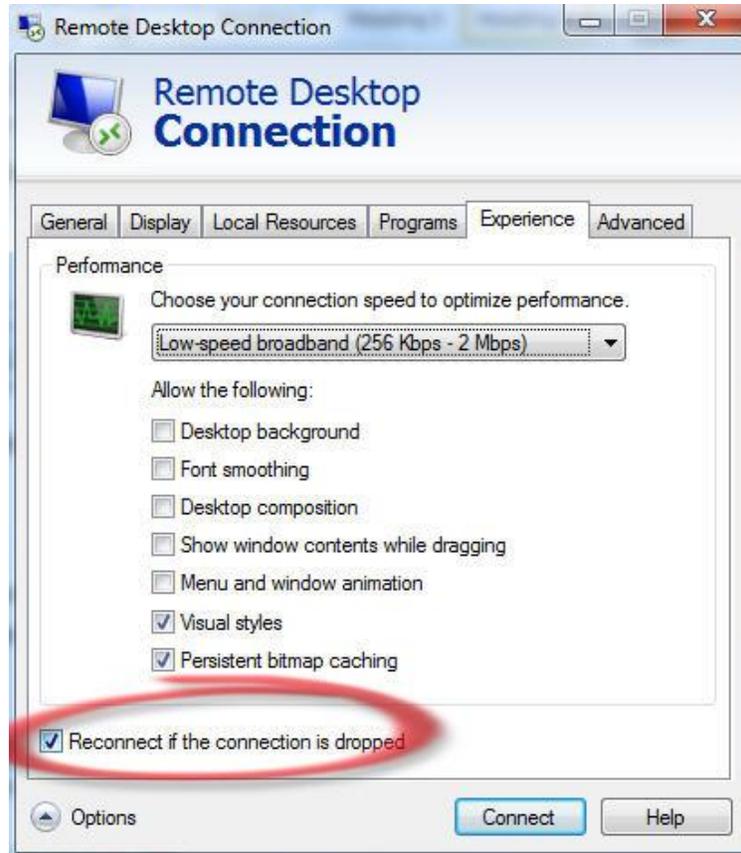
Most people don't need to bother with the Programs tab.

## Windows 10 for Microsoft Office users

### Remote Desktop - Local Setup

#### EXPERIENCE

There are predefined settings to change the display settings depending on the speed of the network connection. The full speed LAN setting turns on all the options listed.



We sometimes switch to 'Low-speed broadband' which turns off the fancier display choices (like showing windows while dragging) but still gives a good display. 'Persistent bitmap caching' should always be left on.

Make sure 'Reconnect if the connection is dropped' is always on. This lets Remote Desktop recover seamlessly from a short network break.

## Windows 10 for Microsoft Office users

### Remote Desktop - Over the Internet

#### ADVANCED

Buried under Advanced is an important setting. For individual users there will be no server authentication (that's for large corporate networks) but the default is to warn you every time.



Change the setting to “Connect and don’t warn me” to bypass the unnecessary dialog.

‘Connect from anywhere’ applies to people connecting to remote computers in an organization. Individual users can ignore this.

## OVER THE INTERNET

Remote Desktop works well for compatible Windows computers on the same local network, but for communication across the Internet it gets complicated.

The Remote Desktop client has to jump over various technical hurdles to reach across the Internet, through your modem and to the correct computer in your home/office.

We can’t give specific help on these topics because it depends on your Internet connection, modem, port blocking and firewall settings. Instead we’ll give you a broad explanation of the issues with key phrases that will help you find the specific settings on your equipment.

## Windows 10 for Microsoft Office users

Remote Desktop - Over the Internet

### ADDRESS RESOLUTION

As you probably know, the computer and web site names we use are human versions of the true connection identifier, the IP address. For example when you go to [www.office-watch.com](http://www.office-watch.com) your computer translates that to an IP number (say 203.123.123.123). The same happens on a LAN; a computer called 'Fred' is known to the computers by its number (say 192.168.0.34). Translating between the name and the IP address is called *name resolution*.

Web sites have fixed IP addresses that only change occasionally. But most home and small businesses have a changing dynamic IP.

When your modem connects to the Internet, it's allocated an IP address by your ISP. Each time the modem connects, it's given a different IP address (from a pool of IP numbers available to the ISP). That means you can't directly connect to a computer in your home/office because the incoming Internet IP address keeps changing.

The workaround for that is to either:

- Ask your ISP to allocate you a 'static IP' meaning that you'll get the same IP address whenever your modem connects. There's usually a charge for this and the fee is often far greater than the minimal cost to the ISP.
- Your modem will probably have a 'Dynamic IP' option. This is an external service which supplies a domain name which is updated whenever the IP address changes. Whenever your modem connects to the Internet, it immediately notifies the new IP address to the dynamic IP service.

Once it's setup, the Remote Desktop client can reach your home network from across the Internet using either the static IP address or dynamic name.

### PORT REDIRECTION

An internet modem usually supports multiple computers connecting to the Internet. There's a single 'internet facing' IP address (from the ISP, as mentioned above) for the multiple computers on your local network.

(it's wrongly said that every computer on the Internet needs a unique IP address. That's true but many computers share an IP address visible to the Internet through a trick called Network Address Translation. You don't have to worry about NAT since the modem handles that automatically.)

For an incoming Remote Desktop connection, the modem needs to know which computer should get the connection.

By default, incoming connections on RDC port 3389 (TCP & UDP) will be blocked entirely. Most incoming ports are blocked as a security measure.

Check your modem for *port forwarding* or *port redirection* settings to enable connections on port 3389 (TCP & UDP) and send them to a specific computer on your network.

## Windows 10 for Microsoft Office users

### Remote Desktop - Alternatives

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*You can also allocate your remote desktop server machine a static IP address within your local network. Do this from your modem or wherever the DHCP service is running. DHCP allocates IP addresses and records machine names within a network.*

---

There's a small possibility that the internet service you're using 'on the road' will block attempts to connect using port 3389 among many. Some hotel, café or other public connections get overzealous and limit users to the most common outgoing Internet connections for web browsing, email etc. This is rare but worth keeping in mind if you can't connect.

#### FIREWALL

We've already mentioned the firewall protections on the remote desktop remote/server computer.

There's also the possibility of a firewall block by your modem on specific ports like port 3389 (TCP & UDP).

#### VPN

One way around some of the Remote Desktop connection issues is to use a [Virtual Private Network](#) Connection.

Some modems include VPN support as an option. With VPN enabled, you can connect from anywhere on the Internet to the modem and your local network. Once a VPN connection is running, you can use RDC to link with any computer on the LAN.

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*VPN support is something to consider when next upgrading your modem. It's usually available on high-end models, but such models are not always available on store shelves.*

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## ALTERNATIVES

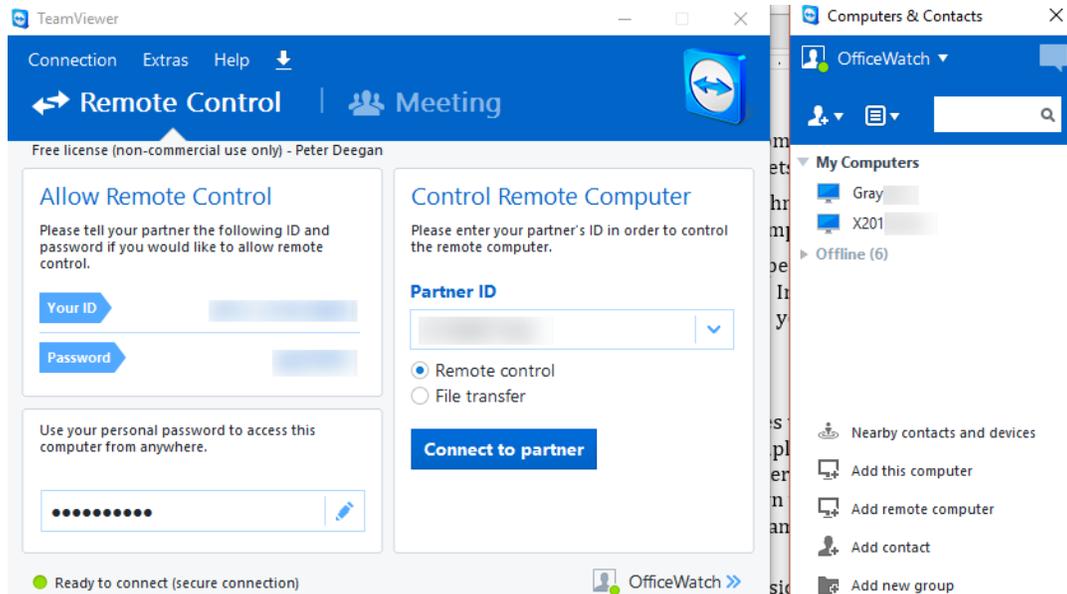
If you can't use Windows Remote Desktop there are other choices.

# Windows 10 for Microsoft Office users

## Remote Desktop - Alternatives

### TEAMVIEWER

TeamViewer is free for personal use. You install it on both computers and setup a free account on their service. Connections are made automatically across the Internet and without special modem routing.



Teamviewer has support for Mac, Linux and mobile devices as well as Windows (a paid service may be required for some). It displays the current session on the computer, not a separate login.

### VNC

VNC is an open source remote control system. It isn't as efficient as other remote options but has many features and has versions for many operating systems. <http://realvnc.com/> and <http://ultravnc.com/> are the two major variants available.

You need to configure special ports on your modem to use VNC remotely however VNC can be called from any web browser (rather than needing special software at the remote end).

The main advantage of VNC for Windows users is that it displays the current session running on the computer.

# VIRTUAL PRIVATE NETWORK

Virtual Private Networking (VPN) has been around for some time but is now an important part of computer security for everyone.

## WHAT IS VPN?

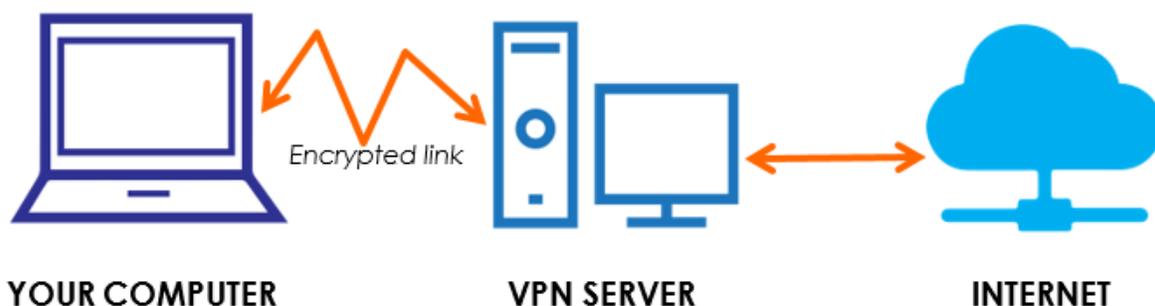
Virtual Private Networking is a way to connect computers securely over the internet so that the machines act as if they were on the same local network. Think of VPN like a long network cable between your computer and another computer that could be half-way around the world.

Originally VPN systems allowed remote computers (say at a branch office or home workers) to link with the main organizations network as if they were actually in the office.

The connection between the remote computer and the main network is encrypted. Anyone trying to spy on the files and information flowing between the machines won't be able to understand anything.

For general use, the encrypted link is handy when there's a risk that normal internet traffic might be intercepted, like an unsecured wifi connection. The VPN encryption provides an additional layer of protection for your communications. It's not a replacement for other Internet security measures.

If the network (VPN Server) you connect with is linked to the Internet then the remote computer might also connect to the internet.



To any site on the Internet, the remote computer appears to be at the physical location of the VPN Server. (nerd speak: the visible IP address is from the VPN server and not the remote computer)

The real location of the remote computer is hidden behind the VPN link. Web sites use the visible IP address to figure out your approximate location (there are massive databases of IP addresses, who owns them and their location).

## Windows 10 for Microsoft Office users

### Virtual Private Network - Definitions

To demonstrate this, we'll use one of the many IP address viewing sites on the Internet. Here's what we see with a normal Internet connection. As you can see, Peter is working in the UK as he types this.

Your IPv4 Address Is:  
**2.28.66.**



Now we start a VPN connection to a server in Japan and check the visible IP address again. Now the IP address is quite different and the internet thinks the computer has moved to Tokyo in less than a minute!

Your IPv4 Address Is:  
**161.202.72.**



Of course, there are many other locations he could have chosen.

## DEFINITIONS

**Remote computer / VPN client** – the computer which starts the VPN connection. In this case, your Windows computer but can be almost any modern computer. MacOS, Apple iOS and Android all support VPN connections.

**VPN server** – a designated computer which accepts incoming VPN connections.

**VPN Protocol** – the method of connection between the remote computer and VPN server. There are various protocols available.

## Windows 10 for Microsoft Office users

Virtual Private Network - Why use it?

### WHY USE IT?

#### **More secure communications.**

All your Internet communications (web browsing, email, downloads etc) is encrypted between your computer and the VPN server. That's on top of any other encryption already in place (like secure https:// browsing).

That's especially useful on open, unencrypted wifi connections which could be 'snooped' by people trying to get personal information from you.

Even on secure wifi connections, a VPN connection hides not just the Internet traffic but also what you are doing and which web sites you're connecting to.

#### **Location spoofing**

Some web sites and services are 'geo blocked' and only work for computers in a particular region. Video streaming services like Netflix only work for customers in a certain area.

Sometimes a company, like Microsoft, will initially release a service in a limited area before expanding globally. If you're impatient, use VPN to pretend you're in the service area now.

A VPN connection can work around those blocks by using a VPN server within the permitted area. For example, someone in Brazil can connect to a German VPN server to use a European service. Many people around the world use VPN to the USA so they can use American video streaming that's not available in their home countries.

#### **Going home**

Location spoofing can also work in reverse. Use a VPN connection when travelling so it appears you're still in your home country. An 'American in Paris' can use a VPN connection to the USA so it seems they've not left the country.

This trick is extremely useful in countries which have very restrictive Internet use. China has it's infamous 'Great Firewall' which can stop you using familiar sites like Gmail and Skype among many. The United Arab Emirates also greatly limit the sites you can access, and Cuba prevents access to Skype.

---

*It's important to buy and setup a VPN service before you travel. China and the UAE block access to the web sites of most VPN service providers so it's difficult (almost impossible) to setup an account while you're in one of those countries.*

---

## DOWNSIDES

There are two major downsides to using a VPN.

**Cost** – most of us have to pay for a VPN service, though the cost is very low (under US\$50 for a year).

**Speed** – all your internet traffic has to travel further and through the VPN server. That can reduce the speed of your Internet access. For regular browsing these delays might be barely noticeable but will slow down file downloads, video streaming and video calls.

## VPN PROVIDERS

There are many VPN providers available, a web search will turn up a bewildering number of links and options.

### WHAT TO LOOK FOR

**Bandwidth** – check for any bandwidth or use limits.

**Logins** – Multiple simultaneous logins should be allowed, so you can use VPN on multiple devices at the same time. A five simultaneous login limit seems common.

**Locations** - Range of VPN servers across the globe and in any particular country or region you need.

**Speed** - The VPN servers need to pass through your Internet traffic quickly.

**Reliability** – if a VPN server breaks down how quickly before it's restored?

**Operating Systems** – the provider should support all the major devices: Windows and Mac computers plus Apple, Android and Windows tablets/phones.

**Protocols** – At minimum the service should support both OpenVPN and L2TP/IPsec.

**Cost** - Annual charges are the cheapest overall.

**Proxy Server** – this is optional but useful alternative to VPN. A few providers offer proxy as part of their plans.

For maximum privacy, look for a VPN service which has anonymous payment options that can't be traced back to you.

Many people buy a single month of VPN service or use a free trial offer to start with and, if that works out, pay the annual rate.

### SUGGESTIONS

To give you a head start, we asked our friends what VPN service they use. All of them use VPN for one reason or another, either on a regular basis or as a standby in special situations.

## Windows 10 for Microsoft Office users

### Virtual Private Network - Setup

- [Purevpn](#)
- [Private Internet Access](#) – also has a proxy server option
- [Witopia](#)

If you want to check the IP address and location visible to the Internet, there are many web sites to help

- <https://whatismyipaddress.com/>
- <http://www.ipfingerprints.com/>
- <https://www.whatismyip.com/>

## SETUP

Most VPN service providers include their own client software for Windows and other platforms. The easy path is to use that software and the instructions they supply.

We'll take you through the basic VPN setup for Windows so you can use the in-built option. Most VPN providers also support Windows L2TP/IPsec as an option.

### PROVIDER SUPPLIED

The client software from the VPN provider is the easiest option, especially for newcomers to VPN.

A single download and install should setup the software and configuration in one go.

### OPEN VPN

Open VPN is the well-respected VPN protocol that most, if not all, VPN providers use. The client software supplied by providers is usually a customized version of the free Open VPN client.

Some people prefer to use the independently checked software rather than the provider's version. The downside is that Open VPN isn't as easy to use, particularly when switching different VPN locations.

Before you begin get some configuration details from your VPN provider - your login name and password plus the domain names for any VPN servers you want to use. You'll need a set of OpenVPN configuration files from your VPN provider.

Download Open VPN Windows client from <https://openvpn.net/index.php/open-source/downloads.html> don't use any other site to make sure you have the latest and untampered version. The installation is straightforward so we won't insult your intelligence going over the details. There is plenty of [help](#) on the OpenVPN.net web site if you need it.

## Windows 10 for Microsoft Office users

### Virtual Private Network - Setup

Once the OpenVPN client and the provider's configuration files are installed, right-click on the OpenVPN icon in the system tray.

## WINDOWS

Here's how to setup a VPN using Windows alone.

### L2TP/IPSEC

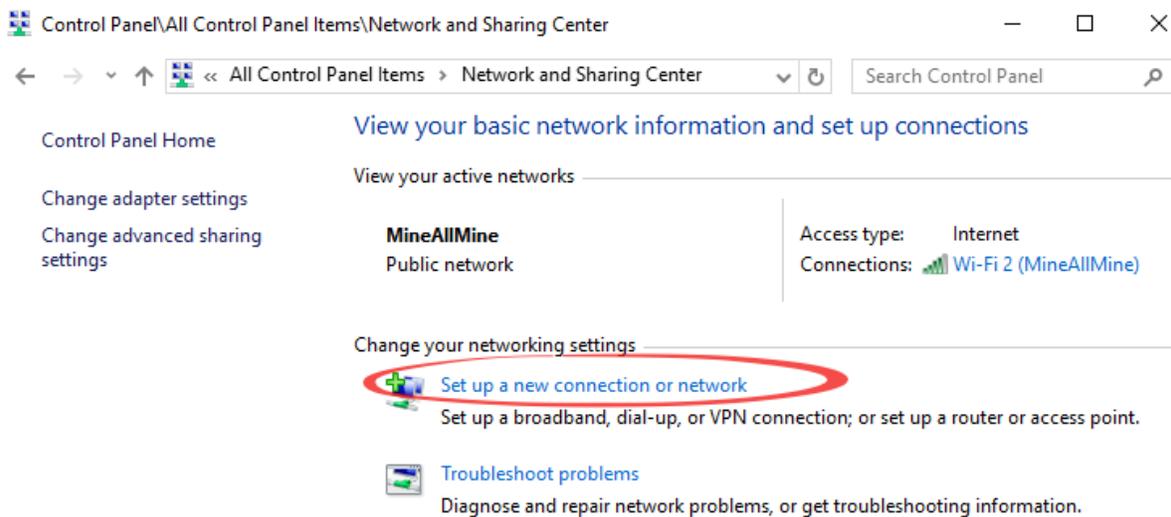
Microsoft supports L2TP/IPsec as the main VPN protocol. Sadly, that choice isn't well regarded outside the Redmond campus. Independent analysts prefer OpenVPN for greater security and privacy.

Most VPN providers also support L2TP/IPsec so you can use it without installing extra software.

There are two ways to setup a VPN connection in Windows 10, either Control Panel or the newer Setting pane.

### CONTROL PANEL

Go to Control Panel | Network and Sharing Center then choose 'Set up a new connection or network'.



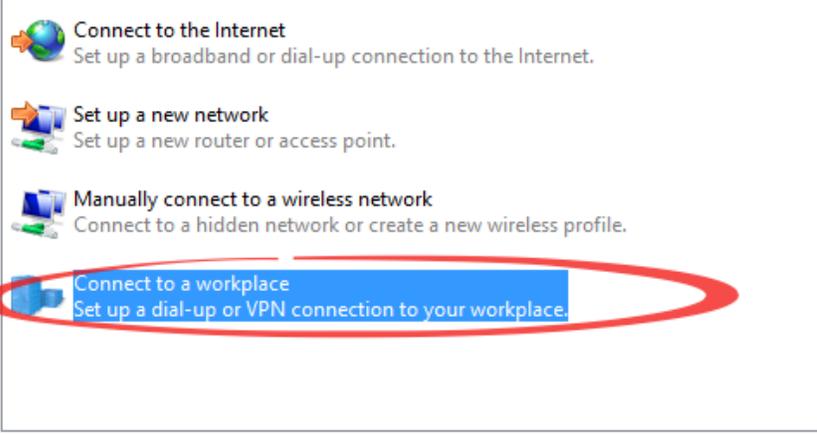
# Windows 10 for Microsoft Office users

## Virtual Private Network - Setup

Then choose 'Connect to a workplace'

←  Set Up a Connection or Network

### Choose a connection option



Connect to the Internet  
Set up a broadband or dial-up connection to the Internet.

Set up a new network  
Set up a new router or access point.

Manually connect to a wireless network  
Connect to a hidden network or create a new wireless profile.

**Connect to a workplace**  
Set up a dial-up or VPN connection to your workplace.

Next

It is possible to VPN via a dial-up connection but you'll almost certainly VPN via the existing Internet connection.

←  Connect to a Workplace

### How do you want to connect?

→ Use my Internet connection (VPN)

Connect using a virtual private network (VPN) connection through the Internet.



→ Dial directly

Connect directly to a phone number without going through the Internet.



Cancel

## Windows 10 for Microsoft Office users

### Virtual Private Network - Setup

Enter the domain name of the VPN server plus a label for you to identify it.

←  Connect to a Workplace

Type the Internet address to connect to

Your network administrator can give you this address.

Internet address:

Destination name:

Use a smart card

Remember my credentials

 Allow other people to use this connection  
This option allows anyone with access to this computer to use this connection.

Some organizations use smart card to login, choose that option if it applies.

**Remember my credentials** - this will save you entering the login name and password each time.

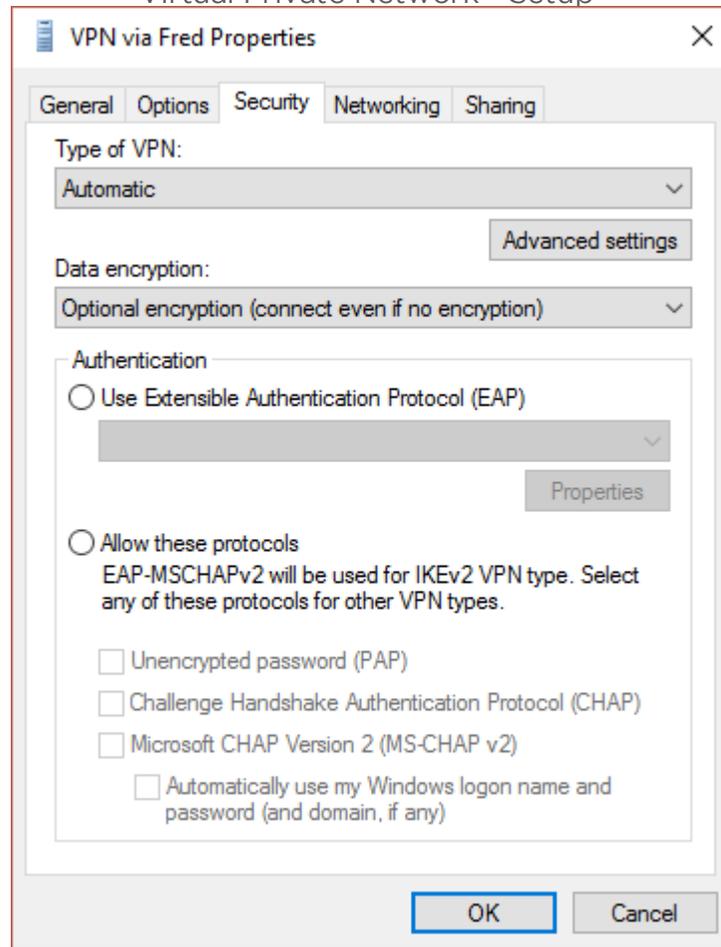
**Allow other people to use this connection** – exposes this VPN option to all user accounts on the computer.

Choose 'Create' then open Settings | Network & Internet | VPN to see the addition to your connection options. The settings for a VPN connection are available by right-clicking on a connection and choosing Properties.

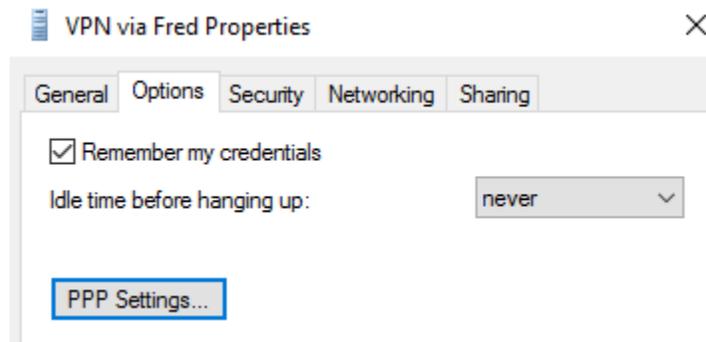
The default security settings are usually OK. You might need to specifically choose the 'Type of VPN' (Protocol) to match the VPN Provider. 'Data encryption' should be set to optional, at least at first when testing a new connection.

## Windows 10 for Microsoft Office users

### Virtual Private Network - Setup



The other useful option is 'Remember my credentials' to save your login name/password between connections.

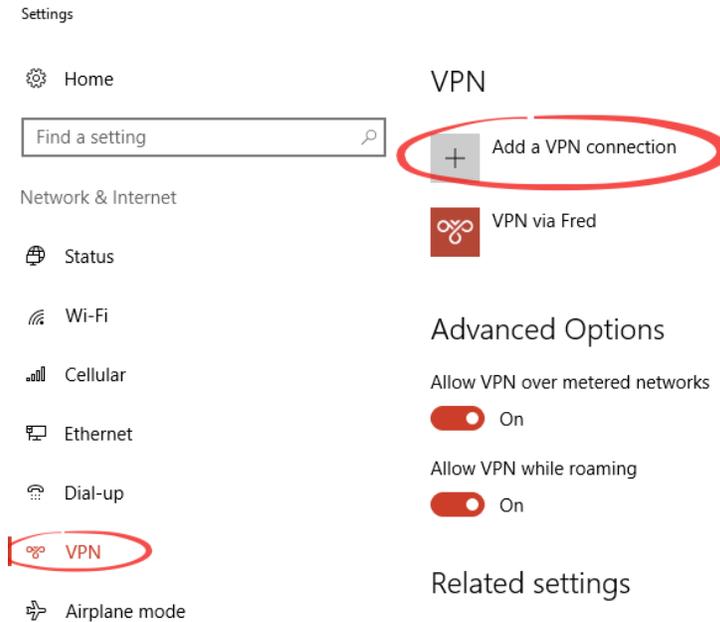


# Windows 10 for Microsoft Office users

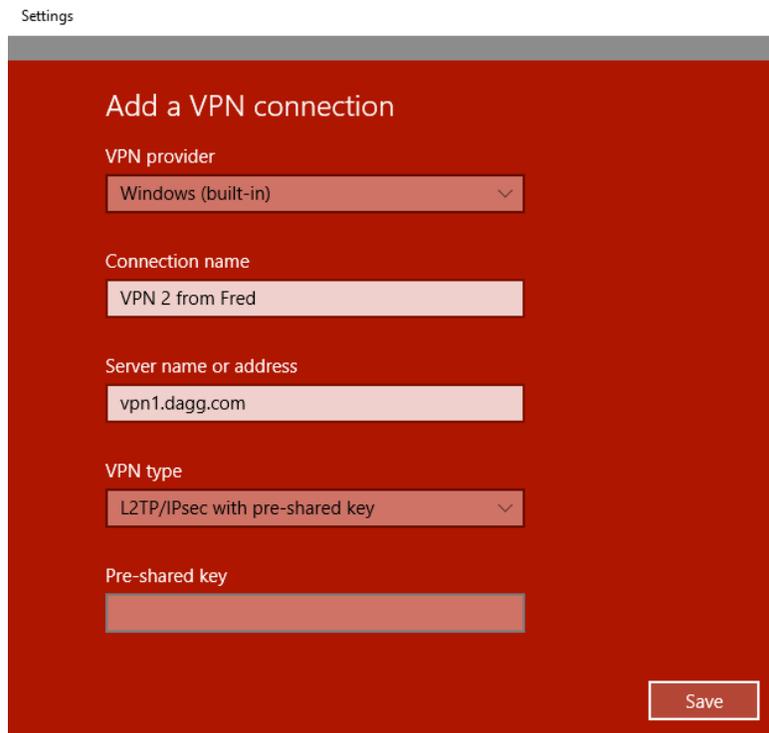
## Virtual Private Network - Setup

### SETTINGS

Alternatively, go to Settings | Network and Internet | VPN and choose 'Add a VPN connection'.



This is a single screen setup. Use the settings suggested by your VPN provider.

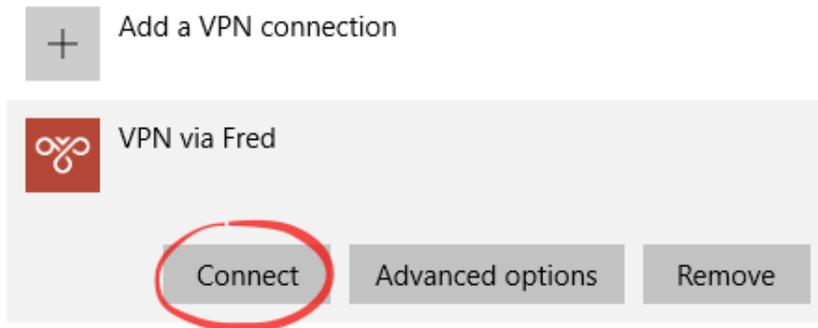


## Windows 10 for Microsoft Office users

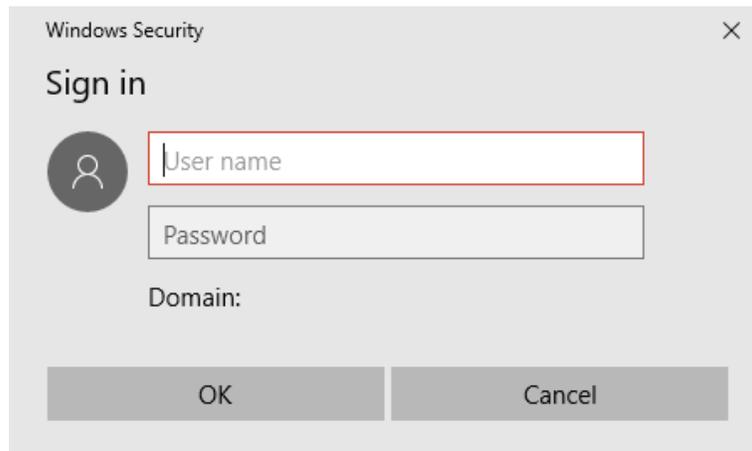
### Virtual Private Network - Setup

Whichever way you create the connection go to the Settings | Network & Internet | VPN screen then click on the connection and Connect to start it.

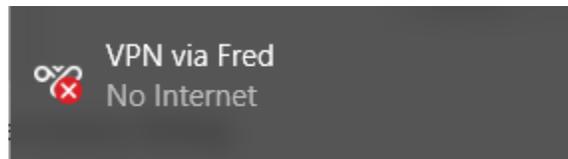
## VPN



Then you'll be prompted for the login name and password:



On the Networks pane (click on Network button on taskbar) and VPN connections will appear above any wifi connections:



# Windows 10 for Microsoft Office users

Wifi - Basics

## WIFI

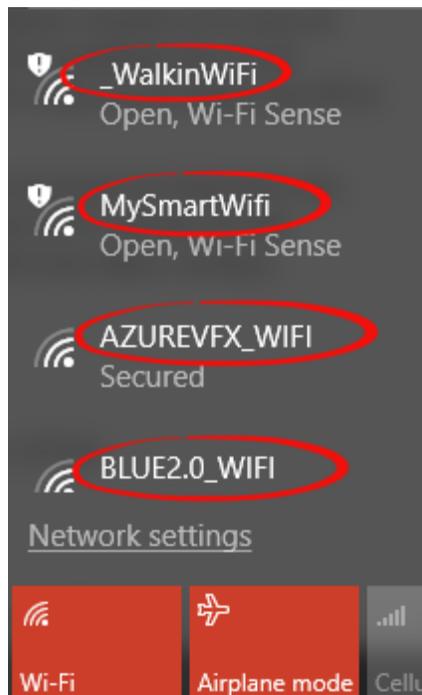
The wireless technologies in Windows 10 haven't changed much from Windows 7 or 8 but the interface has changed a lot and not all for the better.

This chapter will take you through the new interface for Wifi connections then some useful Wifi tricks that you won't find in any official Windows manuals <g>.

See also the chapters immediately after this for more Wifi related goodness: [Mobile Hotspot](#) and [Metered Connections](#).

### BASICS

The main way to control Wifi is under the Network pane. Click on the taskbar Network icon (which will look like a computer or a Wifi symbol) to pop up a list of available Wifi connections.



Each connection is shown with its name and whether it's:

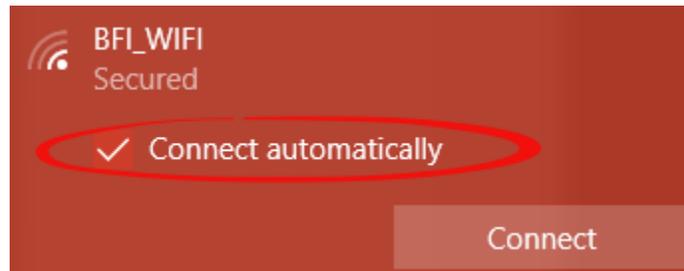
**Secured** – meaning a password is necessary before connecting to the Wifi.

**Open** – Wifi is accessible without a password (but there may be a login process via a browser, common for public wifi).

## Windows 10 for Microsoft Office users

### Wifi - Basics

Click on the wifi connection you want then Connect.

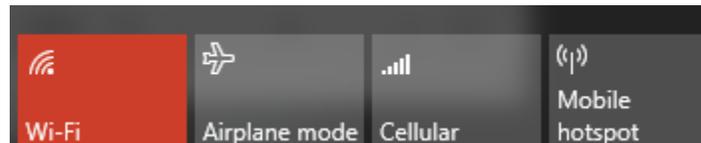


**Connect automatically** – this is on by default. You can change this setting later.

Windows will prompt you for a password, if necessary.

### BUTTONS

At the bottom of the Network pane there are up to four buttons that show the status of various settings and let you turn them on/off.



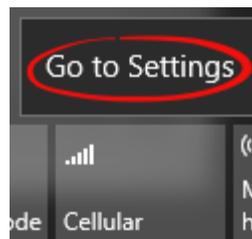
### Wi-fi

**Airplane Mode** – click this to turn all transmitters off. Wi-fi, cellular, GPS and Bluetooth. Handy not just in planes but also to reduce power use when your battery is running low.

**Cellular** – if your device has mobile/cell access it will appear here. You can turn it on/off.

**Mobile Hotspot** – share your Internet connection with other devices via Wifi. We have a chapter devoted to [Mobile Hotspot](#).

Right-click / Long tap on any of these buttons to get a link to the appropriate Settings page.



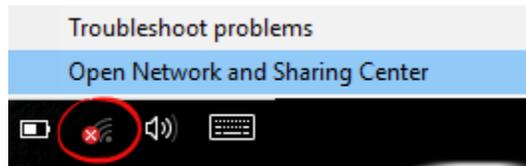
### NETWORK SETTINGS

The **Network Settings** link on the network pane takes you to Settings | Network & Internet | Wifi box.

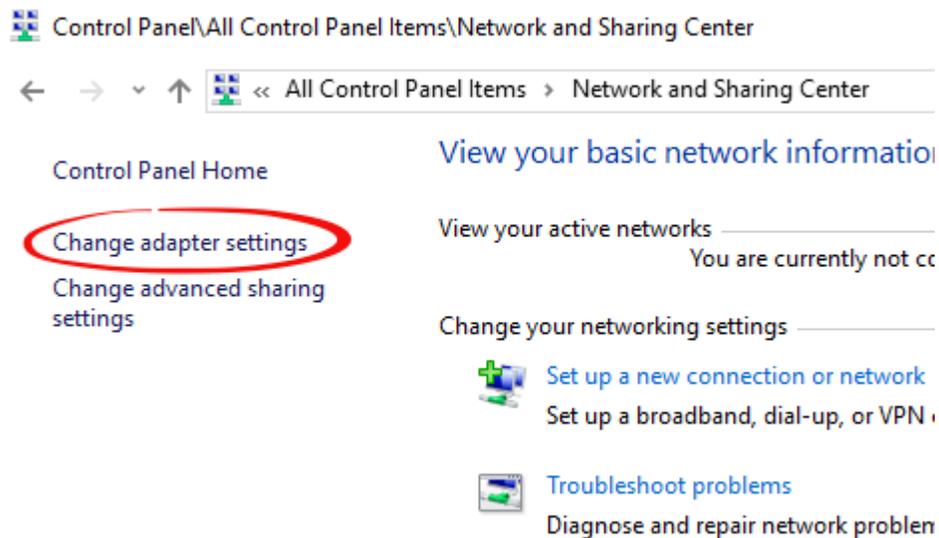
## Windows 10 for Microsoft Office users

### Wifi - Basics

The new Settings version of the network configuration is still lacking many useful commands so we tend to revert to the more comprehensive Control Panel | Network and Sharing Center. This is quickly available by right-clicking on the Wi-fi icon on the taskbar:

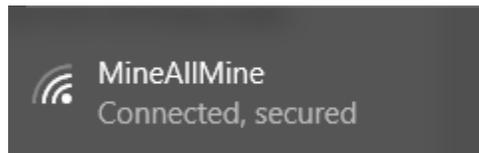


From the Network and Sharing Center, for troubleshooting, we often go to the 'Change adapter settings' page



### CONNECTION PROPERTIES

Once you've connected it will appear in the network pane like this:



The name of the Wifi connection, of course.

The wifi icon is an indication of the signal strength.

**Connected** means not only connected to the Wifi router but also to the Internet.

**No Internet** means there's a Wifi connection to the modem/router/hotspot but no link from there to the Internet. Most commonly, this means the broadband modem isn't connected to the Internet.

**Secured** - means the link from your device to the router is encrypted.

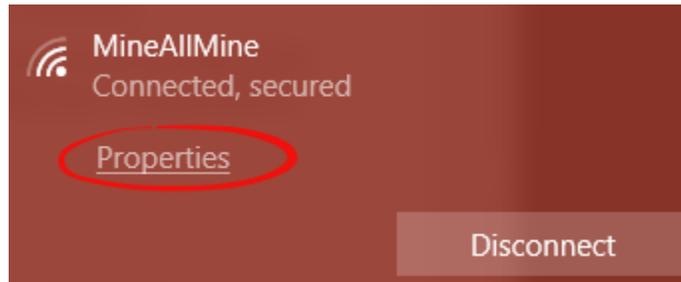
# Windows 10 for Microsoft Office users

## Wifi - Basics

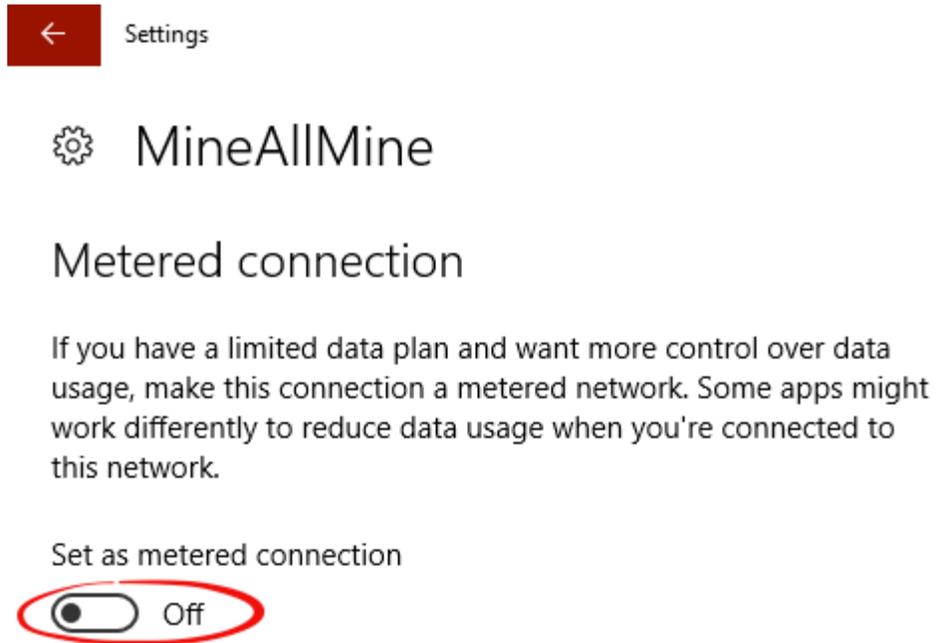
### METERED CONNECTIONS

There is NO mention on the connection properties if you've marked the connection as **Metered**. Microsoft removed this useful, if not vital, notice in Windows 8.1 for reasons it's keep 'Mum' about.

To see if a connection is Metered, click on the connection then Properties.

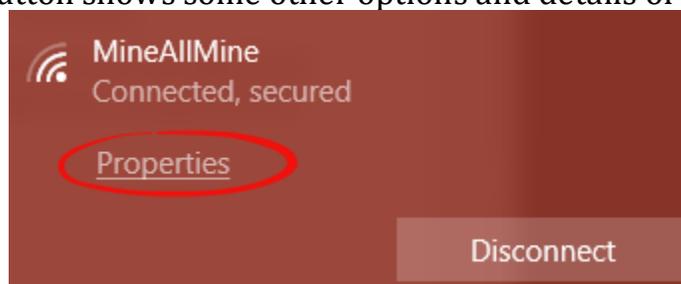


Scroll down to the Metered Connection section to see if it's on or off.



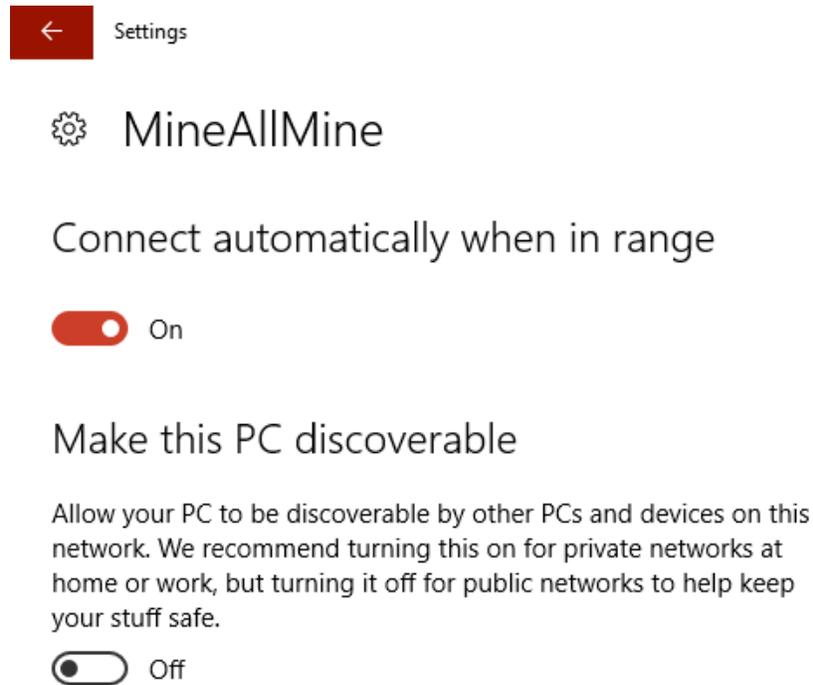
### OTHER SETTINGS

The same Properties button shows some other options and details of the connection.



# Windows 10 for Microsoft Office users

## Wifi - Basics



**Connect automatically when in range** – Windows will reconnect to the Wifi hotspot. The default is On - switch this off if you don't want auto-reconnection.

**Make this PC discoverable** – Windows computers can be 'visible' to other computers on a local network.

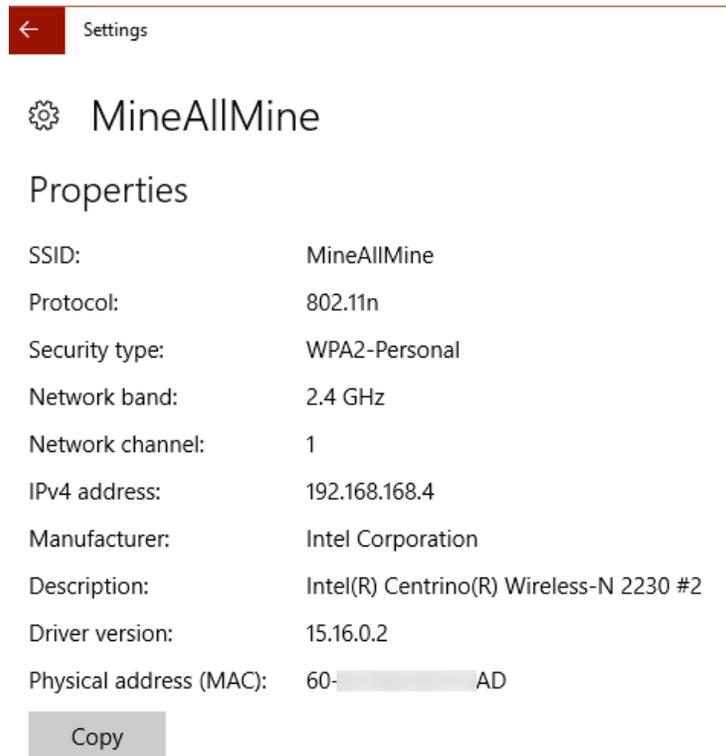
That's great on home, office and other private networks because you can share files and folders. Not so great on public networks (hotels, cafes etc) where other people can see your computer and, potentially, access it.

This is OFF by default. Turn on for known networks where you want to link with other computers.

## Windows 10 for Microsoft Office users

Wifi - Get network settings

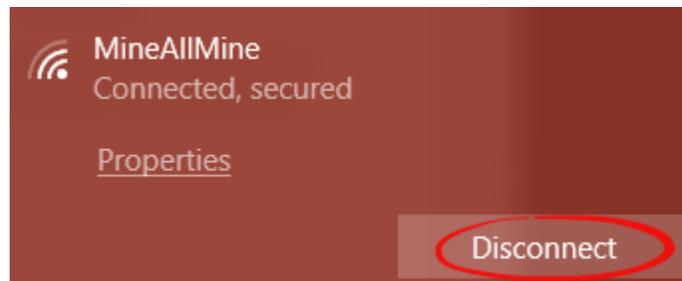
**Properties** – scroll down to see some details of the current connection.



There's a lot more Wifi connection information available if you know [where to look](#).

### DISCONNECT

To drop a Wifi connection, click on the connection to open some options. Click on Disconnect.



An alternative is to turn Wifi to Off entirely from the Wifi button at the bottom of the Network pane.

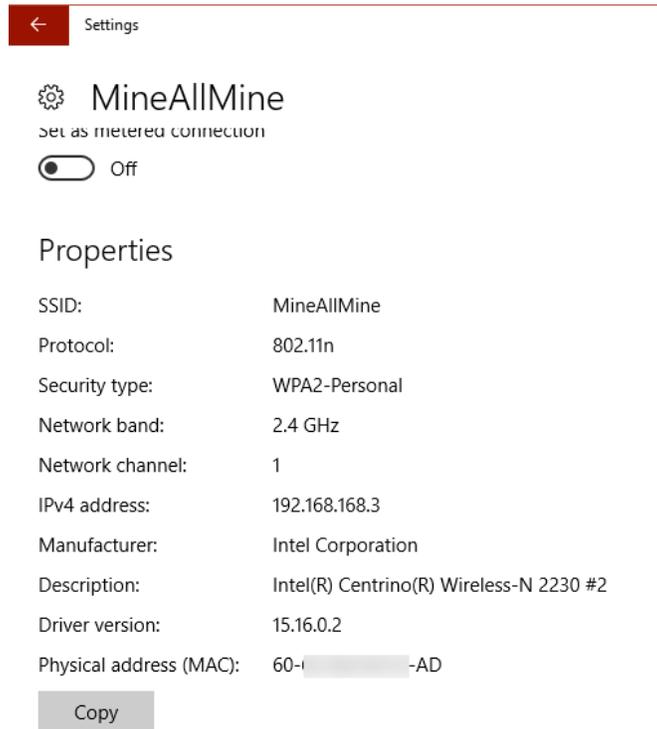
## GET NETWORK SETTINGS

Sometimes you need to know your Wifi or network settings and there are various places to get those details in Windows. Unfortunately, the ones most easily accessed in Windows 10 don't show all the information you might need.

## Windows 10 for Microsoft Office users

Wifi - Get network settings

Go to Settings | Network & Internet the click on the current Wi-Fi connection and scroll down to see a list of some Wi-Fi details.

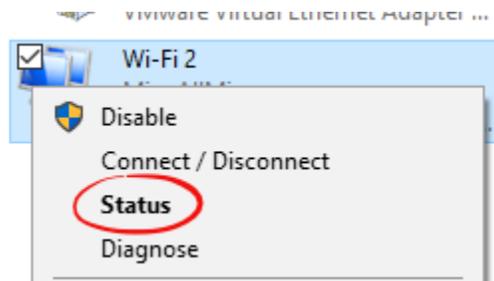


That doesn't tell you everything you might need to know and only applies to the current wifi connection. Other wifi connections saved on your computer aren't available this way.

More useful and comprehensive details are somewhat buried in the setup. You have to dig even deeper for stored wifi settings (like passwords) not currently in use.

### CURRENT CONNECTION

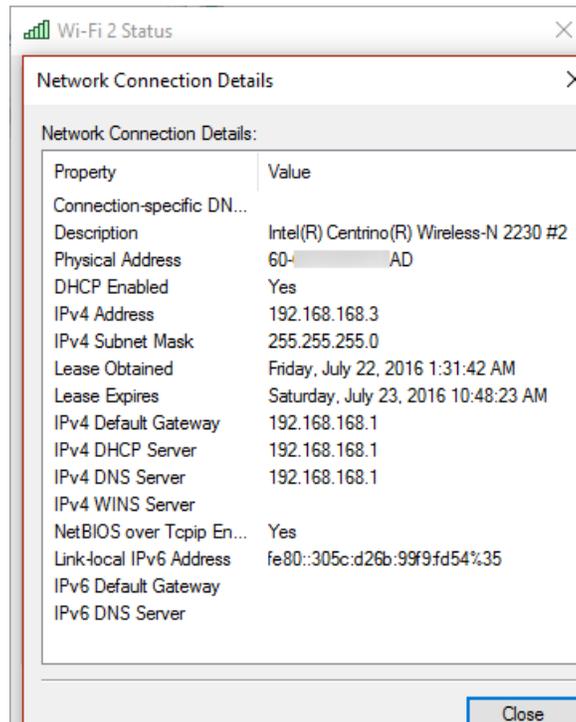
Go to Control Panel | Network and Sharing | Change adapter settings and look for your wifi or Ethernet/cable adapter. Right-click and choose Status



## Windows 10 for Microsoft Office users

### Wifi - Get network settings

then Details.



The Details box will show you, almost, all you might need to know about the current wifi connection:

**Physical Address:** otherwise known as the MAC address. Later in this chapter we delve into [changing the MAC address](#), which is occasionally required and a very handy trick.

**IPv4 address:** aka 'IP address' the unique number given to your computer on the network.

**IPv4 subnet mask:** works in conjunction with the IP address.

**IPv4 Gateway:** the IP address for the machine which routes traffic to/from the Internet. In home/small office setups this will be the 'modem' or 'router'.

**IPv4 DNS server:** the local machine which converts a domain name (eg google.com) into an Internet wide IP address. This DNS server will automatically connect to other DNS servers on the Internet to resolve domain names. DNS = Domain Name Server.

**IPv4 DHCP server:** this is how network connections are setup automatically. When a computer links to a network, it seeks out a DHCP server which responds with unique IP address plus subnet mask, gateway and DNS server details. DHCP = Dynamic Host Configuration Protocol.

For small networks the Gateway, DNS and DHCP values are usually the same. That's because all three services are in your modem/router.

If DHCP isn't working properly you can try manually configuring a network connection by copying the subnet mask, Gateway and DNS values from another computer on the network.

## Windows 10 for Microsoft Office users

### Wifi - Get network settings

Use a similar, but not the same, IP address – most commonly changing the final integer. Eg if a working computer is 10.0.0.14, try something like 10.0.0.114 or 10.0.0.50

---

*If the Details pane shows an IP address starting with 169.x.x.x then there's no proper network connection. That is just placeholder by Windows until a real IP address comes along. Fix your network connection to get a working IP address.*

---

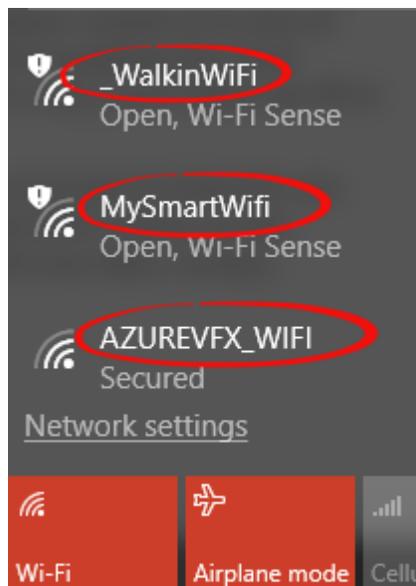
IPv4 is the most common way for computers to connect. IPv4 numbers consist of 4 sets of integers each ranging from 0 to 255. There are special ranges of IPv4 numbers for local networks which commercial routers often use automatically. That's why you'll often see IPv4 addresses on LANs starting with 10.x.x.x, 192.168.x.x or (less common) 176.16.x.x

IPv6 is the updated IP system designed to cope with the enormous increase in Internet use. Windows will setup IPv6 automatically when possible and you'll see IPv6 values on the Details window. Only nerds and geeks need worry about IPv6 (and even then, rarely).

### WIFI NAME AND PASSWORD

The other things you need to know about a Wifi connection are:

**SSID:** or Wifi name. This is the name that appears in the Windows 10 list:



Sometimes the Wifi name is hidden. When that happens Windows will show a 'hidden' entry on the available wifi list. You have to enter both the exact Wifi name and the password.

SSID = Service Set Identifier

**Password:** most wifi networks are encrypted and you need a password to access it.

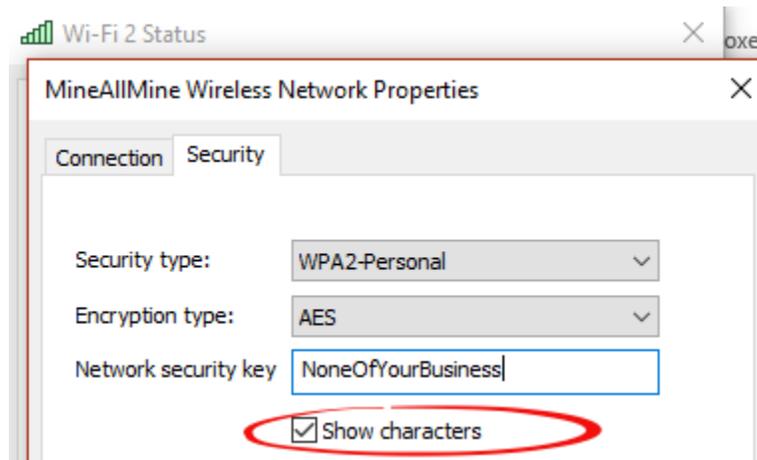
## Windows 10 for Microsoft Office users

Wifi - Get network settings

Windows will save passwords for you but it's a good idea to keep a separate record of wifi passwords:

- Windows will sometimes 'forget' wifi passwords, especially after a Windows update or changing network drivers.
- To pass along the wifi details to someone else.

To get the password for the *currently active wifi connection* go to Control Panel | Network and Sharing | Change adapter settings and look for your wifi cable adapter. Right-click, choose Wireless Properties then the Security tab. Click on 'Show Characters' and the password will appear.



Also on this page are the security and encryption type for the connection. Windows should set these automatically but might be worth noting anyway.

That's the method most commonly mentioned in books and on the web, but it doesn't tell the whole story.

### OTHER SAVED CONNECTIONS

What if you need the wifi password for a connection saved on your computer but not currently used? For example, you're at work and a family member asks for the home wifi password?

If you like to see all the wifi connection details in one place, there's a command line for that.

```
netsh wlan show profile name=<SSID> key=clear
```

Replace the <SSID> with the name of the wifi connection. If the SSID has spaces use double quotes like this:

```
netsh wlan show profile name="Mine All Mine" key=clear
```

# Windows 10 for Microsoft Office users

## Wifi - Get network settings

```
Administrator: Command Prompt

C:\WINDOWS\system32>netsh wlan show profile name=Mineallmine key=clear

Profile MineAllMine on interface Wi-Fi 2:
=====

Applied: All User Profile

Profile information
-----
Version           : 1
Type              : Wireless LAN
Name              : MineAllMine
Control options   :
  Connection mode  : Connect automatically
  Network broadcast : Connect only if this network is broadcasting
  AutoSwitch       : Do not switch to other networks
  MAC Randomization : Disabled

Connectivity settings
-----
Number of SSIDs   : 1
SSID name         : "MineAllMine"
Network type      : Infrastructure
Radio type        : [ Any Radio Type ]
Vendor extension  : Not present

Security settings
-----
Authentication    : WPA2-Personal
Cipher            : CCMP
Authentication    : WPA2-Personal
Cipher            : Unknown
Security key      : Present
Key Content       : li... 400

Cost settings
-----
Cost              : Unrestricted
Congested         : No
Approaching Data Limit : No
Over Data Limit   : No
Roaming           : No
Cost Source       : Default
```

(we changed the background color on the Command Prompt windows for easier reading)

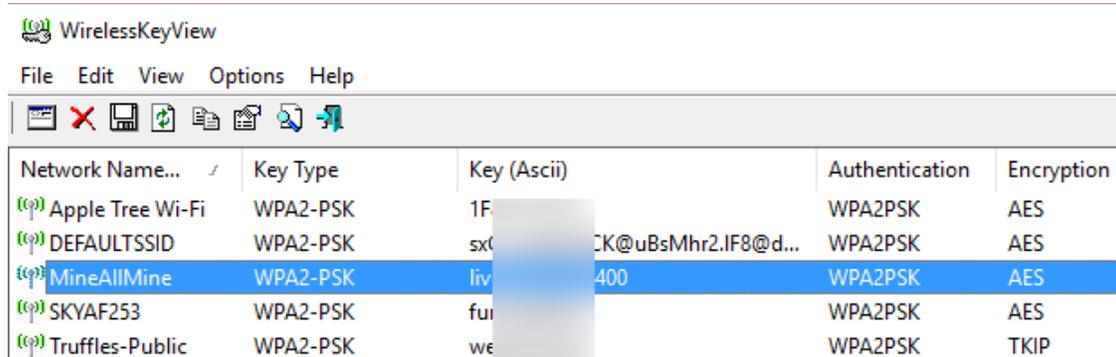
This command line works for ANY wifi connection saved on your computer.

The wifi password is listed as 'Key Content'. It also shows the type of wifi connection.

## Windows 10 for Microsoft Office users

Wifi - Connecting to Public Wifi

If command line tools don't suit you, our friends at Nirsoft have a [Wireless Key Viewer](#) which shows all the stored Wi-Fi details. "Key (ASCII)" is the Wi-fi password in a human readable form.

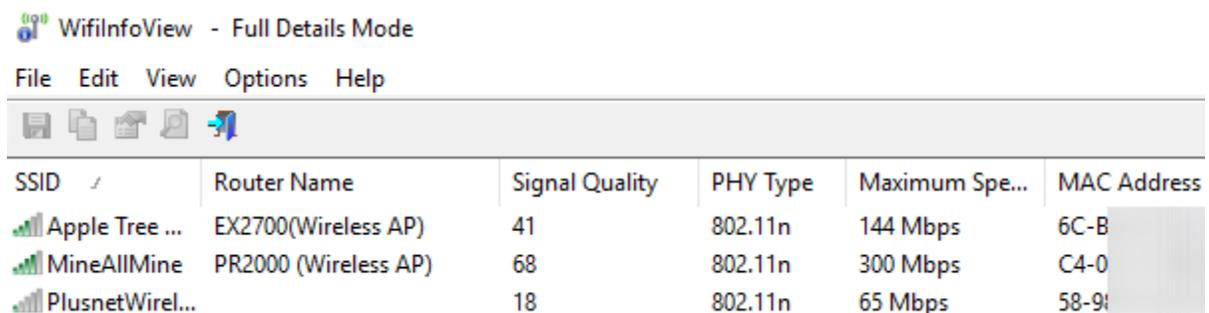


Network Name...	Key Type	Key (Ascii)	Authentication	Encryption
Apple Tree Wi-Fi	WPA2-PSK	1F...	WPA2PSK	AES
DEFAULTSSID	WPA2-PSK	sx...CK@uBsMhr2.iF8@d...	WPA2PSK	AES
MineAllMine	WPA2-PSK	liv...400	WPA2PSK	AES
SKYAF253	WPA2-PSK	fu...	WPA2PSK	AES
Truffles-Public	WPA2-PSK	we...	WPA2PSK	TKIP

There's another type of wifi password that you see on public networks in hotels, cafes etc. This is a password or code you enter on a web page after making the initial wifi connection. Later in this chapter we have tips for [getting a login page](#) when they don't appear.

## NETWORK VIEWER

If you really want to know about the wifi networks there's [Wifi Info View](#) also from Nirsoft. A lot of these details are technical but some are useful. Compare the 'PHY type' with the Maximum Speed available. In this example, all three Wifi connections notionally use the fast 802.11n protocol but only one is capable of 300Mbps. This is partly because of the Signal Quality available.



SSID	Router Name	Signal Quality	PHY Type	Maximum Spe...	MAC Address
Apple Tree ...	EX2700(Wireless AP)	41	802.11n	144 Mbps	6C-B
MineAllMine	PR2000 (Wireless AP)	68	802.11n	300 Mbps	C4-0
PlusnetWirel...		18	802.11n	65 Mbps	58-9

## CONNECTING TO PUBLIC WIFI

In theory, connecting to public Wifi hotspots in cafés, hotels etc. is easy. Here's some tips for when things don't go right.

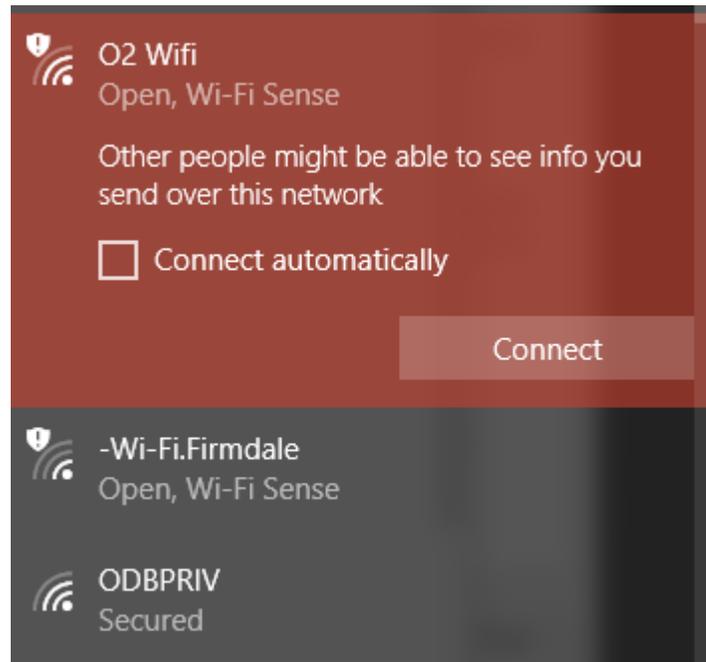
## Windows 10 for Microsoft Office users

### Wifi - Connecting to Public Wifi

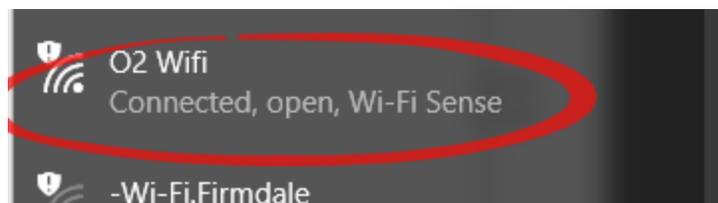
What's supposed to happen is that you choose a Wifi connection from the list shown when you click on the Wifi icon in the taskbar:



Click on the connection you want to use. Check the box for 'Connect automatically' if you'll be using this link in the future. Click on Connect and wait for Windows 10 to link to the hotspot.



Once connected the taskbar icon will change and you can see some info in the wifi list.



'Connected' means that your computer is connected to the Internet.

Many public hotspots require you to login via a web page before getting full internet access. Ideally the web page will open automatically or you'll be taken to the login page when you try to access any other web site.

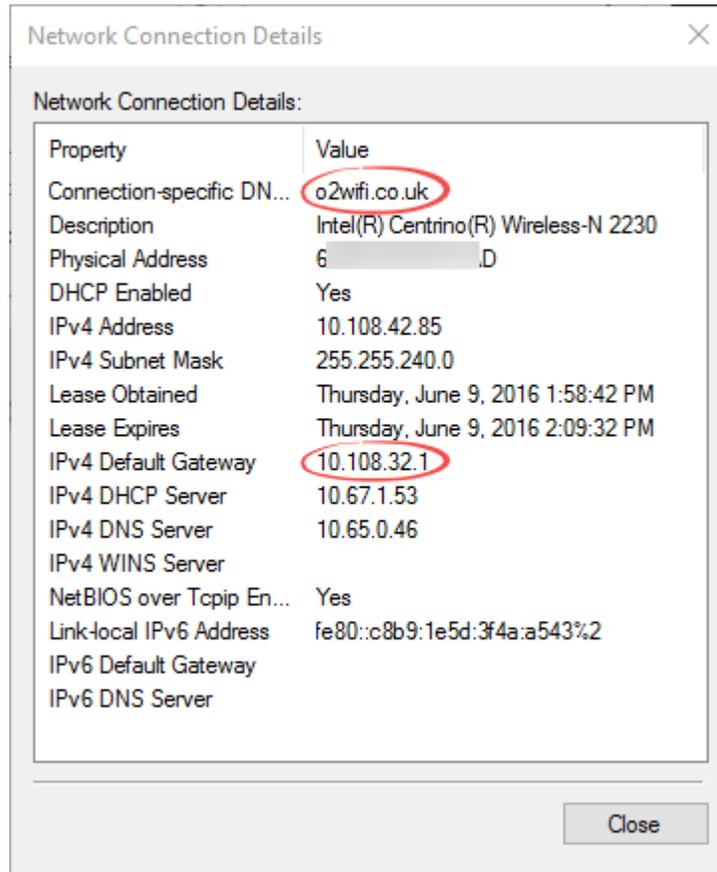
For the times that doesn't happen try these tricks, if the login page doesn't appear in your browser automatically:

- Go to a common web site like [google.com](http://google.com), [cnn.com](http://cnn.com) or [bbc.co.uk](http://bbc.co.uk). That might trigger the login page to appear.
- Find the Gateway setting for the wifi connection. That's available at Control Panel | Network and Sharing Center | Change Adapter settings.

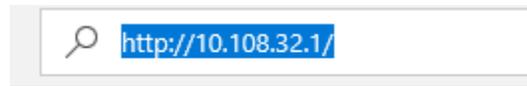
## Windows 10 for Microsoft Office users

Wifi - Connecting to Public Wifi

Right click on the wifi connection, choose Status | Details and look for the IPv4 Default Gateway value.



Switch to your browser and type in `http://` then the gateway number like this:



Another possibility is the 'Connection specific DNS Suffix' also in the status details.



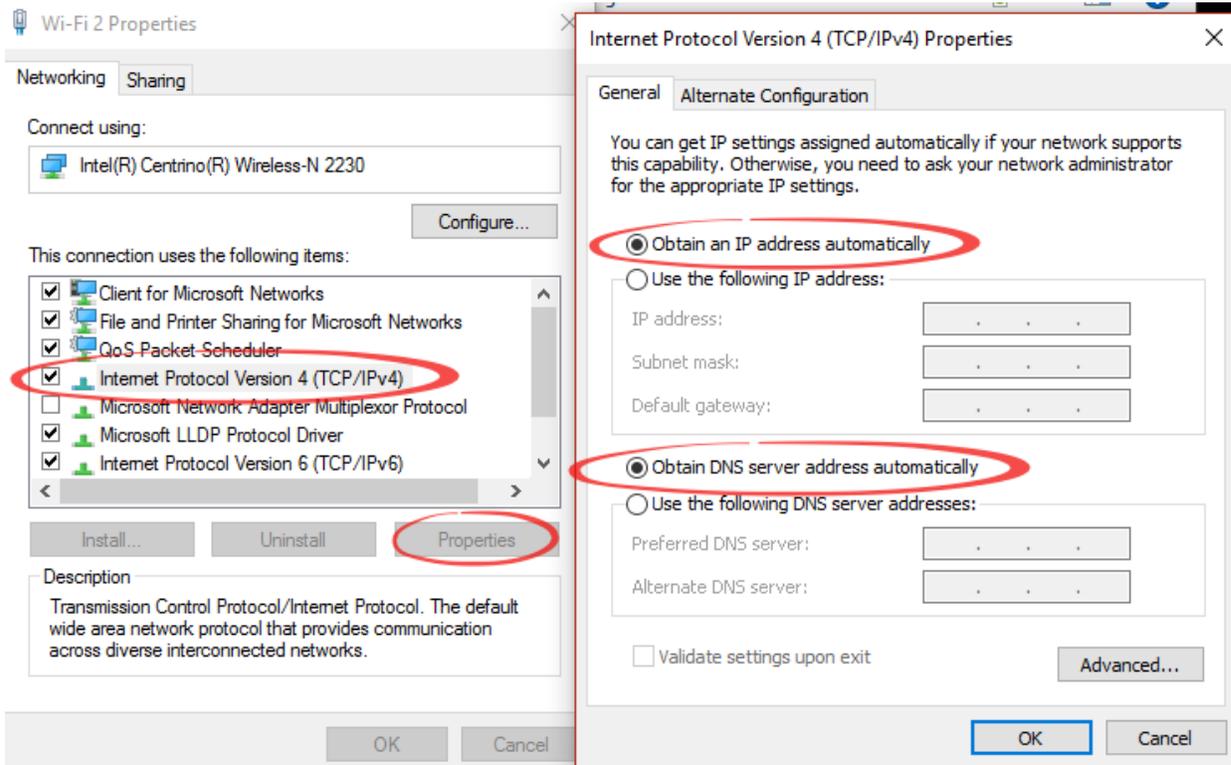
Hopefully one of those links will force the login page to open. Failing that, you might try the DHCP Server or DNS Server IP addresses with fingers crossed.

- A possible problem is custom DNS settings. Advanced users can use public DNS services (Google or OpenDNS) which is often a good idea when the ISP's DNS service is unreliable. Unfortunately, those settings can mess up the login to a public hotspot.
- Check your network setup at Control Panel | Network and Sharing Center | Change Adapter settings. Right click on the wifi adapter and choose Properties.

## Windows 10 for Microsoft Office users

Wifi - Changing Network MAC address

Then choose Internet Protocol Version 4 and Properties. Make sure the two general settings are automatic.



It's also quite possible that the hotspot isn't fully working. While the wifi hotspot is showing up in Windows, there's a fault in the login page or internet connection. To test that, try connecting to the same hotspot from another device (a tablet or phone). If that doesn't work, then it's likely to be a hotspot fault. If the devices can connect, it's probably something in your Windows 10 setup.

## CHANGING NETWORK MAC ADDRESS

This is a quite nerdy tip only for advanced users. It's rarely needed but it's incredibly useful when required so we're including it here.

Very occasionally you have to change the in-built MAC Address. Some Wifi hotspots in hotels etc. limit use on a 'per computer' basis and do that by tracking the MAC address of each machine. You can bypass those limitations by changing the MAC address so your computer seems to be 'new' to the network. Some people might choose to switch MAC addresses for privacy reasons.

Each network adapter – wired or wireless – has a MAC address. It's a unique identifier for each hardware adapter. It's actually a number in hexadecimal which means it uses the characters 0-9 and A-F (case doesn't matter). How a MAC address is presented or entered

## Windows 10 for Microsoft Office users

Wifi - Changing Network MAC address

varies, sometimes there's dashes or colons between each two values (octet). For example: D41B4C9D6E5F, D4-1B-4C-9D-6E-5F and D4:1B:4C:9D:6E:5F are the same address.

---

*MAC addresses have to be exactly correct. Wherever possible, copy and paste MAC addresses to avoid typing errors.*

---

MAC address = Media Access Control address. It's sometimes called the Physical Address or Network Address.

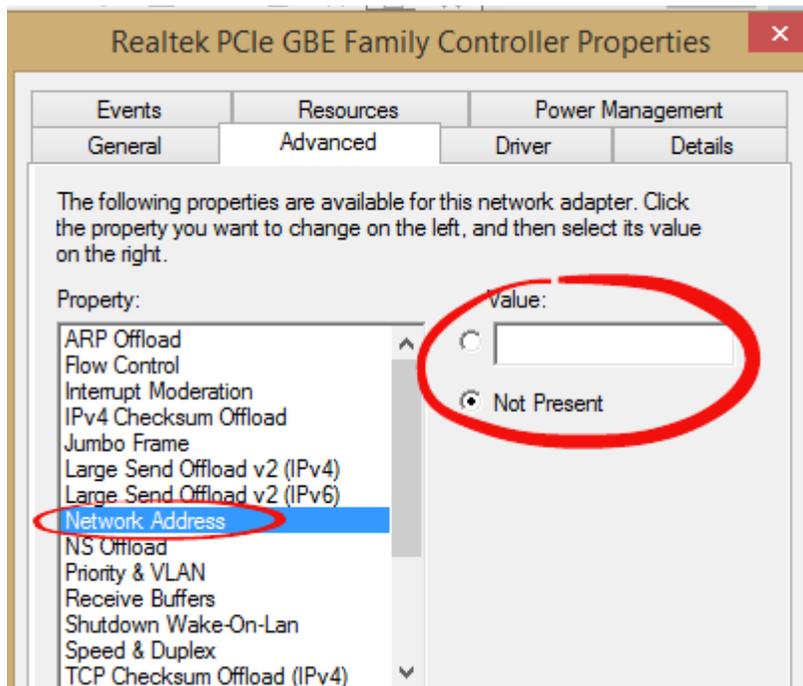
The default MAC address comes with each network adapter. Windows grabs that in-built MAC address and uses it.

The in-built MAC address can't be permanently changed but Windows will let you override it with a custom MAC address.

Here's how to change the MAC address.

### DEVICE MANAGER METHOD

There is simple way to change a MAC address but it doesn't work with all network adapters. Go to Control Panel | Device Manager | Network Adapters. Choose the network device, right-click and choose Properties. On the Advanced tab look for an entry 'Network Address' or 'Locally Administered Address'.



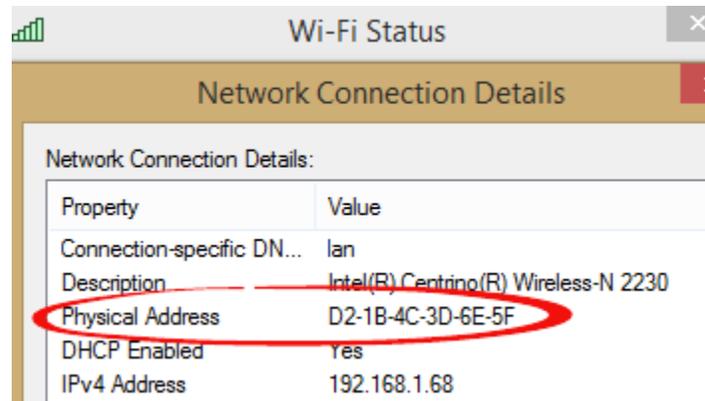
## Windows 10 for Microsoft Office users

### Wifi - Changing Network MAC address

If that option is there, you can change the MAC address in the value field. If not, use the registry method instead.

After making the change, reset the network adapter. Click OK then go to Control Panel | Network and Sharing Center | Change adapter settings. Choose the network adapter, right-click and choose 'Disable'. Wait until the adapter icon is greyed out (i.e. its disabled) then right-click again and choose 'Enable'.

Once enabled, check the new MAC address has 'taken' by going right-clicking the network adapter, choose Status then Details and look at the 'Physical Address' entry.



It should match the MAC address you entered.

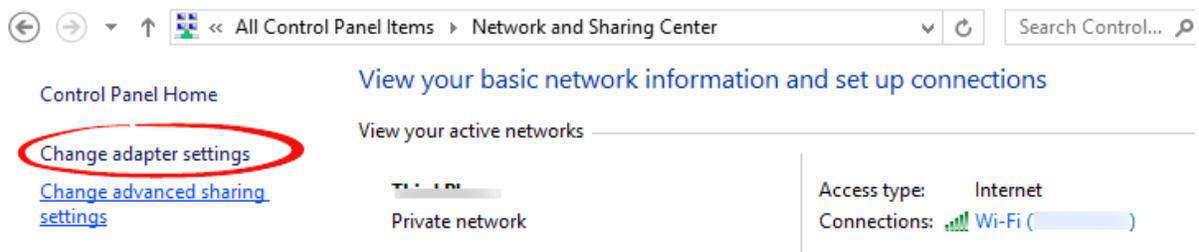
### REGISTRY METHOD

This method will work with all network adapters.

#### IDENTIFY THE NETWORK ADAPTER

Firstly, you need to identify the exact network adapter you want to change.

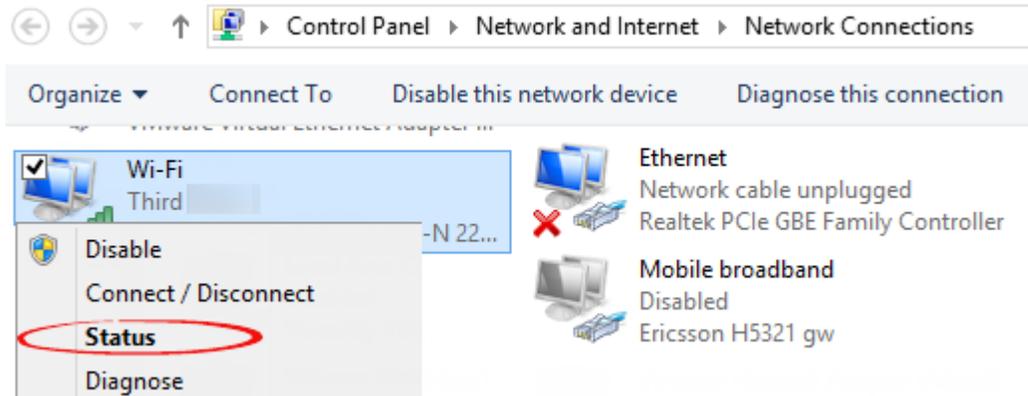
Go to Control Panel | Network and Sharing Center | Change adapter settings.



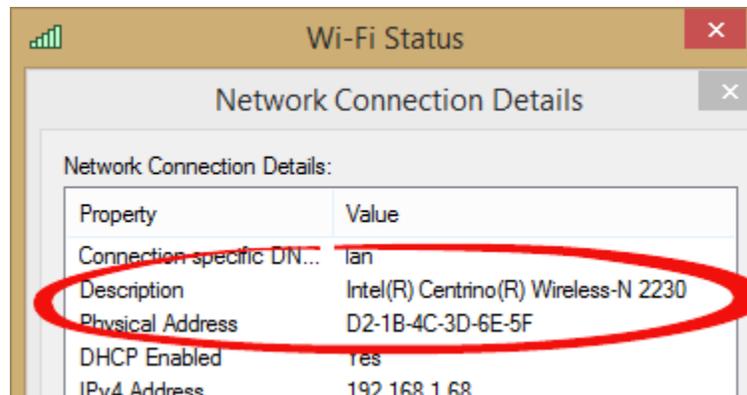
## Windows 10 for Microsoft Office users

Wifi - Changing Network MAC address

Choose the network adapter, right-click and choose Status | Details.



Carefully note the exact name of the network adapter labelled 'Description'.



Also a good idea to note the 'Physical Address' or MAC address because you might vary this to make your new MAC address.

You can also get these details from the PC settings | Network, click on the network you want and scroll to the bottom of the page. Or from the command prompt `IPCONFIG /ALL`

Armed with the description you can now go to the registry and change the MAC address.

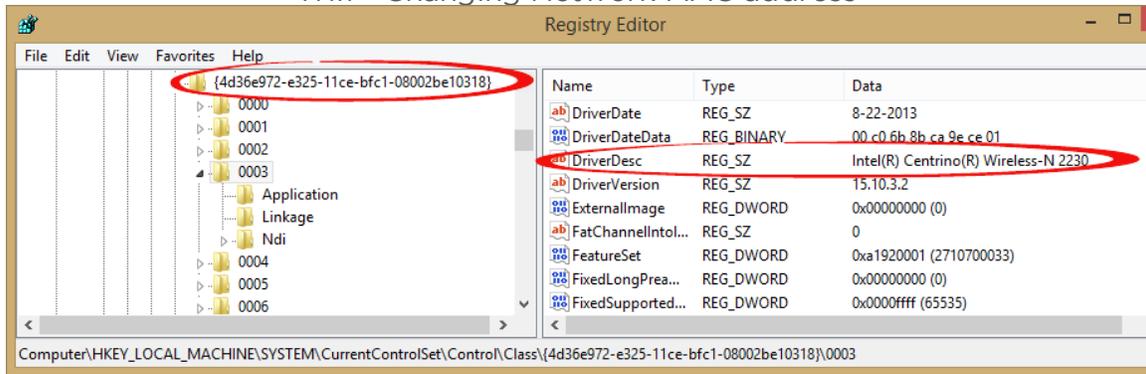
FIND IT IN THE REGISTRY

Go to `HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-11CE-BFC1-08002BE10318}`

Under that key there will be many entries 0000, 0001 etc. Look or search those sub-keys until you find the one with the EXACT same description. In the registry the 'Description' is called '**DriverDesc**'.

# Windows 10 for Microsoft Office users

## Wifi - Changing Network MAC address

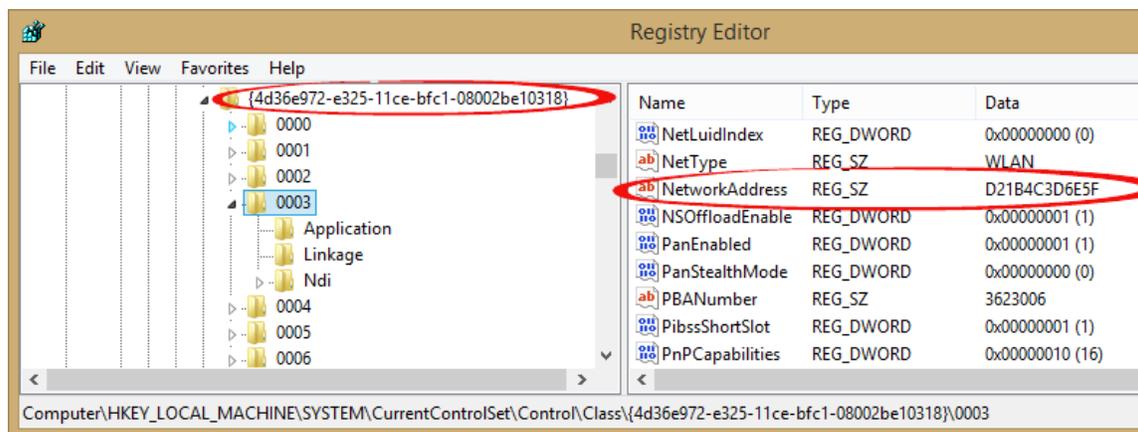
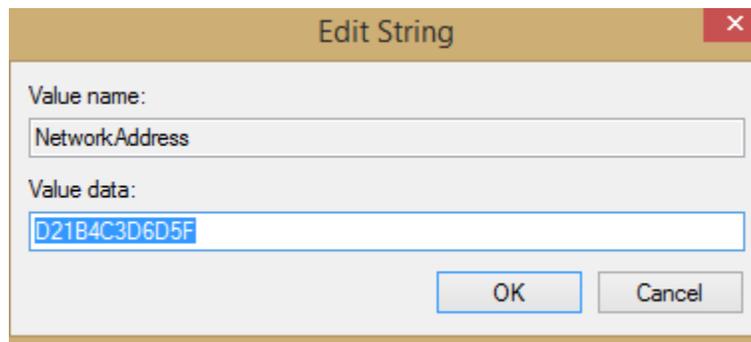


Look down that sub-key (where the matching DriverDesc is located) to see if there is a key 'NetworkAddress'. If not, add one:

**Key:** NetworkAddress

**Type:** String REG\_SZ

**Value:** new MAC address with NO hyphens. e.g. D21B4C3D6D5F

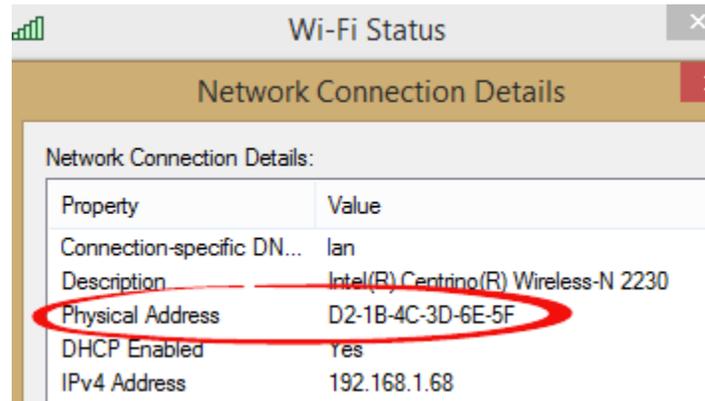


After setting the new key, reset the network adapter. Go to Control Panel | Network and Sharing Center | Change adapter settings. Choose the network adapter, right-click and choose 'Disable'. Wait until the adapter icon is greyed out (i.e. its disabled) then right-click again and choose 'Enable'.

## Windows 10 for Microsoft Office users

Wifi - Changing Network MAC address

Once enabled, check the new MAC address has 'taken' by going right-clicking the network adapter, choose Status then Details and look at the 'Physical Address' entry.



It should match the MAC address you entered in the registry.

### MAC ADDRESS NICETIES

Network adapters can be quite picky about the MAC address. The first two characters (octet) have to be acceptable in order for the new MAC address to work.

Any MAC address you choose is more likely to work if the:

- first character is NOT 0 (zero). In other words, characters 1-9 or A-F
- second character (i.e second part of first octet) IS 2, 6, A or E
- the first six characters (first 3 octets or OUI) is kept the same as the default MAC address.

The easiest and prudent choice is to slightly change the middle or last characters of the existing MAC address. For example if the default is D21B4C3D6D5F change the MAC address to D21B4C3D6D4D or D21B4C1F6D5F etc.

You could make a random MAC address using the generator at <http://www.macvendorlookup.com/random-mac-generator>

### IDENTIFYING A MAC ADDRESS

There are web sites that will help you identify the manufacturer of a particular network adapter via the MAC address.

Hardware makers are allocated ranges of MAC addresses. The first 6 characters (3 octets) of a MAC address can identify the source of the hardware. These prefixes are called OUI or Organizationally Unique Identifier. In practice, large manufacturers have many OUI's some allocated directly and others acquired when merging/takeover of other companies.

What use is the OUI? If you have a Wifi hotspot / router there's a list of the connected devices but usually only by MAC address. It can be hard to work out what devices are connected in a large home or office.

## Windows 10 for Microsoft Office users

### Wifi - Changing Network MAC address

By getting the name of the manufacturer it can help you figure out what is connecting to the network.

For example, a friend kept finding a device connecting to his home wifi but could not figure out what it was. Using a MAC address search he discovered that the device was from Sony. Since the only Sony device he had was a TV he checked it and, sure enough, it was a modern TV with an unexpected Internet connection.

Some sites to try:

[http://www.coffer.com/mac find/](http://www.coffer.com/mac_find/)

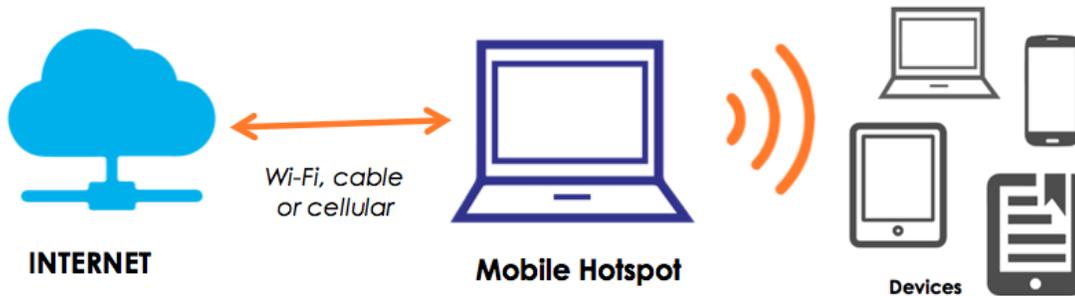
<http://www.macvendorlookup.com/>

## Windows 10 for Microsoft Office users

Mobile Hotspot - Why make a hotspot?

# MOBILE HOTSPOT

You can share an Internet connection with your computer or phone by creating a personal Wifi hotspot in your Windows 10 computer.



The Internet connection source can be a cellular/mobile broadband link, Ethernet cable or Wifi that's linked to the Windows 10 computer.

Windows 10 then re-broadcasts or re-routes the internet connection to other devices via a private Wifi hotspot that it creates. The private Wifi hotspot uses its own name (SSID) and password set by you.

To the end devices, the hotspot is just another Wifi connection. Start the device wifi and look for the hotspot name you've setup. The devices connecting to the hotspot only need standard Wifi features with nothing special to install.

This has been available in Windows for many years as 'Internet Connection Sharing' (ICS) but it needed separate network adapters (wifi or Ethernet cable) for the incoming and outgoing connections. This feature became really useful with Windows 7 which introduced virtualized network adapters. That meant the same physical Wifi adapter could be used to both connect to the Internet and share that link with other devices.

## WHY MAKE A HOTSPOT?

- Share a limited public Wi-Fi connection with multiple devices.
- Share a cellular/mobile broadband data link with Wi-Fi devices when there's no Internet Wi-Fi available.
- Make a wired/Ethernet Internet connection available to Wi-Fi only devices.
- **More Devices** - Some hotel or paid connections limit you to one or only a few devices. Connection sharing works around that limit.
- **Better reception** A weak Internet/Wi-Fi connection can be boosted for better local coverage. At extremes, the sharing computer/phone can be positioned somewhere with better reception (i.e. near a window or hallway).

## Windows 10 for Microsoft Office users

### Mobile Hotspot - Why make a hotspot?

- **Easier setup** – the hotspot you make will have the same name, password and settings wherever you go. So your other devices (tablet, phone etc.) will automatically reconnect to the hotspot. All you have to do is setup the new Internet connection once and share it.
- **Local Network Sharing** – some hotspots will allow the locally connected devices to 'see' each other and share files.
- **Privacy** – having your devices on a separate Wi-Fi network makes it a lot harder for anyone who is snooping on the public Wi-Fi network for exposed devices to hack

Sadly, the in-built 'Internet Connection Sharing' isn't very friendly. There's few error messages to help you troubleshoot problems. ICS either works or it doesn't. Happily, the people at Connectify made a free program which did the same job but with more features and better troubleshooting.

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*Mobile Hotspot / Tethering is different from a Wi-Fi Repeater. A Repeater uses the same Wi-Fi name/password as the source Internet connection to extend its range. Hotspot/Tethering creates a separate Wi-Fi connection with its own name/password.*

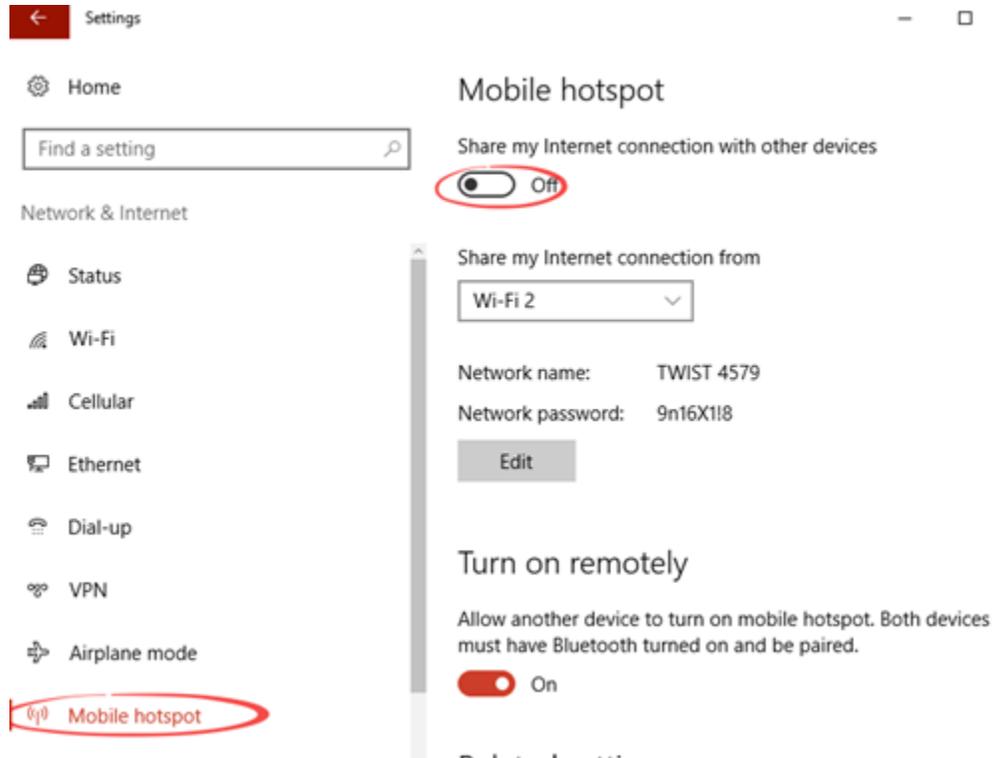
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# Windows 10 for Microsoft Office users

## Mobile Hotspot - Windows in-built

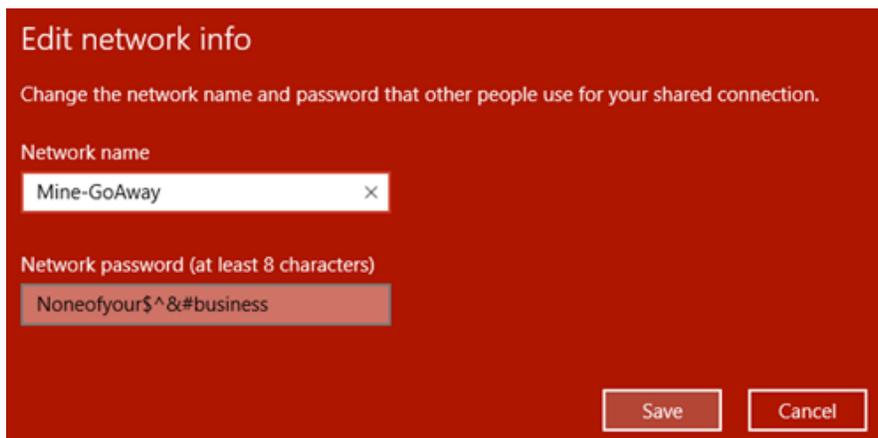
### WINDOWS IN-BUILT

To share an Internet connection in Windows 10, go to Settings | Network and Internet | Mobile Hotspot.



**Share my internet connection from** – choose the source for Internet access. Usually there's only one and Windows will select it automatically.

Windows will also setup a network name (SSID) and password but you can change that with the Edit button.



## Windows 10 for Microsoft Office users

### Mobile Hotspot - Connectify

Once enabled, you can see how many devices are connected from the Settings page.

#### Mobile hotspot

Share my Internet connection with other devices

On

Share my Internet connection from

Wi-Fi 2

Network name: Mine-GoAway

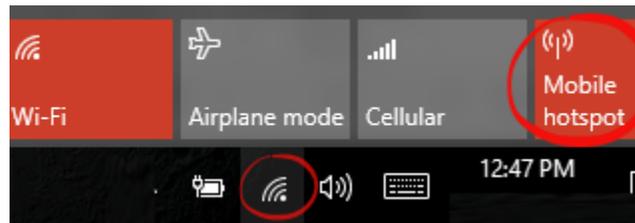
Network password: Noneofyour\$^&#business

Edit

Devices connected: 0 of 8

There is a limit of eight connected devices.

Mobile Hotspot can also be turned on/off from the network pane:



## CONNECTIFY

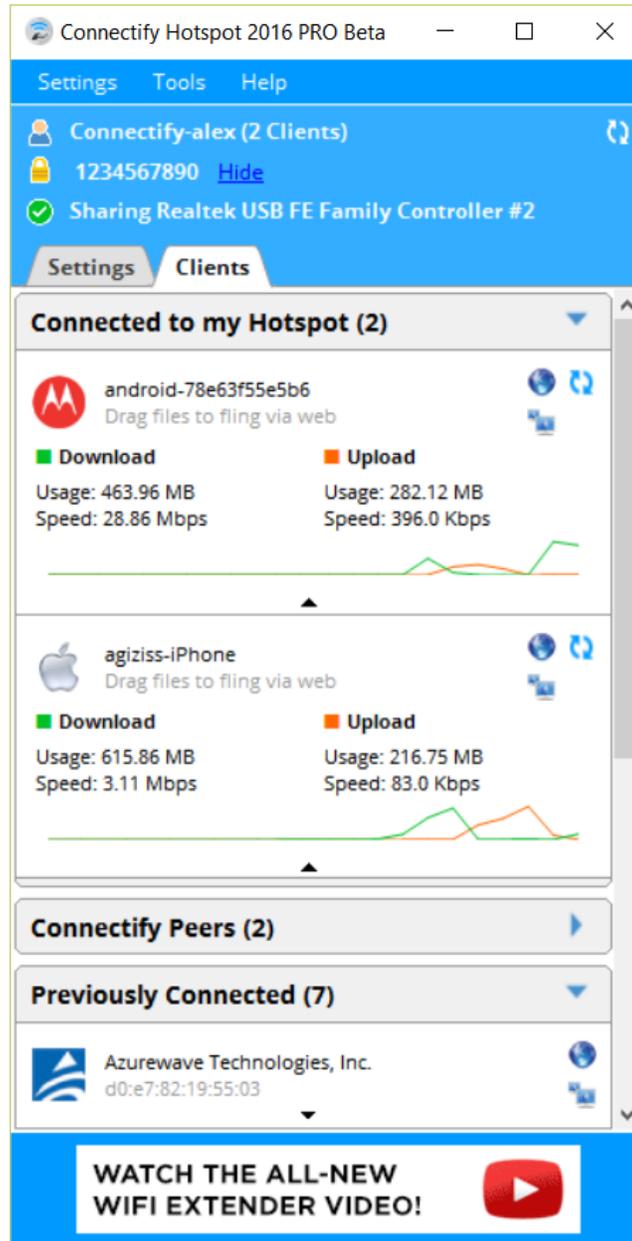
[Connectify](#) is a nice little utility which makes it a lot easier to create a Wi-Fi hotspot from a Windows computer.

It works with Windows 7, 8, 8.1 and 10. There's a free option with some extras available for a one-time fee.

## Windows 10 for Microsoft Office users

Mobile Hotspot - Beyond Windows

Connectify has more options and better troubleshooting than the Windows offering, though it uses the same technology to do the job.



*Source: Connectify*

## BEYOND WINDOWS

Since we're talking about making a Wi-Fi hotspot and sharing Internet connections. Here's some alternatives to consider.

# Windows 10 for Microsoft Office users

## Mobile Hotspot - Beyond Windows

### PHONE

It's surprising the number of people who don't know that the Internet data link on their phone can be shared with other computers via a personal Wi-Fi hotspot.

The feature is available on Apple, Android and Windows phones by slightly different names:

- **Apple iPhone/iPad** – Personal Hotspot
- **Apple Mac's** – Internet Sharing
- **Android** - Mobile Hotspot or Tethering.
- **Windows Phone** – Mobile Hotspot

Whatever it's called, the principle is the same. The wireless/mobile broadband/3G/4G etc data connection is shared with other devices via a Wi-Fi hotspot created by the device.

Tethering is often used in cafés which don't have Wi-Fi and also in hotels which either charge a hefty price for Internet access or the free connection is slow.

Two points to consider when using this feature on any portable device.

**Power** – tethering will run down the battery very quickly. Keep an eye on the battery level and, if possible, plug in external power. The device is using both cellular and wifi hardware at the same time plus routing data between the two. Sometimes you can truly feel how hard the device is working because the case gets very warm!

**Data Use** – it's too easy to exhaust a mobile data allowance with a mobile hotspot. The devices you connect to the hotspot treat the link like any normal Internet connection. The Windows [Metered Connection](#) will help limit data use but not as well as you might wish.

### DONGLES

Many cellular/mobile providers sell 'dongles' which are small boxes with a cellular connection and a Wi-Fi hotspot combined. These can be useful in some situations (like a home that can get a standard cable/ADSL Internet connection).

For occasional use, sharing an Internet connection via a phone or laptop is easier and cheaper.

### MOBILE ROUTERS

For regular travelers, it can be worth considering a mobile router. These are small devices which connect to a local Wi-Fi or cable Internet (in a hotel or residence) then create their own Wi-Fi hotspot.

It's a hardware version of the mobile hotspot. You're not dependent on a computer, tablet or phone to supply your Internet connection. The link via a dedicated device is usually faster and there's often an option to connect USB storage directly into the network.

## Windows 10 for Microsoft Office users

Metered Connections - Why use Metered Connections?

# METERED CONNECTIONS

Metered connections is one of the best little features in recent Windows releases. It lets you specify a particular Wifi or broadband link as being 'metered' meaning that use is costlier or more limited than usual. Supporting apps (like Outlook and Windows Update but NOT OneDrive) will limit their data use on a metered connection.

Common metered connections would be mobile broadband (where there's a low data limit per month and high excess charges). Also slow or shared Wifi connections where you want to limit your Internet use to the important things.

We'll explain metered connections in detail. We believe they are an important option for anyone with a portable computer, laptop or tablet PC.

Making a network connection 'metered' can help you reduce the number of downloads and uploads (send/receive) on a particular Internet link.

A metered connection would not be used for background downloads like Windows or Office updates etc. Ideally, only your immediate internet needs (email, web browsing etc.) use a metered link.

As we say, a useful feature that can save Windows users some nasty bill shocks. So why in the name of GatesnAllen did Microsoft decide to make metered connections harder to use in Windows 8.1 and 10?

We can only make some educated guesses about their reasoning. It's possible that Metered Connections got some poor feedback from initial Windows 8 users who didn't fully understand it. Based on that, Microsoft decided to keep the feature but make it less prominent.

Some 'little birds' tell us that Microsoft's mobile network partners weren't happy with Metered Connections because it reduced their high-margin income from excess data and roaming fees.

The result is that Windows 10 has kept Metered Connections but Microsoft has made it hard to use.

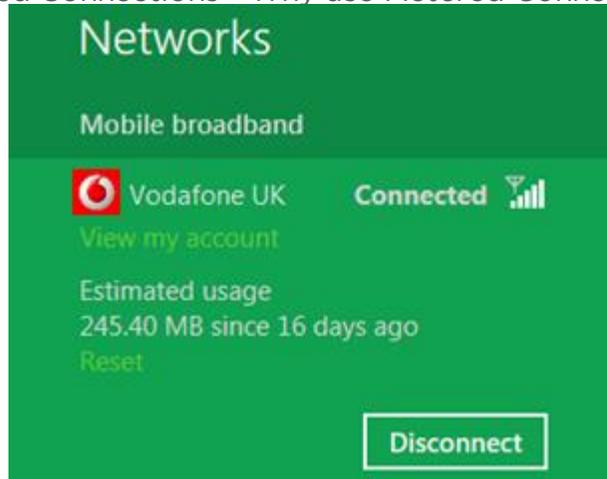
## WHY USE METERED CONNECTIONS?

Metered connections give you an Internet link but stop some of the unnecessary bandwidth use until a better, cheaper, non-metered connection is available.

The most common metered connection is a mobile broadband link. This is when you have a mobile 3G or 4G connection in the hardware or a computer or tablet.

## Windows 10 for Microsoft Office users

Metered Connections - Why use Metered Connections?



*Source: Microsoft*

It's also possible to insert a USB 'dongle' which provides a 3G or 4G connection.

Mobile broadband connections usually have a data use limit (e.g. 1GB per month etc) with high charges if you go over that limit. Metered connections help you reduce the data used and avoid the dreaded 'bill shock'.

Some applications let you further distinguish between metered connections and 'roaming' metered connections. 'Roaming' applies to direct mobile broadband connections (3G/4G) when away from your main location – usually another country. When roaming, data charges are usually much higher.

Wifi connections can also be tagged as 'metered'. You can do this for any wifi connection but is best for:

- Wifi link to a mobile broadband device which creates a wifi hotspot.
- Wifi link from a smartphone with 'tethering'. This turns the smartphone into a wifi hotspot to make use of the mobile data connection in the phone. Apple, Android and recent Windows phones all have this feature.
- A wifi connection with a data use limitation, as can happen in some hotels or café's.
- Any slow wifi connection that will be even slower if unnecessary downloads occur.
- A shared wifi hotspot that's being overloaded by too many people/devices.

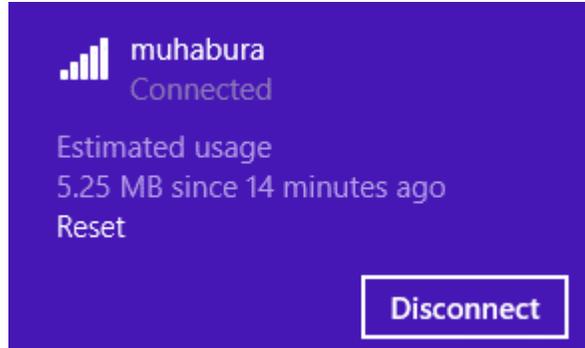
When your computer reconnects to a non-metered Internet link, normal non-metered, behavior resumes automatically.

### DATA USAGE

In conjunction with metered connections was a Windows feature to track the data usage in a particular mobile or wifi connection.

## Windows 10 for Microsoft Office users

Metered Connections - What is limited?



That's been completely dropped from Windows 10. Presumably it was too useful and too helpful for customers <sigh>.

## WHAT WORKS ON A METERED CONNECTION

Pretty much all applications work when a metered connection is available. That's because most programs/apps don't understand the concept. To them all Internet connections are the same.

Few, if any, third-party programs or Modern apps have been configured to detect Metered Connections. For example, cloud storage sync programs like Dropbox, or Google Drive will work with any internet connection they detect.

Microsoft has a developers API for Windows Store apps which includes [hooks](#) to check if a connection is metered or not. We're not aware of any Windows Apps which check for metered connections, including the OneDrive app.

It might have been better if Windows itself could control apps access to metered connections rather than relying on individual developers.

To stop use of an expensive metered connection. Use a Pause option (for synchronization programs like Dropbox) or shut-down the program completely.

## WHAT IS LIMITED?

According to Microsoft, the following are affected by metered connections.

- *Windows Update will only download priority updates.*
- *Apps downloading from the Windows Store might be paused.*
- *Start screen tiles might stop updating.*
- *Offline files might not sync automatically.*

Note Microsoft's deliberate use of the word 'might' (our underlining) in the above list.

That list isn't the whole story, far from it.

## Windows 10 for Microsoft Office users

### Metered Connections - Enable a Metered Connection

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OneDrive does **NOT** support metered connections in Windows 10. This is a change from Windows 8.1.

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Outlook has specific settings for metered connections that we'll explain below.

## ENABLE A METERED CONNECTION

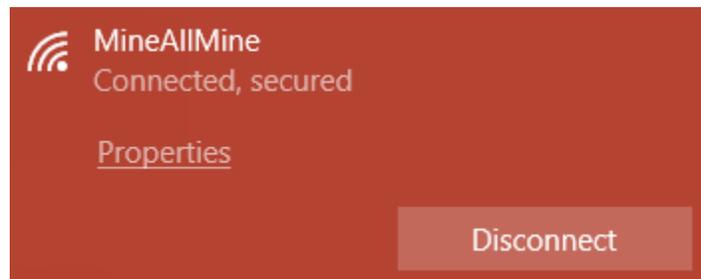
**Mobile broadband** connections, setup directly by Windows, should be metered by default. But you should check to make sure.

**Wi-Fi** connections are NOT metered by default. We'll show you how to switch to metered below.

**Ethernet/wired** connections cannot be set as metered. That includes phones 'tethered' using a cable, instead of Wi-Fi.

To change a connection to/from metered state you now can't do it from the list of networks as you could in Windows 8.

In Windows 10 click on the Network icon on the taskbar to display the current connections. The connected Wifi link will be at the top of that section, click on it to see a little more:



## Windows 10 for Microsoft Office users

Metered Connections - Enable a Metered Connection

Click on Properties and scroll down to change the Metered Connection option.

← Settings

### MineAllMine

#### Metered connection

If you have a limited data plan and want more control over data usage, make this connection a metered network. Some apps might work differently to reduce data usage when you're connected to this network.

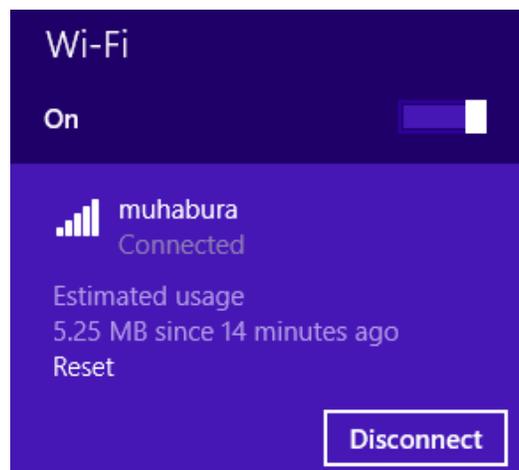
Set as metered connection



Metered connections are done by Wi-Fi hotspot name (SSID). Once set to metered, if you reconnect to the same hotspot again, it will continue to be metered.

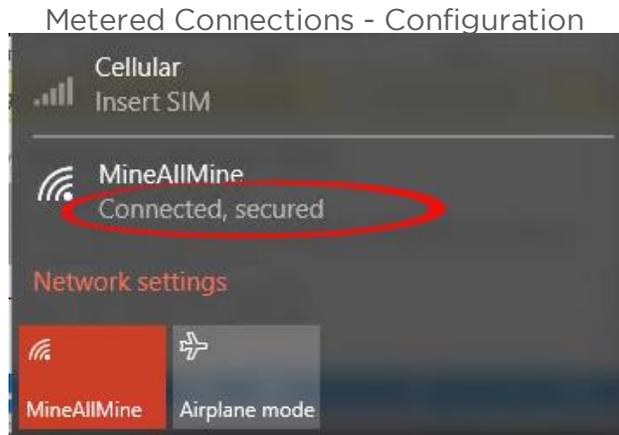
This will change only the current connection (see the SSID to check which one you're changing). It's not possible to change the setting for another connection until it's running.

In Windows 10 there is NO indication or confirmation that a particular connection is 'metered'. In Windows 8 you could see from the networks list about metering via the data used information.



In Windows 10 this is what you get:

## Windows 10 for Microsoft Office users



Notice what's missing? There's no indication that it's a metered connection nor the data used!

We can't find any obvious place where a metered connection is notified to the user. You have to return to the Advanced network options where you set the metered connection in the first place!

## DISABLE METERED CONNECTIONS

In Windows 10 you have to return to the network properties to disable the metered connection option.

Remember: when your computer reconnects to a non-metered Internet link, normal 'full' connections resume automatically.

## CONFIGURATION

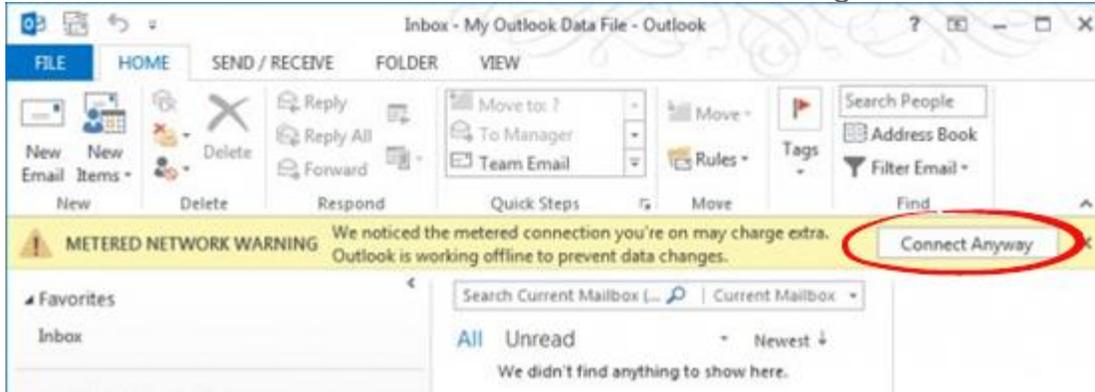
The configuration of Metered Connections is done from each application that supports it. Sadly, there's no central configuration or status page.

### OUTLOOK 2013/2016

Outlook 2013/2016 will detect a metered connection and won't connect to mail servers until you explicitly approve.

## Windows 10 for Microsoft Office users

### Metered Connections - Configuration



There doesn't seem to be any way to turn off this behavior in Outlook 2013/2016 or configure it on a 'per connection' basis. You have to click 'Connect Anyway' each time. A glaring and annoying omission in our view.

### ONEDRIVE

A reminder that OneDrive in Windows 10 will work normally on metered connections. There's **no** switch to disable OneDrive on a metered connection, as there was in Windows 8.

### SEARCH SUGGESTIONS

Unlike Windows 8, Windows 10 has no search settings related to metered connections.

### DEVICE DRIVERS

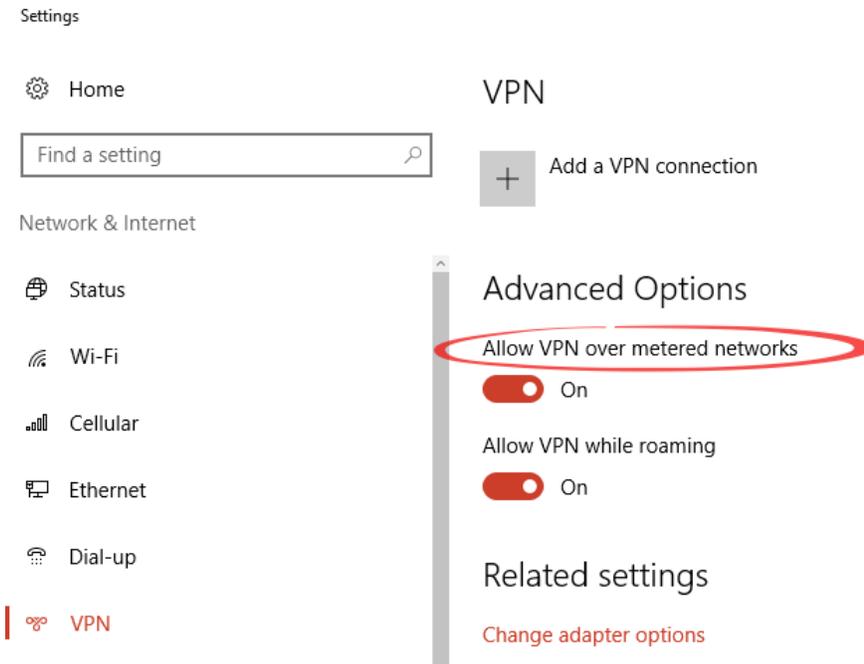
Similarly, Windows 10 has dropped the device driver downloads settings related to metered connections.

# Windows 10 for Microsoft Office users

## Metered Connections - Data use by application

### VPN

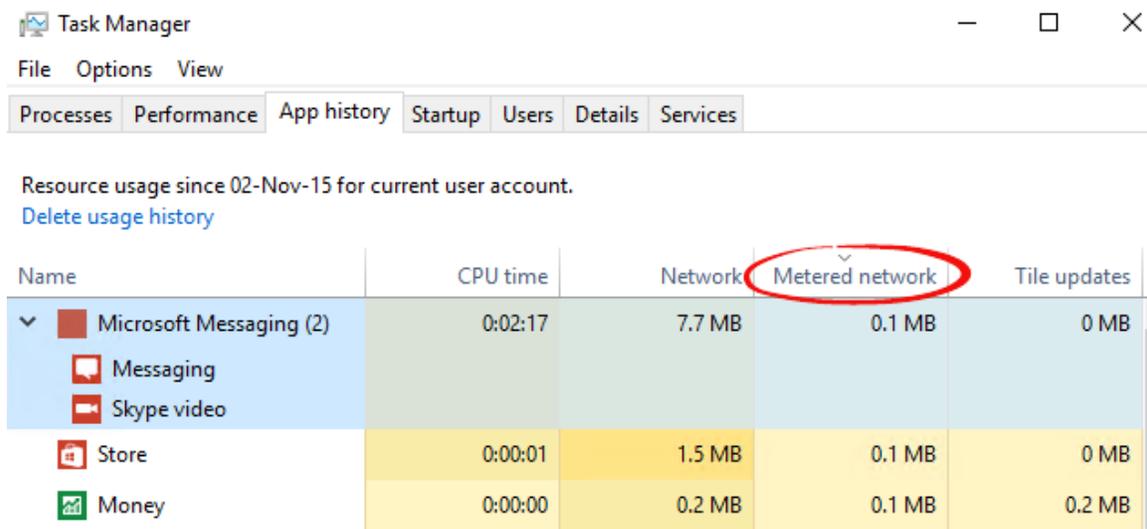
At Settings | Network and Internet | VPN is an option to allow or disable VPN connections over metered networks.



## DATA USE BY APPLICATION

Windows lets you see which applications are using the network connection. Alas, this only applies to Modern apps, not standard Windows applications.

Go to Task manager | More details | App History:



There are columns to show network data use and metered network use.

# Windows 10 for Microsoft Office users

## Metered Connections - More Network Information

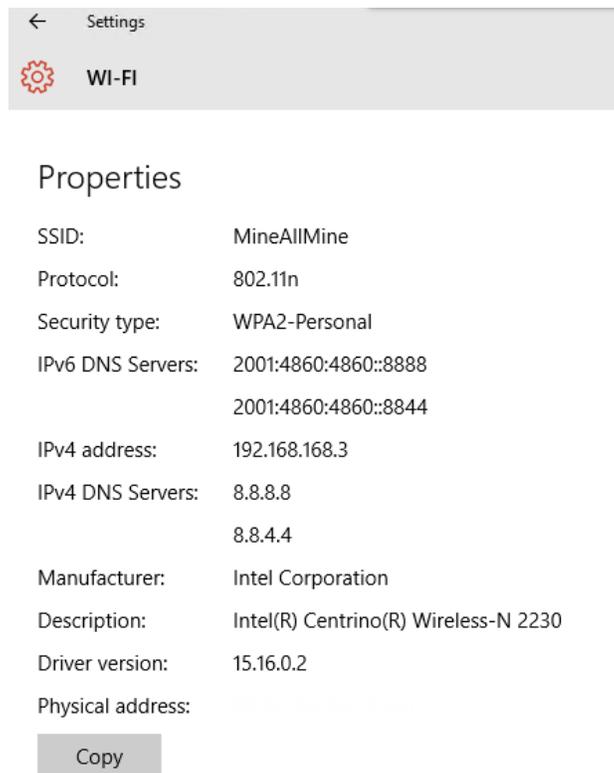
---

*Sidebar: the above screen shot was taken after a metered connection was on for less than 20 minutes. Notice that four different Windows apps had taken bandwidth in that short time despite the fact that NONE of those apps were used. In fact, the messaging apps have never been used at all. The 'Money' tile had been removed from the Start Menu on that machine yet it's still updating from the Internet. The total use isn't great but it's an example of how many (unnecessary) linkages there are in Windows 10 back to Microsoft.*

---

## MORE NETWORK INFORMATION

Further down the connection page (Settings | Network & Internet | Wi-fi then click on the current connection is some useful information:



The Copy button will grab a text copy of all the settings like this:

```
SSID: MineAllMine
Protocol: 802.11n
Security type: WPA2-Personal
IPv6 DNS Servers: 2001:4860:4860::8888
                  2001:4860:4860::8844
```

## Windows 10 for Microsoft Office users

Metered Connections - More Network Information

IPv4 address: 192.168.168.3

IPv4 DNS Servers: 8.8.8.8

8.8.4.4

Manufacturer: Intel Corporation

Description: Intel(R) Centrino(R) Wireless-N 2230

Driver version: 15.16.0.2

Physical address:

You can use that text information to send off for help or just setup requirements like adding the Physical (aka MAC) address to security settings in a modem.

The copy button is necessary because the tile interface doesn't normally allow you to select and copy text on the screen.

# BACKUP

Backup got a major overhaul in Windows 8 with the arrival of File History, a combined backup and file version retention system. There's little change in Windows 10.

**File History is important for Microsoft Office users.** Microsoft Office dropped its multi-version document support many years ago and only with the arrival of File History in Windows is there a (partial) replacement.

Somewhat buried away is Windows [System Image Backup](#).

---

*Our [Office Backup Handbook](#) goes into a lot more detail about backups of files, documents and settings, especially the important and special case of Microsoft Outlook.*

---

## FILE HISTORY

File History will first copy all the files from what Microsoft has decided are in the necessary locations to be backed up.

The system continues to run in the background on a schedule (default is hourly). Each time File History runs, any changed files are copied again as versions in addition to the original file. The result is a backup of your personal files including files with any changes over time.

---

*Sound familiar? The Time Machine feature on Macintosh computers lets users not only restore lost files but also effectively restore their computer or a file to some point in the past. Like all Apple options it looks great and works without too much configuration.*

---

Like most Microsoft products, File History isn't as elegant as its Apple counterpart but it has more configuration options.

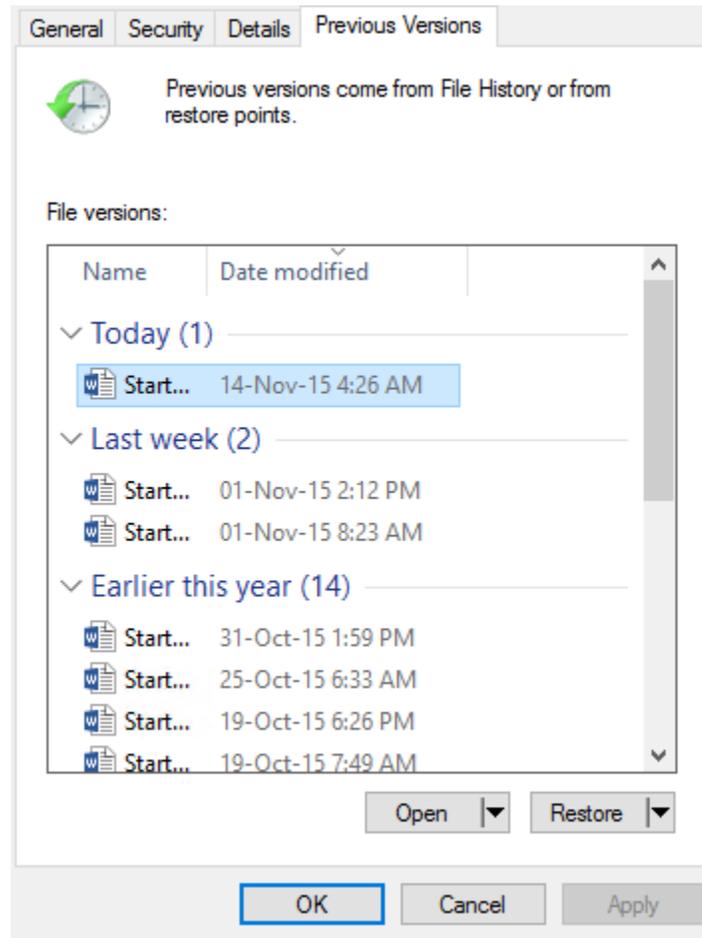
In technical terms, File History is a form of multilevel incremental backup.

File History replaces the 'Shadow Copy' or 'Previous Versions' feature in earlier versions of Windows.

## Windows 10 for Microsoft Office users

### Backup - File History

However, in Windows 10, File History has been properly integrated into Windows Explorer. Right-click on a file then Properties | Previous Versions.



For Office users, File History means you automatically have access to past versions of a document. If you realize that parts of a document, worksheet or presentation were deleted or a past version was better, then you can use File History to get a prior version of the same file. Any files that have been deleted, even from the Recycle Bin, can be recovered from a properly setup File History feature.

### WHAT IS BACKED UP

Windows selects the places that will be backed up and you can't directly change those locations.

The locations backed up are:

- Libraries (not network locations/shares)
- Desktop
- Contacts

## Windows 10 for Microsoft Office users

### Backup - File History

- Favorites
- OneDrive file/folders that are saved offline on the local computer.

New in Windows 10 is the ability to add a single folder to the File History list.

You can exclude folders from File History and we'll show you a workaround to get extra folders included in backups.

File History runs 'silently' in the background; you won't know its running unless there's a problem. In technical terms it's a low priority task that runs when other programs aren't demanding CPU or drive access.

Open files, like Office documents you're working on, should also be copied by File History because it uses the 'Volume Snapshot Service' feature that's been available for past versions back to Windows XP.

#### PERMANENT EXCLUSIONS

File History has some important exclusions – none of the following are copied by File History:

- protected by the Encrypting File System (EFS)
- in a network location
- not stored on an NTFS formatted drive

These mandatory exclusions are important, especially the one regarding network locations.

Anyone using Windows in an organization will probably have their 'My Document' folder as a network share eg \\SERVER\Username . That includes Small Business Server clients. Those aren't covered by File History. They should be backed up via the server but coverage via File History would have been nice.

---

*The lack of backup support for network shares (especially as part of a library) is, perhaps, understandable. However, the lack of clear warnings means we fear some people are going to get a nasty shock when they find folders they assumed were protected, are not.*

*Microsoft has gone to some lengths to stop File History working on network shares. They've even blocked NTFS Symbolic links that redirect a local folder to a network address (we know because we tried < sigh >).*

---

NTFS formatting is almost universal for internal drives on Windows computers since it's required for the boot drive. However external drives

## Windows 10 for Microsoft Office users

### Backup - File History

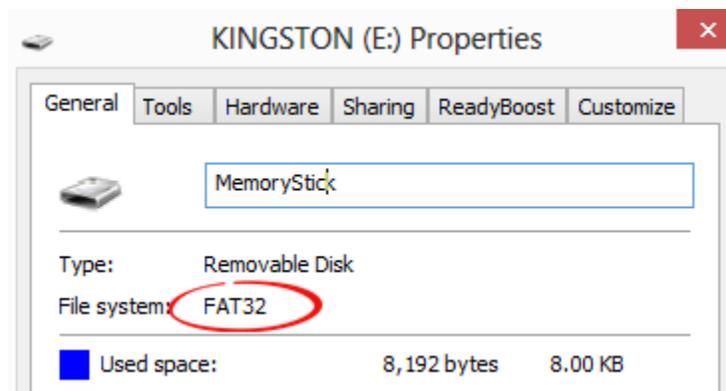
aren't usually formatted as NTFS to accommodate our friends with Macintosh computers. FAT32 is the common formatting for external drives and memory sticks.

---

*NTFS drives are required because File History uses the NTFS Change Journal, a running list of all the file changes made on each NTFS drive. This avoids the need to fully scan the drive to find changes.*

---

You need to check external drives to see how they are formatted. Right-click on a drive icon and choose Properties | General and look at the File System.



External Drives with FAT32 formatting can be used as the destination for File History backups but not as the source.

Unfortunately, the warning about these exclusions isn't very helpful. Only when File History is OFF will you see this general warning:

#### Keep a history of your files

File History saves copies of your files so you can get them back if they're lost or damaged.

**i** File History has found files that are encrypted with Encrypting File System, on a network location, or on a drive that doesn't use the NTFS file system. These files won't be backed up.

File History is off

There is not much help from Microsoft there. There is nothing specific in the warning with no indication about what type of excluded files have been found nor a location. You have to do some guesswork and hunting to figure out the problem.

Even this lame warning message disappears after File History is running.

## Windows 10 for Microsoft Office users

### Backup - File History

Worse, if you add an unavailable source location (eg a network share to a library) after File History is turned on, there's no warning from File History that the location won't be backed up.

On top of all that is the location not covered by any warning and isn't talked about at all, important user data in the `\\user\\AppData\` folders is NOT backed up by default.

---

*The AppData folder tree has important Office data, especially Outlook data files (PST / OST files). These are NOT backed up by File History, at least not by default.*

---

[Cloud Storage folders and files](#) may be covered by File History if you set it up correctly, see below.

File History doesn't have a way to estimate the space needed for the initial backup. You should go through the libraries and other locations to figure out a rough size of the initial File History backup.

#### WARNING!

Windows File History feature is intended to work quietly in the background without getting in your way. That sounds great but Microsoft has taken that philosophy too far. Many problems are just noted in the event log without any kind of clear warning to the user.

It's quite possible for File History to run, without warning, but not copy all the files you expect.

Occasionally, it's a good idea to check the [event viewer](#) for problems or check the File History backup directly to ensure it has copies of some essential documents.

#### ANOTHER WARNING!

Windows 10 has split the File History settings between the Control Panel and newer Settings | Update & Security | Backup.

# Windows 10 for Microsoft Office users

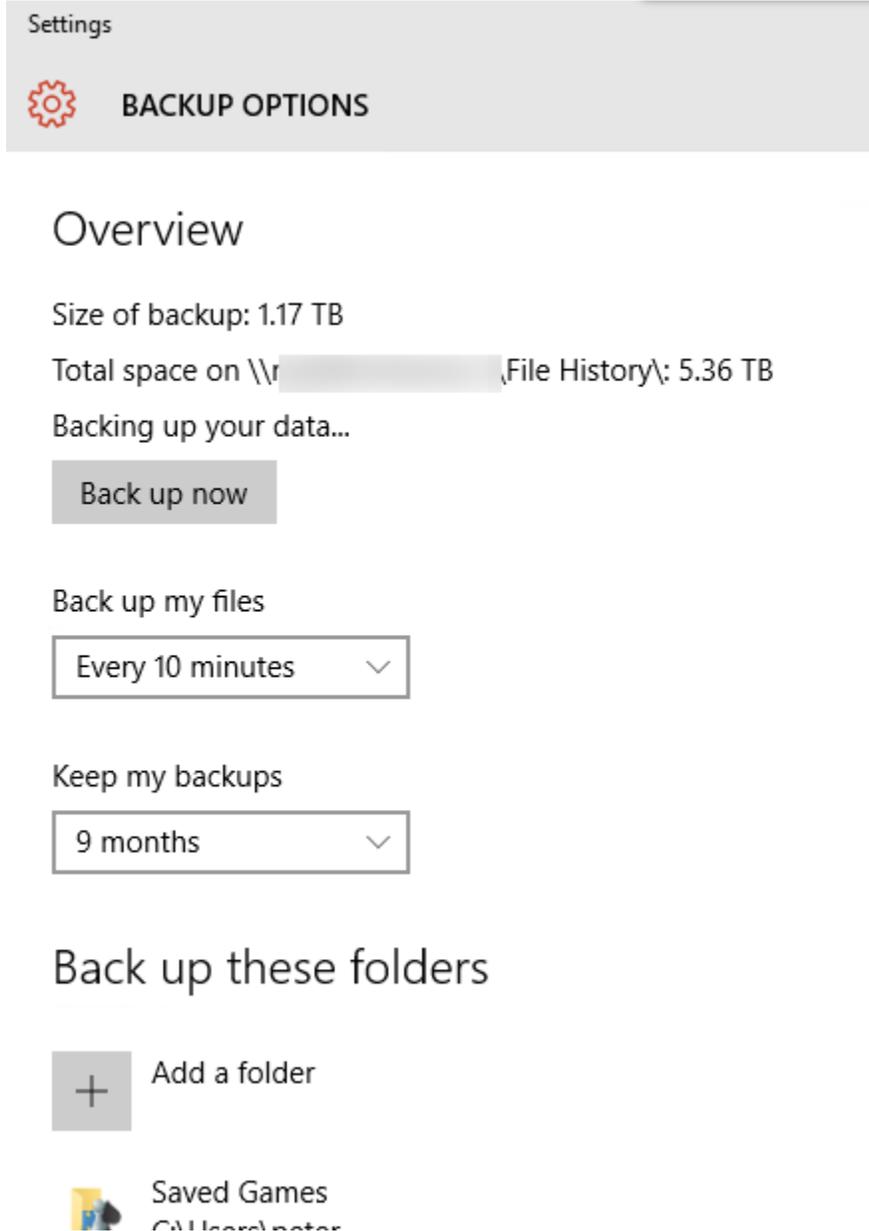
## Backup - File History

The screenshot shows the Windows 10 Settings application. The title bar reads 'Settings' and 'Backup - File History'. The main header is 'UPDATE & SECURITY' with a search box 'Find a setting'. The left sidebar lists: Windows Update, Windows Defender, Backup (highlighted), Recovery, Activation, and Find My Device. The main content area is titled 'Back up using File History' and contains the following text: 'Back up your files to another drive and restore them if the originals are lost, damaged, or deleted.', 'Automatically back up my files' with a red toggle switch set to 'On', a link for 'More options', and a link for 'Looking for an older backup?'.

# Windows 10 for Microsoft Office users

## Backup - File History

Click on More options to see some useful information.



The screenshot shows the Windows Settings application, specifically the 'Backup Options' section. At the top, there is a 'Settings' header and a gear icon next to the title 'BACKUP OPTIONS'. Below this is an 'Overview' section. It displays the 'Size of backup: 1.17 TB' and 'Total space on \\r [redacted] \File History\': 5.36 TB'. A status indicator says 'Backing up your data...' and there is a 'Back up now' button. Under 'Back up my files', there is a dropdown menu set to 'Every 10 minutes'. Under 'Keep my backups', there is a dropdown menu set to '9 months'. The 'Back up these folders' section is partially visible, showing a '+ Add a folder' button and a folder named 'Saved Games' with a folder icon.

Unlike the Control Panel version, you can nominate a folder to backup directly (rather than the fixed Libraries option in Control Panel).

Below the long list of folders to include and exclude there's an 'Advanced Settings' link that will take you to File History in Control Panel.

Almost all the File History setup is still on the Control Panel, so that's what we've focused on in this chapter.

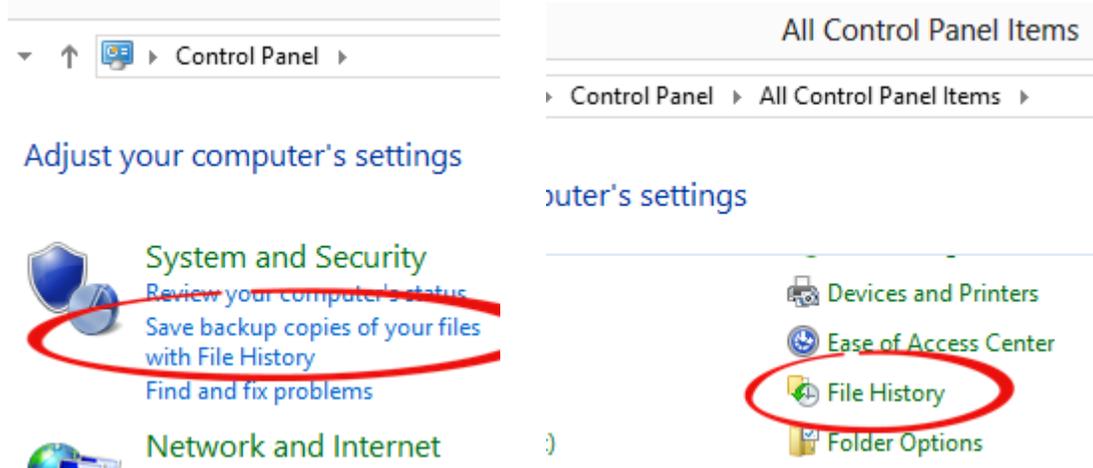
# Windows 10 for Microsoft Office users

## Backup - File History

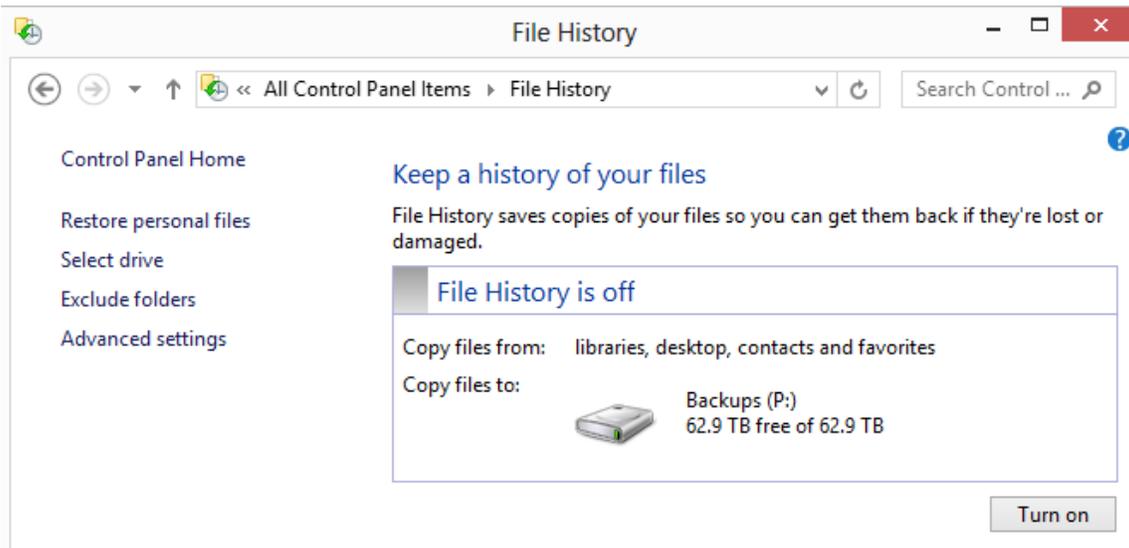
### STARTUP

File History is not enabled by default. You have to dig into the Control Panel, configure it and start it.

Go to Control Panel | File History via either the standard or Small Icons view.



Here's the initial screen:

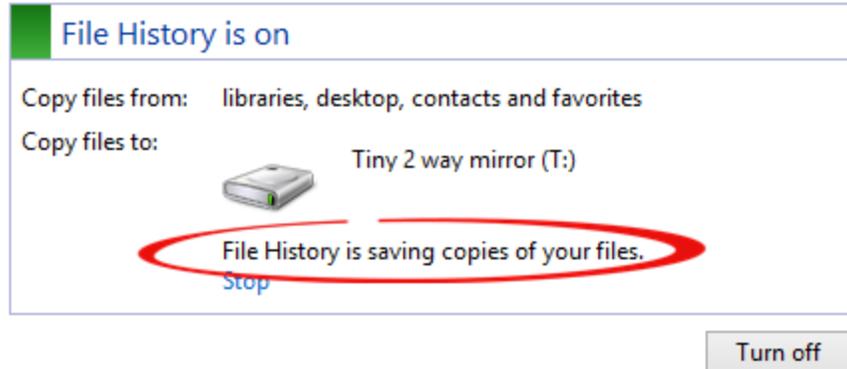


You could just click 'Turn On' and let Windows 8 run with the defaults but it's far better to set File History up yourself and be aware of what it's going to do.

When you first run File History it will probably take a long time as it makes an initial copy of all the files it's chosen to backup. Let it run in the background. If you want to know how it's going return to the File History dialog.

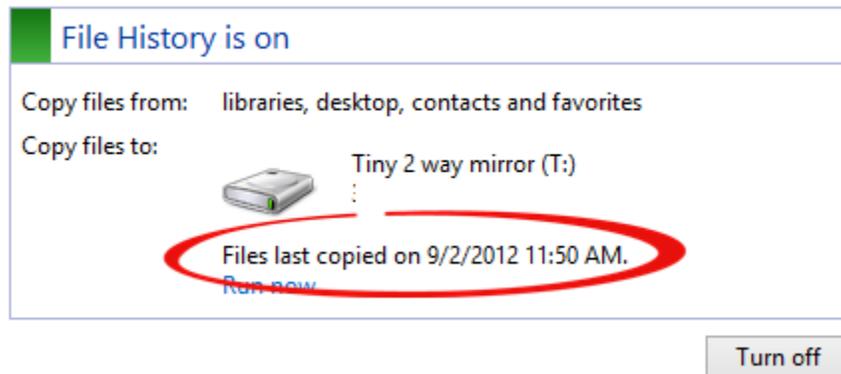
# Windows 10 for Microsoft Office users

## Backup - File History



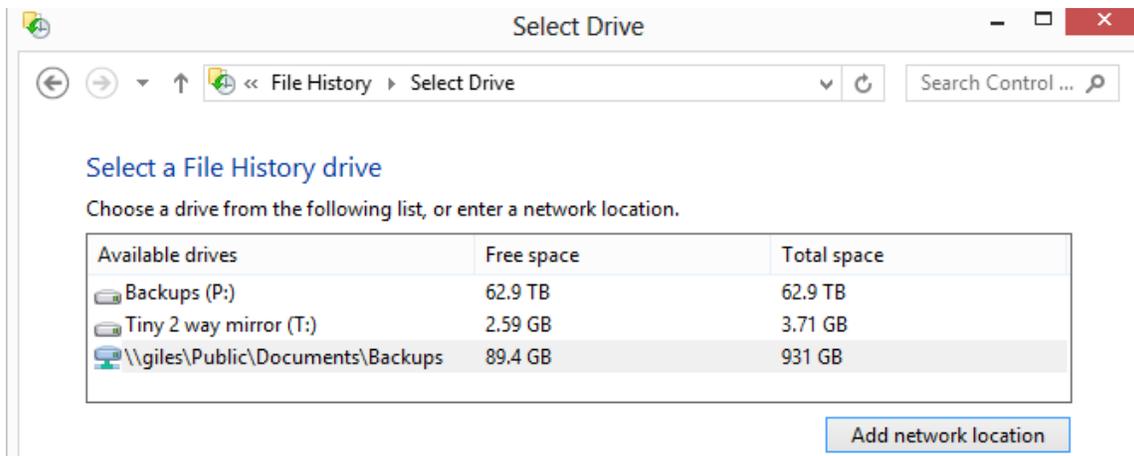
Alas there's no progress indicator, File History could be seconds, minutes or hours away from completion and you've got no way of knowing.

When File History isn't copying files it will tell you when it last did any work.



### SELECT DRIVE

To begin you have to choose the destination for File History backups. Windows has selected an eligible drive for you but that can be changed at Select Drive.



## Windows 10 for Microsoft Office users

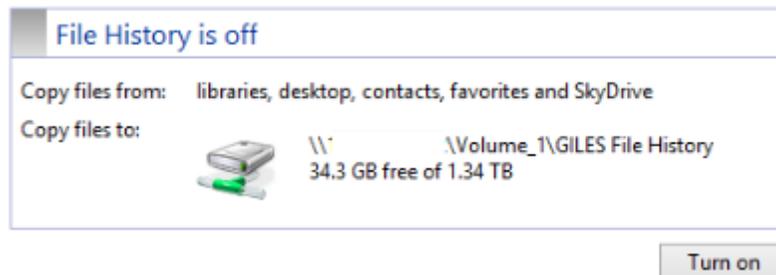
### Backup - File History

Notice that a network location can be added as the File History destination. That's very useful because you can do cross backups between computers on a network or use Network Attached Storage (NAS). NAS isn't compatible with Windows Storage Spaces but the (usually) vast space on those devices can be used for backups.

Other data can be stored on a File History target drive.

The drive should be a separate one from the drives you use normally to run Windows and store files. This protects you against data loss from drive failure (i.e. there's no point in having a backup if the data and backup are on the same drive).

After selecting a destination drive, click OK and return to the File History dialog. Make note of the amount of free space on the destination drive and ensure it's enough for the total backups plus future changed files.



Storage Spaces can be used as File History destinations; in fact, they are a good choice because they can be more easily expanded to greater sizes.

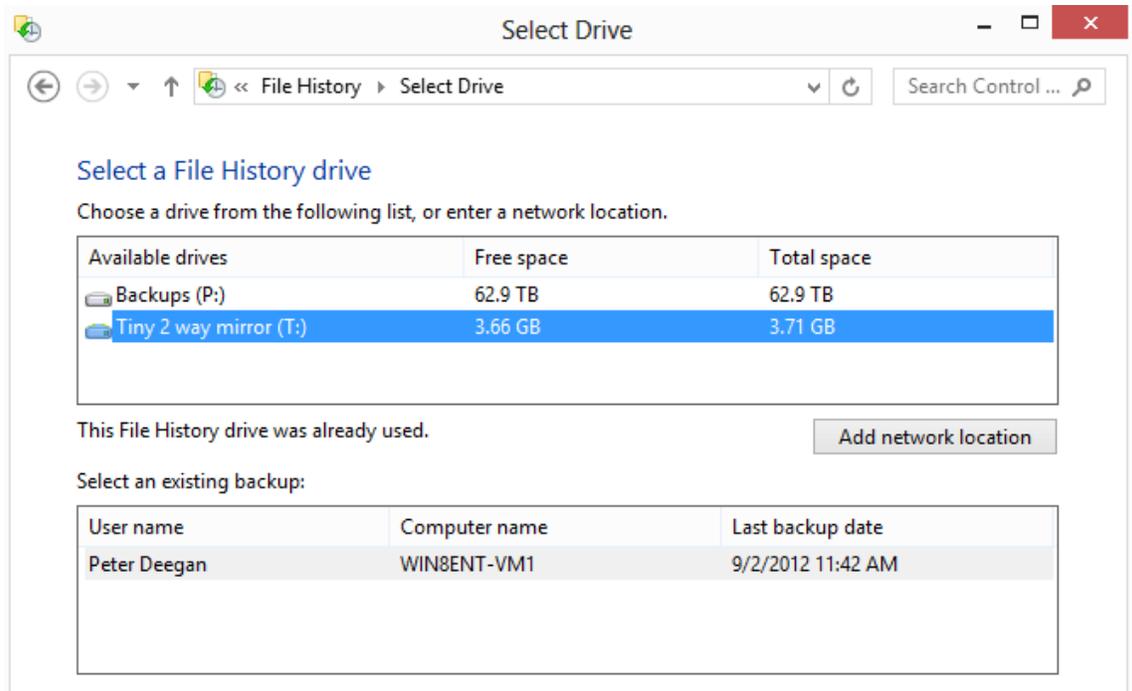
#### CHANGE DRIVE

Once you have File History running, you can change the destination drive. The 'Select Drive' link becomes 'Change Drive' instead.

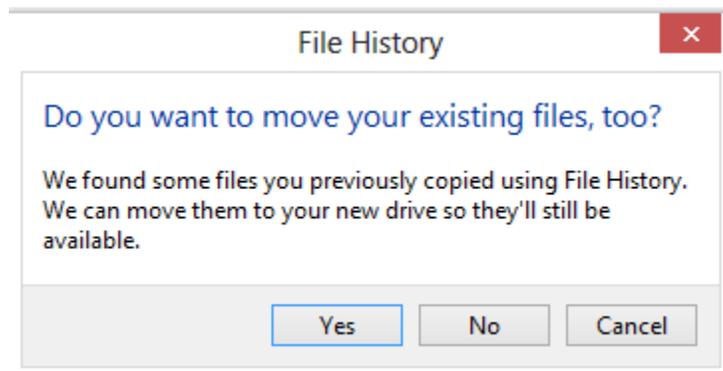
# Windows 10 for Microsoft Office users

## Backup - File History

Now the Select Drive dialog will show you the available destination drives and, if you select a drive with an existing backup it will show you which ones are there.



Select an alternate location and click OK. You'll be offered the opportunity to move the existing File History to the new location – click Yes if you want that move to be done.



Make sure you leave enough time for the move of potentially a large amount of data before disconnecting the old location.

### REMOVABLE DRIVES

A removable drive like a USB memory stick can be used as a File History destination. File History will copy versions to the temporary drive when it's connected AND the scheduled time is reached.

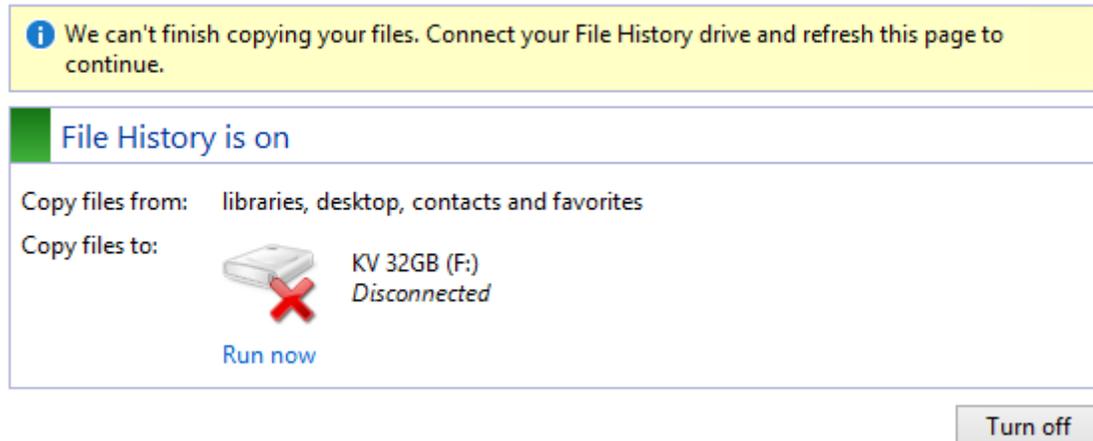
# Windows 10 for Microsoft Office users

## Backup - File History

This might be useful for backups of a laptop computer. You can attach an external drive for File History to use when you're at home or office.

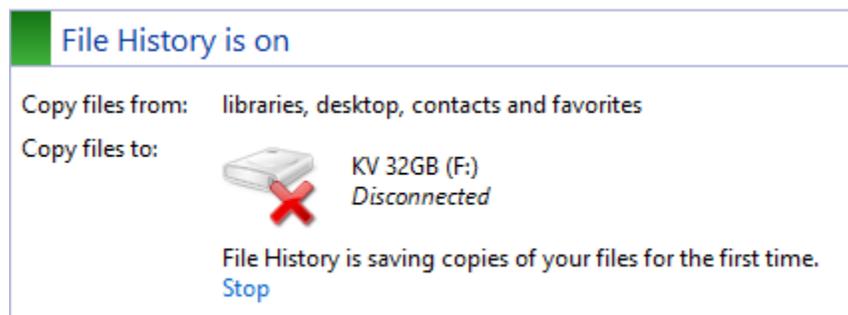
If the destination drive is unavailable there's warning in File History but not the Alert Center.

File History saves copies of your files so you can get them back if they're lost or damaged.



If you plug the drive back in, File History won't immediately take action. But when the copying schedule is triggered it will resume backup. Or you can click 'Run Now' to force the backup.

We saw a minor display bug during our testing. The destination drive is wrongly shown as 'Disconnected' even though File History is happily copying files to it.



If you switch to another configuration dialog (e.g. Advanced Settings) and click back to the main dialog the display is properly updated.

Removable drives can also be a File History source as long as it is included in one or more libraries. If the removable drive isn't available, File History will ignore it and proceed with the rest of the backup.

# Windows 10 for Microsoft Office users

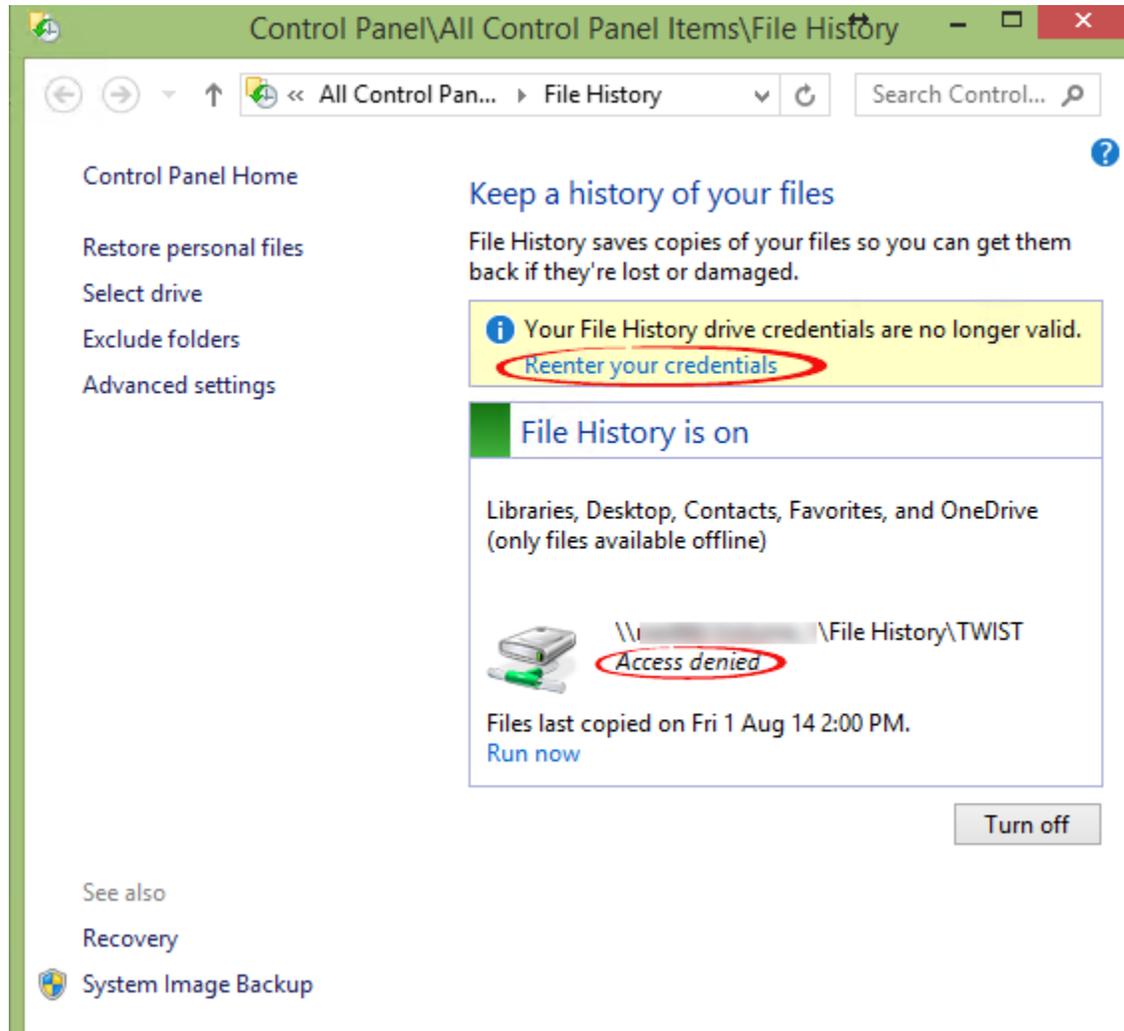
## Backup - File History

### CREDENTIALS

If the File History destination requires a login (typically a network share) you'll be prompted for them when you first setup.

File History records the destination login separately from Windows Explorer.

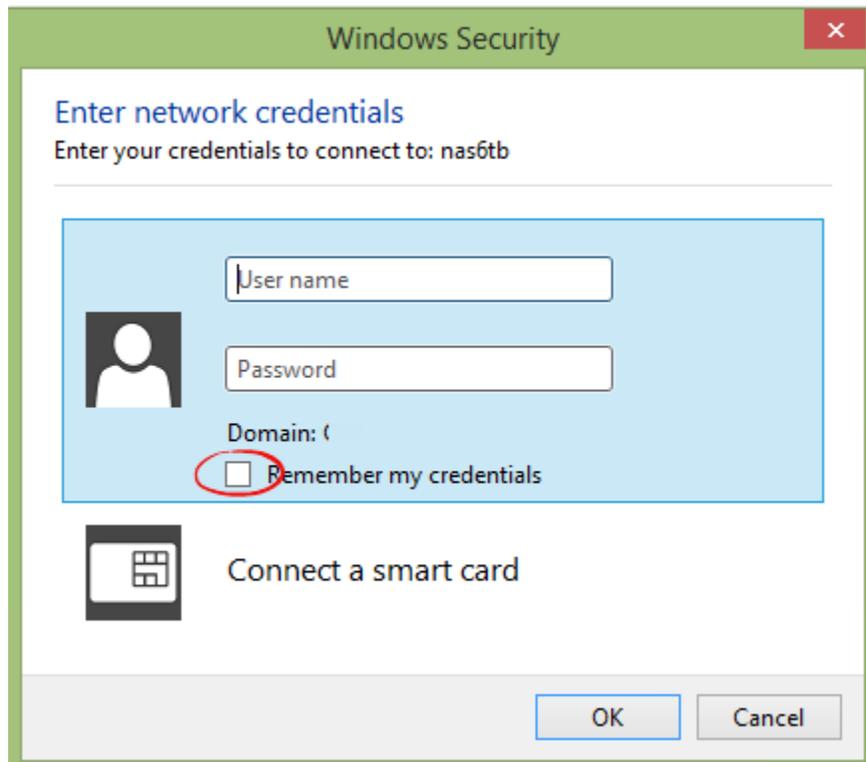
If the login changes you're prompted to change in the taskbar 'Action Center' and then in the File History dialog.



## Windows 10 for Microsoft Office users

### Backup - File History

Enter the name / password and make sure you tick the 'Remember my credentials' box.



### EXCLUDE FOLDERS

While you can't add folders to File History, at least not directly, you can exclude folders from the predetermined backup.

Why do this?

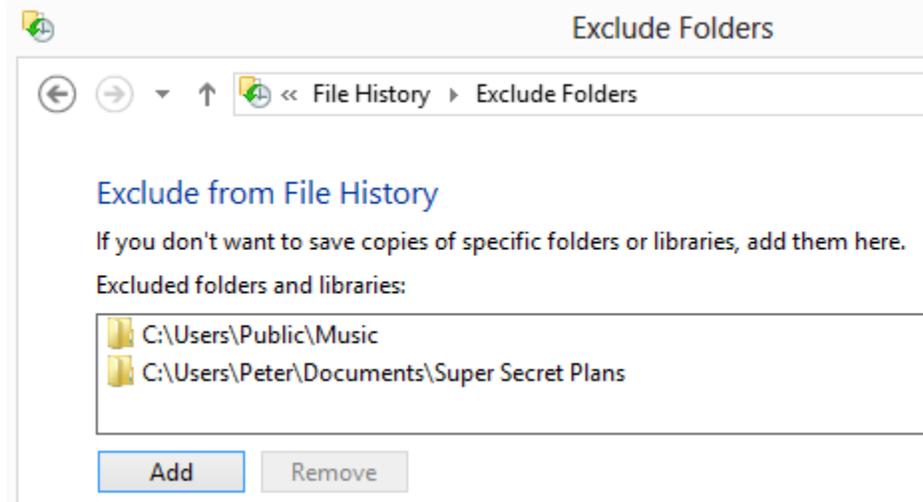
Some folders might be extra sensitive and you don't want additional copies floating around (remember that File History storage isn't encrypted by default).

Other locations might be too large to be handled by the usually available backup storage. For example, many people have a large My Music folder – my own is 100GB which is considered small in some quarters. To include that folder in a File History backup would overflow the available resources so I exclude it and backup My Music separately. The same logic can apply to the large Pictures and Video folders. We'll show you a workaround for that next.

## Windows 10 for Microsoft Office users

### Backup - File History

To exclude a folder, click on Exclude Folders and then Add to select a location.



The Music library, by default has two folders, My Music and Public Music. In this example we've excluded the Public Music folder from File History backups. This leaves My Music to be backed up.

You could use this exclusion method to separate your larger collection of files (ie too large to backup in File History). Put the larger collection in the Public Music folder and add any new files to the 'My Music' folder. The latter will be backed up by File History.

Of course you could do the same trick for the Documents, Downloads, Pictures and Video libraries too.

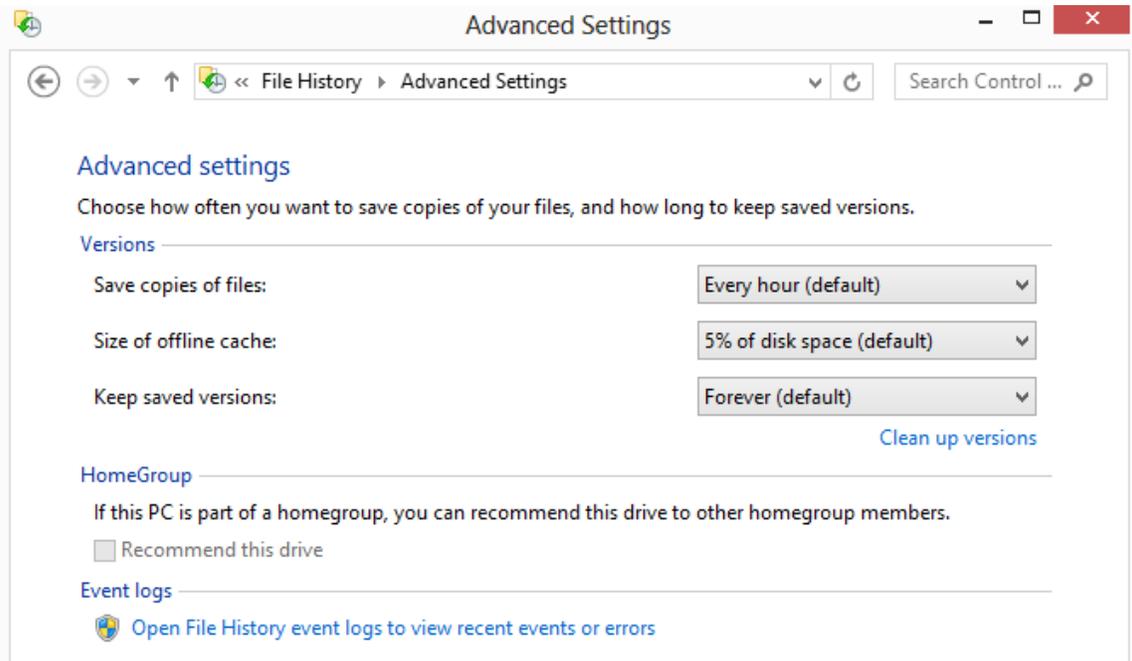
Exclude folders is also available at Settings | Update & Security | Backup | More Options.

# Windows 10 for Microsoft Office users

## Backup - File History

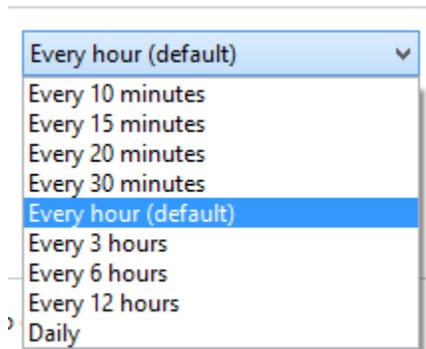
### ADVANCED SETTINGS

Under the Advanced Settings link are some important choices.



### SAVE COPIES OF FILES

This option controls how often File History will run to backup new and changed files since the last run.

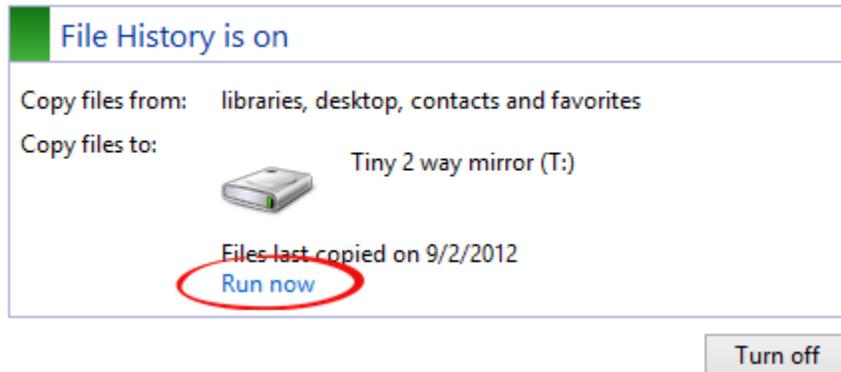


The more often it runs, the larger the backup store is likely to be because more versions are created. On the other hand, frequent regular backups are more likely to have a file version you need.

# Windows 10 for Microsoft Office users

## Backup - File History

You can manually start a backup run (maybe after a lot of changes have been made, before you do some upgrades to the computer or take a laptop away from backup storage) by clicking 'Run Now' on the File History control page.



We'd love Microsoft to allow a 'Run Now' shortcut that could be put on the desktop or Start Menu. This would let you quickly grab a 'File History' copy of new files when you like. For example, before taking a laptop/tablet on the road or an important milestone in a project.

### SIZE OF OFFLINE CACHE

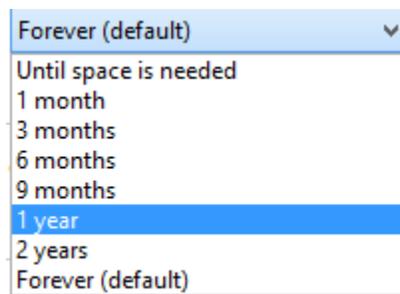
File History has a 'fall back' position for when the destination for backups is unavailable (offline). Maybe an external drive has been unplugged or the network is down.

Whatever the reason, if File History can't save files as usual, it puts them in a hidden folder on the Windows local drive until normal backups to the nominated drive can resume.

This setting controls the maximum size of that hidden folder. The default is 5% of disk space on the system drive with choices of 2%, 10% or 20% available.

### KEEP SAVED VERSIONS

File History can keep past versions of files forever, or at least as long as there's disk space available.



## Windows 10 for Microsoft Office users

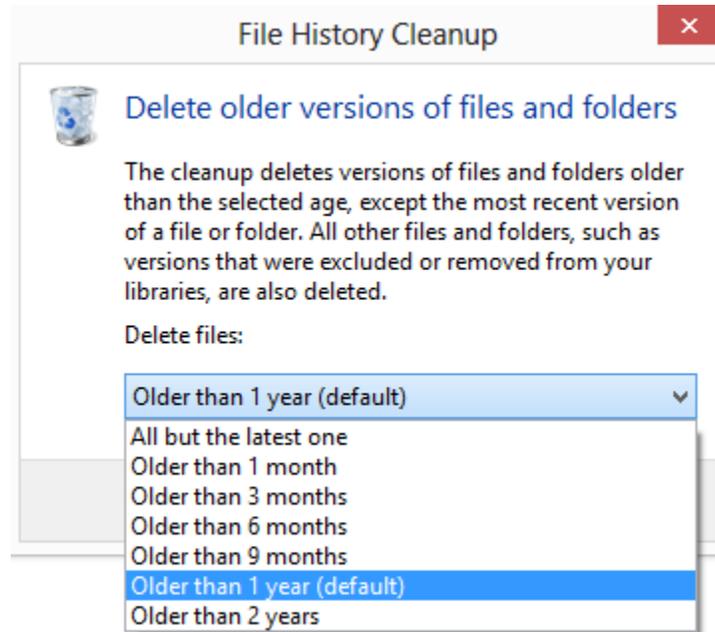
### Backup - File History

Forever is the default and probably best choice because you never know how far back you'll need a past version or deleted file.

If you have limited space on the backup destination choose 'Until space is needed'. This implies that older copies are removed from the backup store to make room for new backup files.

#### CLEAN UP VERSIONS

Tucked under 'Keep saved versions' is a 'Clean up versions' link.



As the dialog says, this will remove older versions from the backup but the most recent version of a file is always retained.

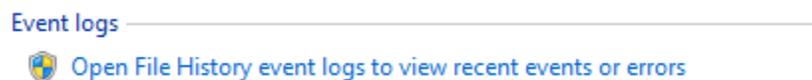
Use this option if you're running out of space on the backup destination.

#### HOMEGROUP

If you have a HomeGroup network of computers, you can recommend your selected backup destination as the preferred location for backups by other computers.

#### EVENT VIEWER

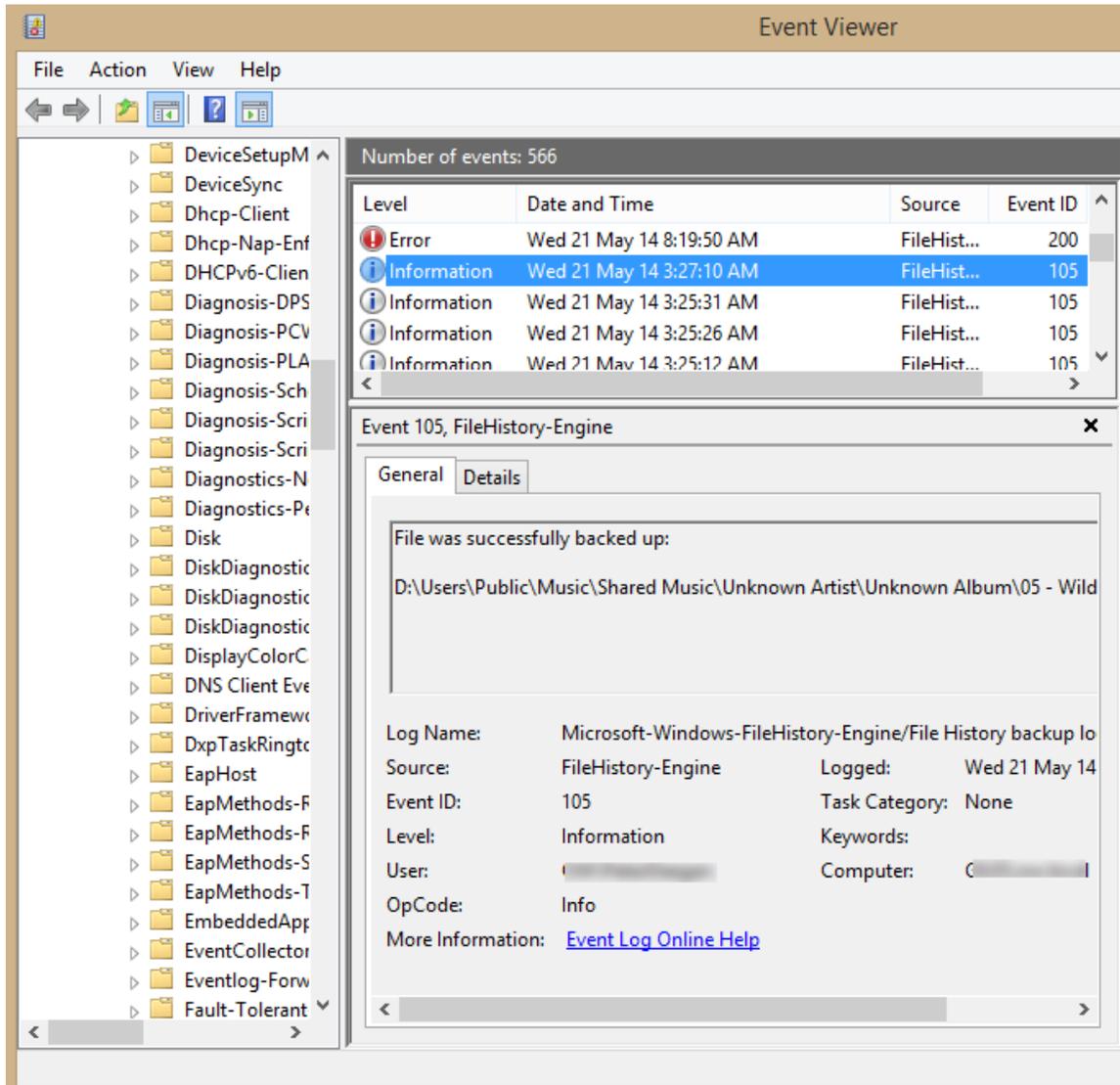
At the bottom of Advanced Settings is a link to the inner workings of File History.



# Windows 10 for Microsoft Office users

## Backup - File History

It will open up the Event Viewer to show events related to File History.



The list is sorted with the most recent at the top.

'Information' entries can be ignored. Anything with 'Error' or 'Warning' should be looked at since it's an indication of a problem that might need fixing.

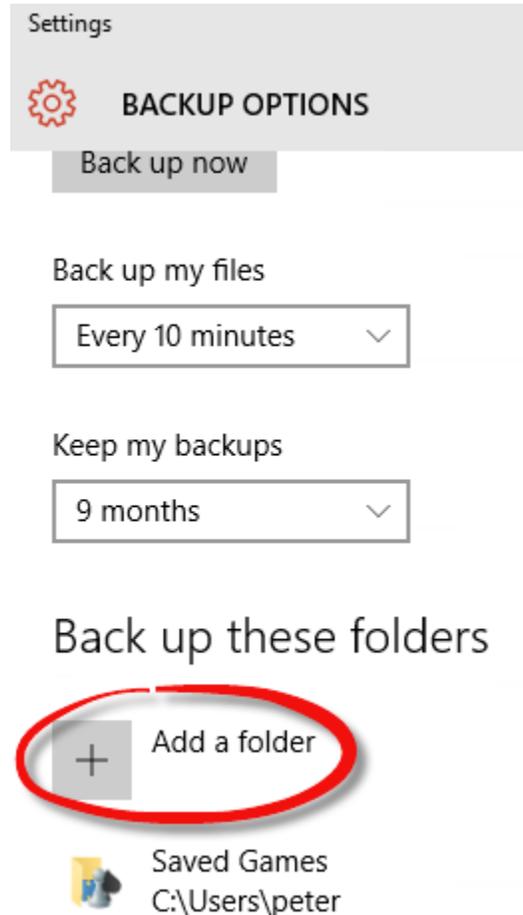
Despite appearances, you can select text in the General tab and copy (using a shortcut like Ctrl + C). This is handy if you're searching the web for help or are asked by support staff for details.

## Windows 10 for Microsoft Office users

### Backup - File History

#### ADDING A FOLDER FOR BACKUP

Until Windows 10 Microsoft didn't let you specifically add folders to the backup list. Now it's available at Exclude folders is also available at Settings | Update & Security | Backup | More Options.



The alternative is to add a folder to a Windows library. File History will backup local folders that are part of any Library.

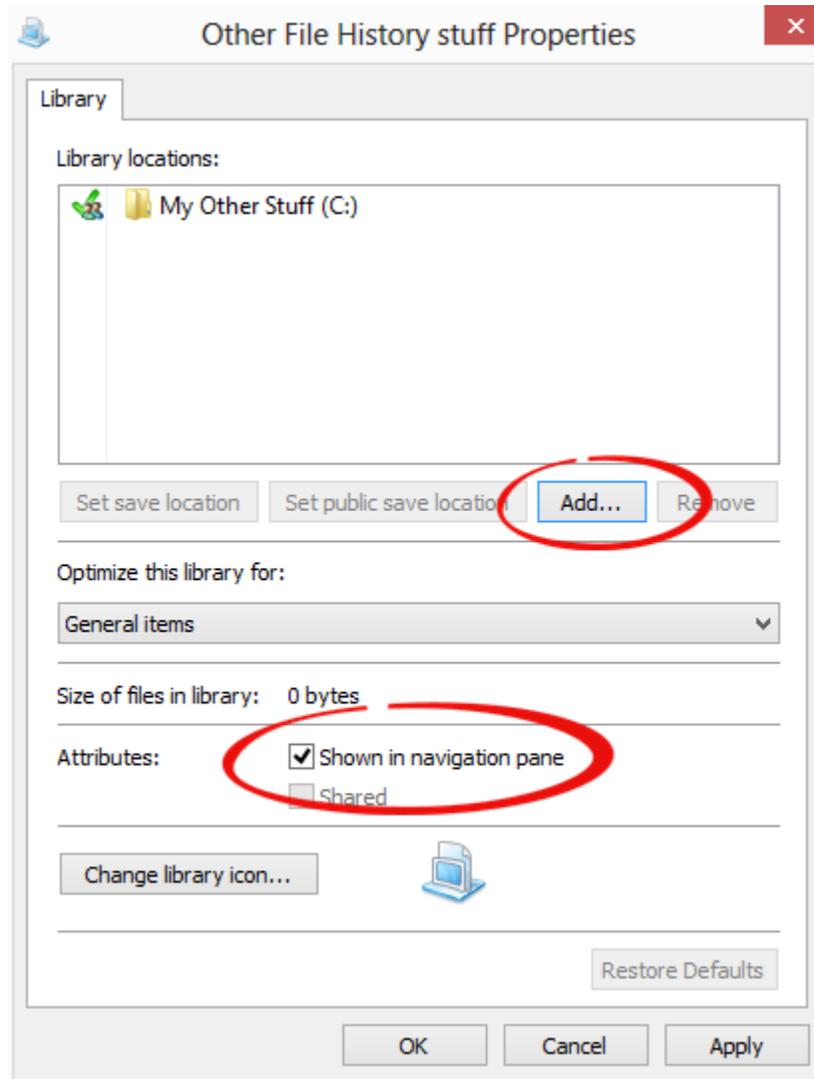
This should not be a problem because any folders you're working on should be part of a library to make use of their powerful features.

If there's a folder that you don't want in a library but do want backed up by File History, create a new Library just for File History.

## Windows 10 for Microsoft Office users

### Backup - File History

Right-click on the Libraries item in Explorer choose New | Library then give the library a new name. Right-click on the new library and choose Properties. Add one or more folders to the library.



You can hide this library from the daily Explorer view by unchecking the 'Shown in navigation pane' attribute. Files in the hidden library are backed up by File History.

# Windows 10 for Microsoft Office users

## Backup - File History

### OUTLOOK

It's NOT a good idea to include Outlook data in File History, for reasons we'll explain below. The [Office Backup Handbook](#) has a chapter devoted to Outlook backups from the various places that data and settings are stored.

You could setup File History to backup Outlook data files. However, that would be a considerable drain on your computer's resources and take up a lot of disk space.

A primary Outlook data file (PST or OST file) is usually several Gigabytes in size with all items (email, calendar, contacts etc) stored in a single large file. Any change to that file, however small, will be considered a change by File History and it will make a version copy of the entire file.

Let's say you have a mere 1GB PST file (small by today's standards) and setup File History to backup the folder it's stored in. With an hourly schedule, the backup storage location will make eight copies in a standard work day. That's 8GB of backup storage used in a day, 40GB in a work week and 160GB in a month, probably more than that if the computer is on more than 8 hours a day.

On top of all that, while Volume Shadow Services should work on a PST file open in Outlook, in practice it's a problem because of the file size and the regular changes made to it.

### BACKUP OF CLOUD STORAGE

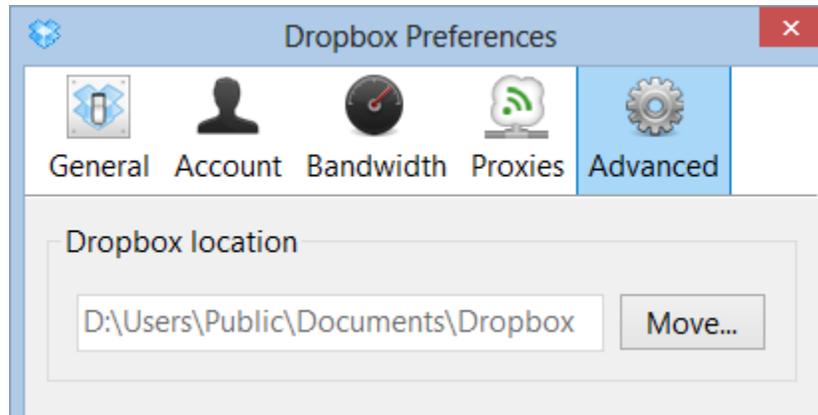
While you can't add network shares to a backup you can add cloud storage locations in some circumstances.

OneDrive, Google Drive and Dropbox, (to name just three) all have software utilities that will mirror the cloud storage to your computer. Those local computer folders can be added to a library so they'll be monitored and backed up by File History.

## Windows 10 for Microsoft Office users

### Backup - File History

Make sure the root folder for each cloud service (check the software for the location) is part of a Windows library; File History will do the rest. For example, here's the Preferences dialog in the Dropbox utility.



Since this location is in `\Public\Documents` and part of the Documents library it will be included in any File History backup.

### OPEN FILES

One important part of modern backups is the ability to make a copy of an open document.

In recent versions of Windows, Microsoft includes the Volume Shadow Service (VSS). This allows Windows to take a snapshot of a document open in Word, Excel and PowerPoint etc. so the file could be backed up. Before VSS, open files were 'locked' and could not be copied which was a problem for reliable backups on documents that are open for long periods.

From our tests File History appears to backup open Office documents using VSS; which is exactly what we expected.

It's still a good idea to make sure large files are saved on a regular basis.

### SECURITY

What security? File History has none.

Unlike past Windows backup features, there's no password or encryption option available. Any files saved by File History are exposed and open to anyone with access to that location.

You might want to consider some protection for the destination drive such as BitLocker.

# Windows 10 for Microsoft Office users

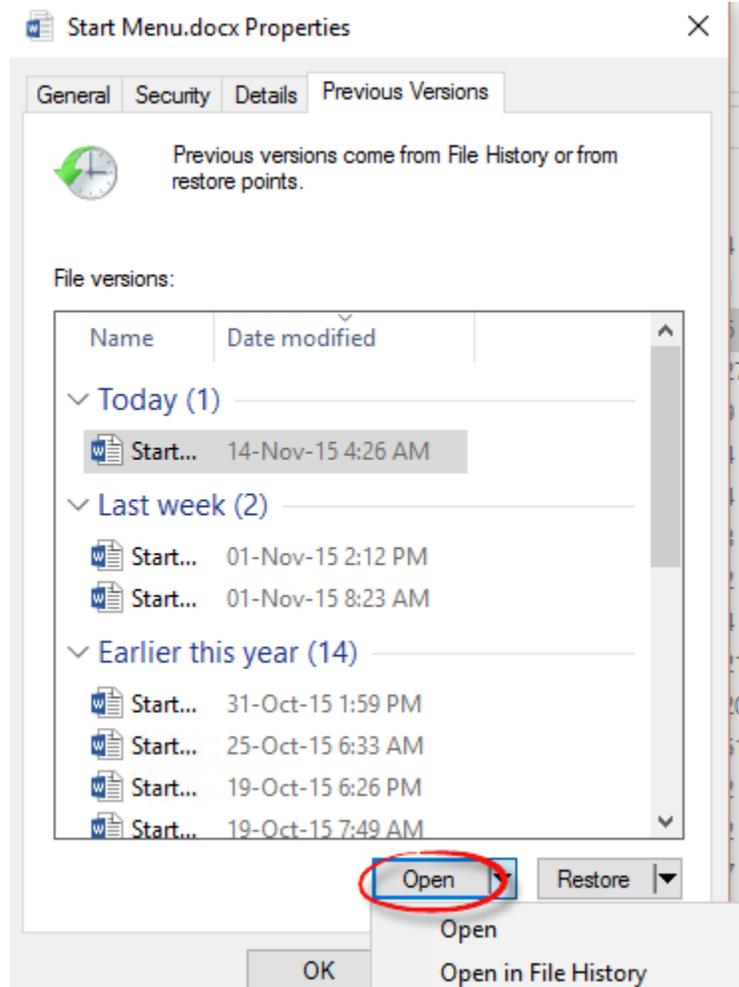
## Backup - File History

### RESTORING

File History, as the name suggests, lets you recover not just the most recent backup copy but also previous versions of the file. You can choose a date and recover the file/s that was current at that date.

There are a few methods available to restore a file from File History storage.

The easiest is integrated into File Explorer. Right-click on a file and choose Properties | Previous Versions. Choose the past version you want.



Your options are:

- **Open** – opens the file with the default application.
- **Open in File History** – starts the main File History recovery view (see below)
- **Restore** – puts the past version back in the original folder. If the file is already in that folder you'll get the usual file copy warning about a

## Windows 10 for Microsoft Office users

### Backup - File History

duplicate file – choose to overwrite, save with a different name or compare info.

✓ Replace the file in the destination

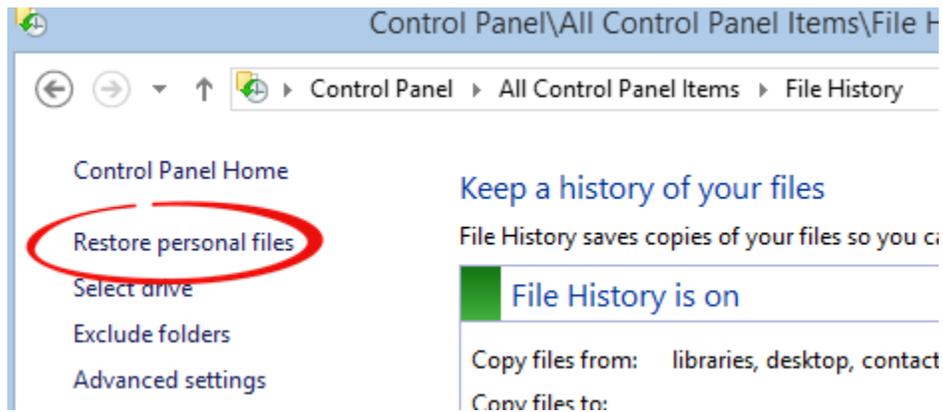
↶ Skip this file

📄 Compare info for both files

- **Restore To ...** let you choose another folder.

The alternative method is also the only option for files that aren't present in Explorer any more (ie they've been deleted or moved).

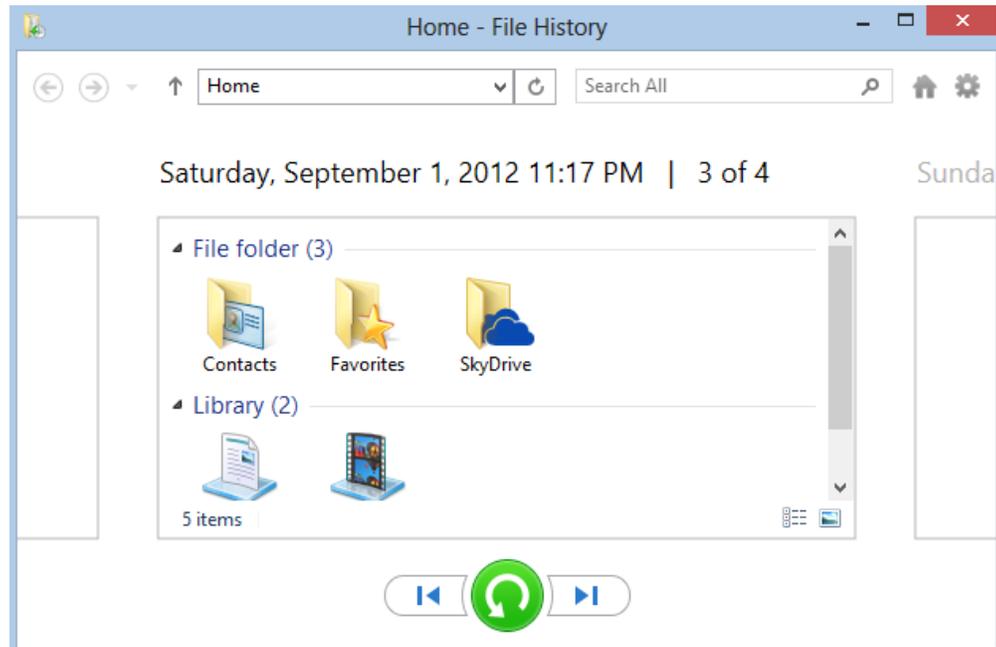
Go to Control Panel | File History and click 'Restore personal files'.



# Windows 10 for Microsoft Office users

## Backup - File History

The recovery window opens up and has dated panes for each set of files that are stored.



At the bottom are left / right controls which move between different dated views from File History.

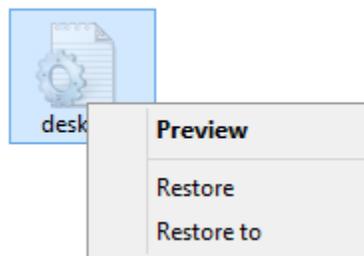
The big green button is the restore button. Pressing that button will start restoring files to your computer with no further confirmation.

At its simplest, you can choose a date and hit restore and all the backed up files will be restored.

### SELECTED FILE

More likely, you'll want to select individual files or folders.

You can do that from the restore files dialog mentioned above. Click on a folder until you find the file you want. Right-click on the file.



**Preview** – will display the file contents

**Restore** – will copy the file back to its original location.

# Windows 10 for Microsoft Office users

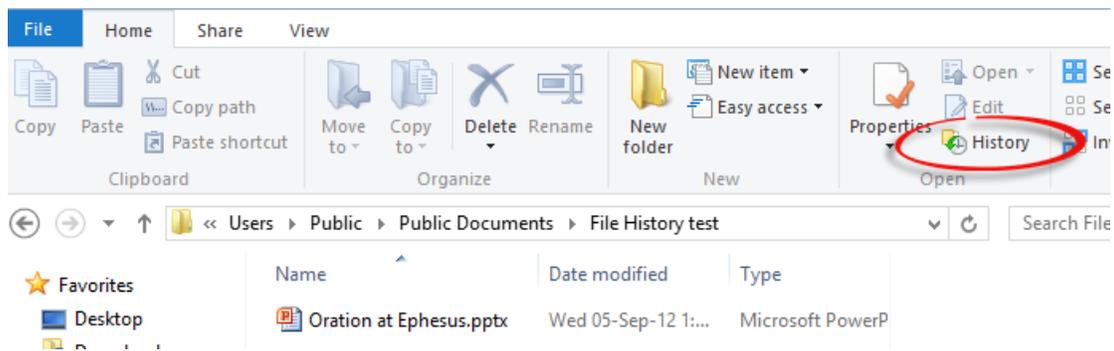
## Backup - File History

**Restore to** – lets you choose an alternative location for the restored file.

### EXPLORER

Another way into the Restore dialog is to use Explorer.

Go to the folder you're interested in, on the Home tab is a 'History' button that will also take you to versions of files in that folder.



### UNOFFICIAL METHOD

There's another recovery method available that Microsoft doesn't talk about; simply copying files from the File History storage location.

File History doesn't use any encryption or compression on back up files. It simply copies files to the save location.

You can go to that location in Explorer and grab files for yourself. It can be easier to see the file versions available in this unofficial view than flicking between dated views seen above.

---

*Don't manually delete or change files in File History storage – that will confuse the software's tracking of files and versions. COPY any file you want and look at the copy.*

---

The storage location is set by you at Control Panel | File History. Go to that location in Explorer.

File History creates its own folder structure starting from the location you chose.

- FileHistory (if you chose a drive only) or the folder name you nominated as the backup location
  - User Name
    - Computer Name

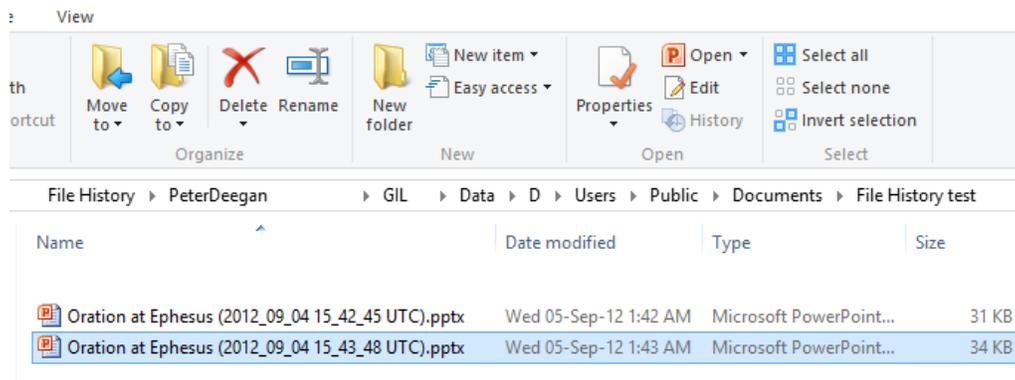
## Windows 10 for Microsoft Office users

### Backup - File History

- Configuration (*ignore this folder – don't change it!*)
- Data
  - Each drive e.g. C D etc.
    - Folders that are backed up

In essence, go down the folder tree until you reach the `Data` folder, choose the drive letter (as a folder name) then you'll see a familiar folder structure mirroring that on the source drives.

Go to the folder you're interested in:



As you can there are two versions of the PowerPoint presentation that was originally called 'Oration at Ephesus.pptx' .

File History adds a date/time stamp to the file name in brackets. The time is saved as UTC (Coordinated Universal Time aka GMT) to allow tracking of versions even if you change the current time zone on the computer. During a normal Restore this is hidden from view.

You can copy the files to another location then open them up, just like any other file.

We like this alternative because you can see the alternate versions in a single view.

### LIMITATIONS

File History is intended as a backup of personal files only, not the entire system. Windows has a separate Backup utility to backup an entire computer.

Backup files are stored as simply copies with no encryption or compression. In many ways that's a good thing because it makes restoration easy. However, it also means the File History storage takes up at least the same amount of disk space as the source files plus the space needed for file

## Windows 10 for Microsoft Office users

### Backup - System Image Backup

versions. It also means that anyone who has access to the File History folder can see almost all the files on your computer. Traditional backups were both compressed and optionally encrypted.

This is no clear indication or list of exactly what folders are backed up.

Nor is there a simple way to estimate backup size.

File History is a single process only. You can't have multiple File History configurations backing up different folders on different schedules to separate locations.

Libraries are backed up by File History – that's great. However, all network shares folders that are included in a library are NOT backed up. There's no explicit warning so it's easy to fall into the trap of thinking that you have versions saved of files that aren't really protected.

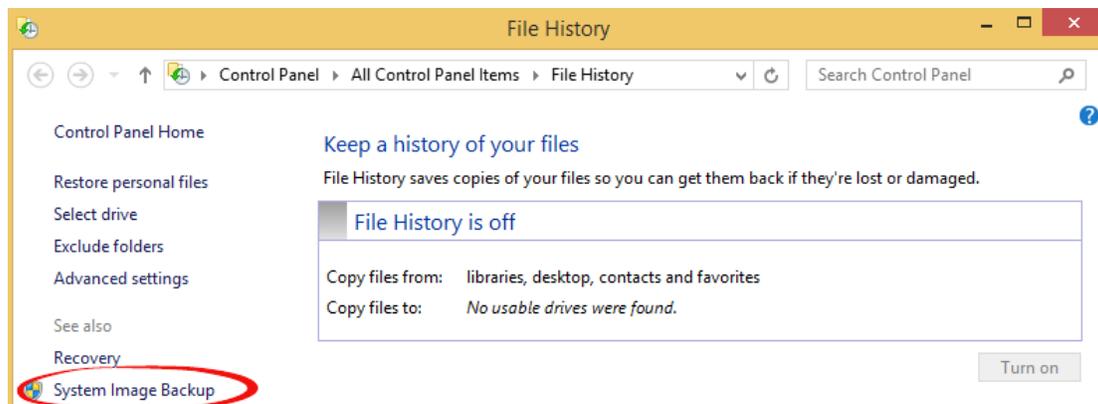
There is a 'Run Now' button on the File History settings window. Unfortunately, there's no way (that we can find) to have a separate 'Run Now' button or shortcut. This would have been useful to quickly update File History when you want, for example before disconnecting a portable computer.

Similarly, there is no File History taskbar icon. Sure, the feature is designed to be a background process but some of us would like to quickly see that it's working and up-to-date.

## SYSTEM IMAGE BACKUP

It's been wrongly said that Windows doesn't have a full backup feature. There is a full system image backup feature, it's just hiding.

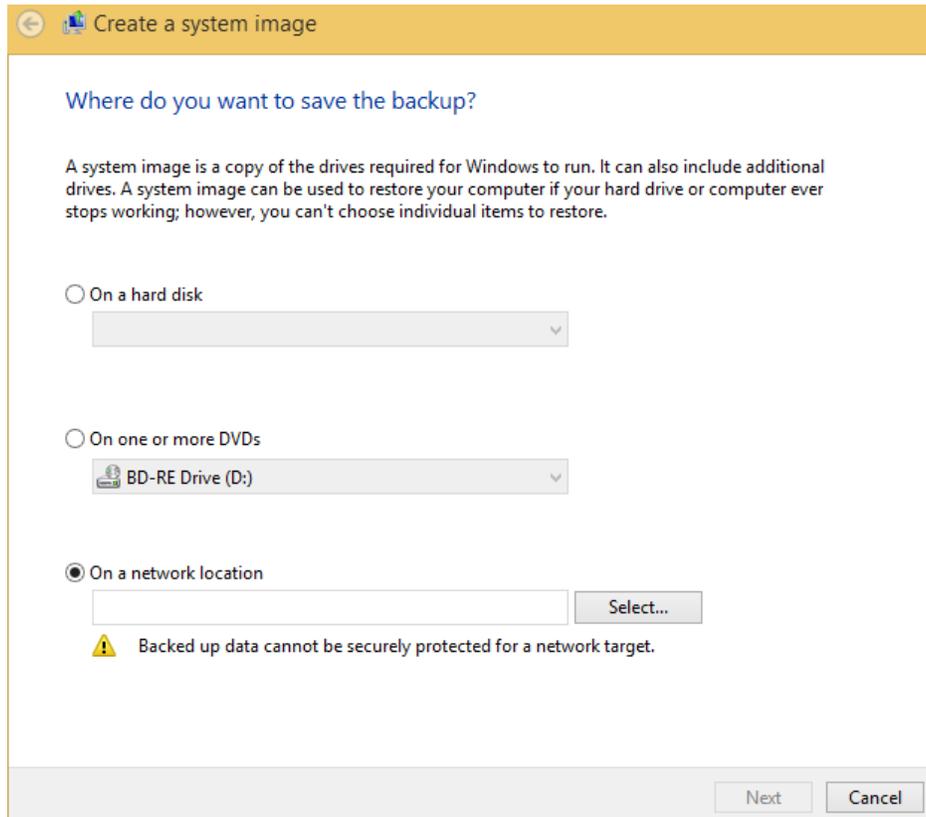
Go to File History and look down in the bottom left corner.



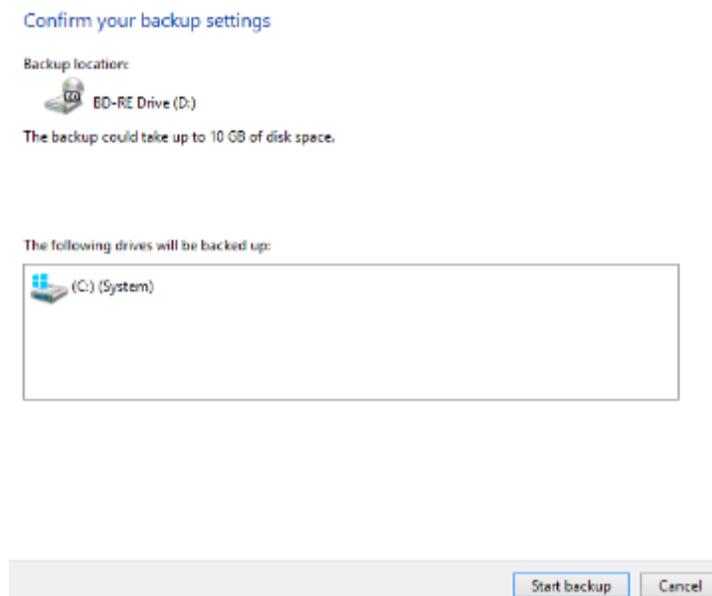
# Windows 10 for Microsoft Office users

## Backup - System Image Backup

Click on that link to open a familiar system image dialog.



As you can see, the image file can be saved to a hard drive, writeable DVD or a network location. Select a target and choose Next,



This feature will backup an entire drive so you can restore it completely if things go badly.

## SCREEN SHOTS MADE EASY

Taking an image of what's on your computer screen is a very useful skill for any computer user; novice or experienced. It's a lot easier than it was even a few years ago.

Here's a guide to some of the many options available. Not just Windows but also Mac, Apple and Android devices (we just can't help ourselves).

### WHY?

The main use for screen shots is for computer support or teaching about software. As you might expect, Office-Watch.com uses screen shots every day for books and articles.

Most people use screen shots when they're asking for computer help. Instead of trying to describe what is happening, an image of the problem or error message is usually very helpful. It's truly a case where a picture is worth a thousand words ... and a great time saver.

Keep in mind that the person reading your message isn't looking over your shoulder. What you're seeing might be unusual or even unique so talking vaguely about 'some error message' or 'the page looks funny' often doesn't help much.

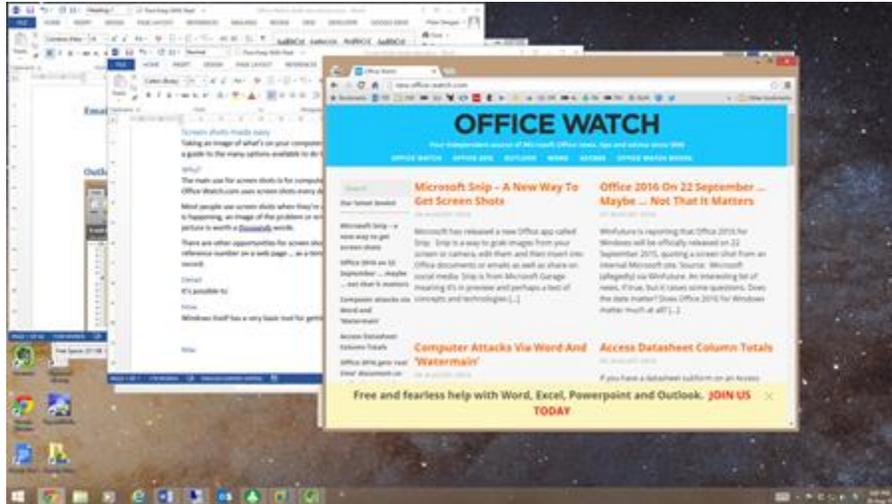
There are other opportunities for screen shots. Taking a quick screen image of an order or other reference number on a web page ... as a temporary record until an email arrives as a more permanent record.

# Windows 10 for Microsoft Office users

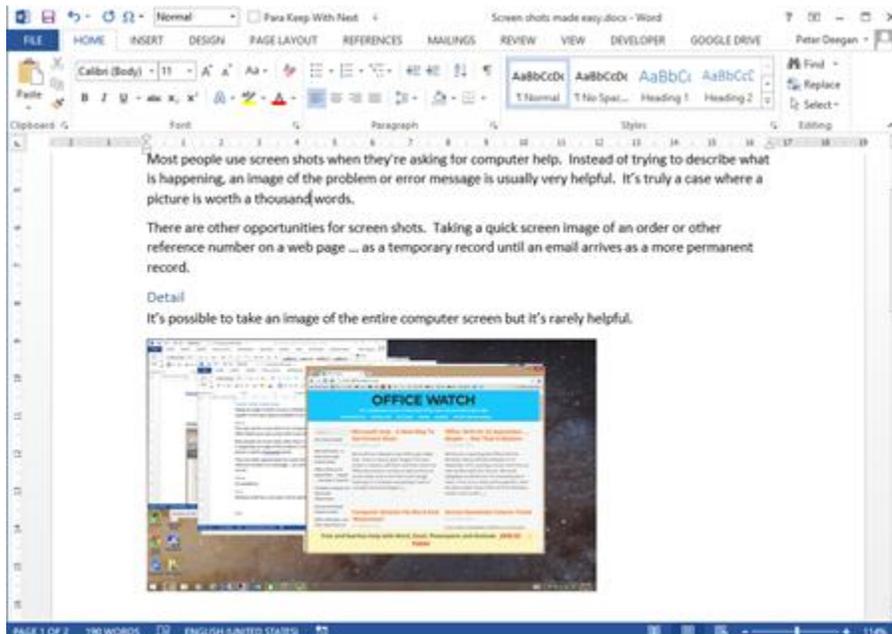
Screen shots made easy - Detail

## DETAIL

It's possible to take an image of the entire computer screen but it's rarely helpful.



Better to zoom in on a single program:



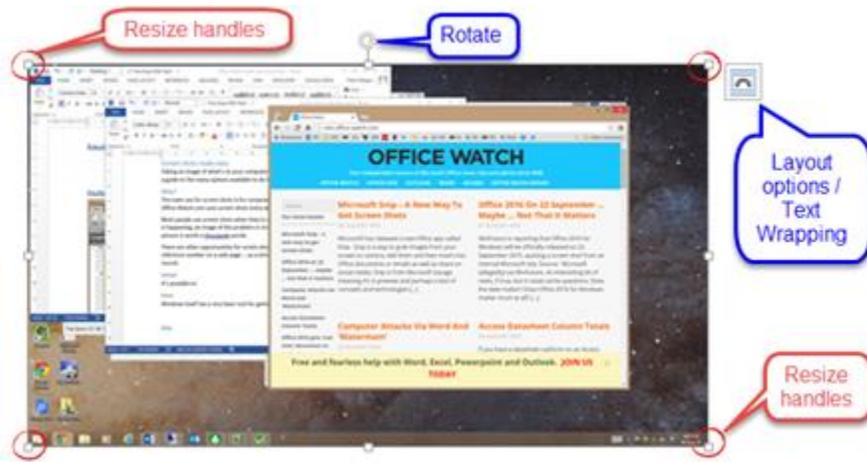
## Windows 10 for Microsoft Office users

Screen shots made easy - Detail

Or zoom in to a specific part of the screen ... maybe add some text to the image ... like a plea for help ...



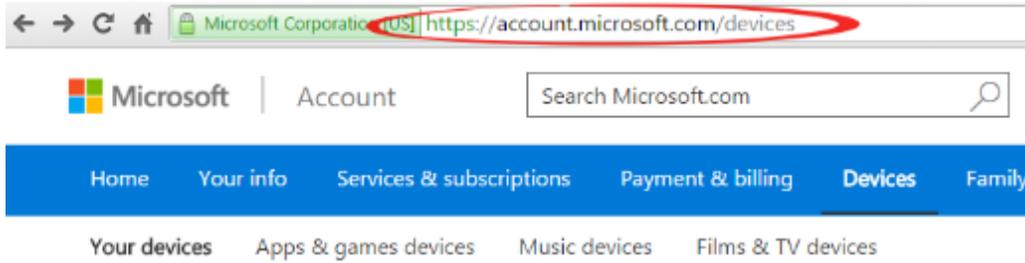
Or go all-out and annotate it with some text and arrows.



Web pages can and do look different. Changes in browser, computer and other settings can make a difference to what you see. If you're having trouble with a web site, include the address bar as well. That will confirm the exact web page / address as well as a view of the web page. Make sure to include the browser and version!

# Windows 10 for Microsoft Office users

Screen shots made easy - Clipboard or File



## Your devices

Devices that you've signed in to with your Microsoft account or registered for warranty.

## PRIVACY

Annotation and editing of a screen shot is important. Not just for highlighting parts of the image but also hiding parts like names, email, passwords or other private data. This example shows three ways to hide sensitive info; Blur (email), Draw a line (top passwords), Copy a blank color over the items (rest of the password column). Use whichever suits you and is available in the image editor you use.

	A	B	C	
1	<b>Name</b>	<b>Email</b>	<b>Password</b>	
2	Rumpole	[blurred]	[blacked out]	
3	Ballard	[blurred]	[blacked out]	
4	Erskine-Brown, P	[blurred]	[blacked out]	
5	Erskine-Brown, C	[blurred]	[blacked out]	1
6	Probert, E	[blurred]	[blacked out]	
7				

## CLIPBOARD OR FILE

After taking a screenshot, the image will be placed somewhere for you to work on.

Most commonly it's the system **clipboard**. From there you can paste the image into any picture editor or document you like. It's the fastest way to get from screen image into a document or email.

# Windows 10 for Microsoft Office users

Screen shots made easy - Windows

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*Remember that Office has some image editing tools, like cropping, that can be very useful.*

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The other main alternative is saving direct to a **file**. The screen image will be saved to a predetermined folder. This option is great if you want to take a series of quick images to edit later.

On portable devices, screen shots are usually added to the list of recently taken images (e.g. Camera Roll). Cloud storage apps with automatic image upload (Apple, OneDrive, Dropbox etc.) will automatically copy the screen shots to online storage, just like photos taken with the devices camera.

Some third-party products have their own image editors giving you the choice to have each new screen image added directly into the picture editor.

## WINDOWS

Windows itself has a very basic tool for getting a copy of the entire screen. A keyboard shortcut will take an image of the whole screen and put the image into the Windows clipboard. From the clipboard, you can paste the image into an Office document, Outlook email or image editor.

More recent Windows versions can take an image and save it directly to the Pictures/Screenshots folder.

### WINDOWS 10 8 AND 8.1

Printscreen button - Full screen to clipboard

Win + PrintScreen - Full screen to file.

Alt + PrintScreen – select a program window then it's saved to clipboard.

### WINDOWS 7

Printscreen button - Full screen to clipboard

Alt + PrintScreen button – active window to clipboard

### WINDOWS VISTA AND XP

Printscreen button - Full screen to clipboard

Alt + PrintScreen button – active window to clipboard

# Windows 10 for Microsoft Office users

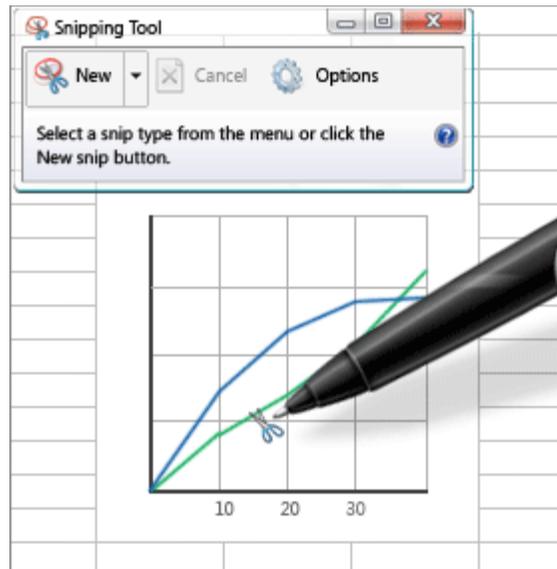
Screen shots made easy - Windows

## OTHER TOOLS

If that isn't enough, there are many screen shot tools available. Many are free with some paid software with all manner of extra features. For occasional use, one of the free tools is usually enough.

## SNIPPING TOOL

Windows Vista and later comes with a Snipping Tool (use Search to find it among the programs). It has more selection options (freeform, window, rectangle, full screen) plus some annotation features.



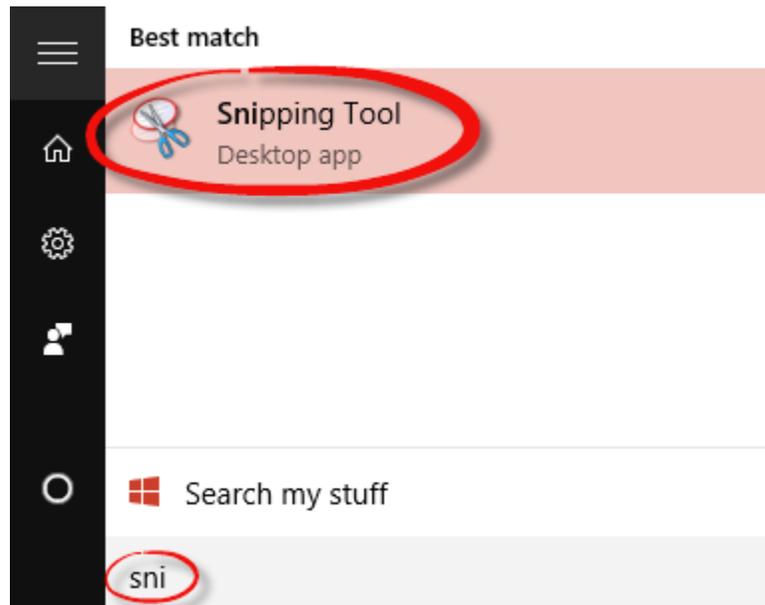
*Source: Microsoft*

The Windows 10 Snipping Tool adds a 'Delay' option. This adds a delay between pressing the button and taking the shot. This lets you get images of pull-down menus and other interactive elements.

## Windows 10 for Microsoft Office users

Screen shots made easy - Windows

Use the Windows Search feature to quickly find the Snipping Tool.



### MICROSOFT OFFICE

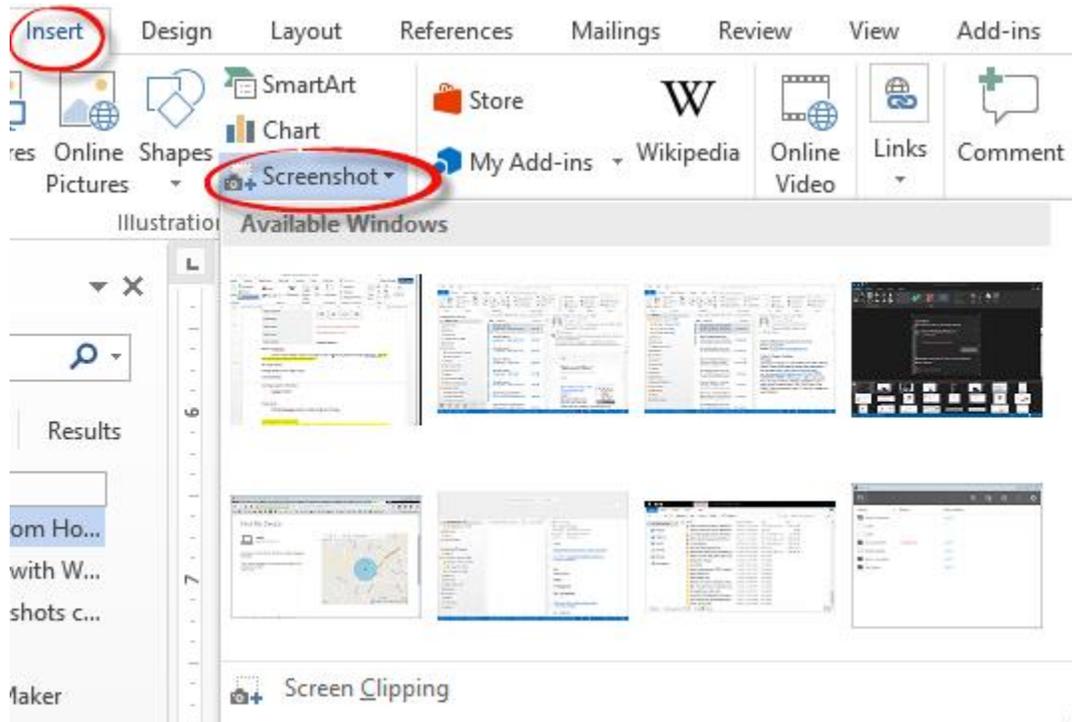
Microsoft Office 2010 and later have a screen shot tool on the Insert menu of Word, Excel, PowerPoint and the email editor in Outlook.

Word and PowerPoint for Windows (v 2010, 2013 and 2016) have a simple way to paste an image from any open program window into a document or email.

## Windows 10 for Microsoft Office users

Screen shots made easy - Windows

On the Insert tab of the programs there's a Screenshot option, click on that to display a gallery of the open program windows.



If none of the gallery items suits you click on Screen Clipping at the bottom. The Office app window minimizes and you can choose a screen area.

Whichever way you choose; the screen shot is pasted into your document as an image. Then you can move, copy, caption or edit the image just like any other picture in your document.

Office integrates taking 'screen shots' into

- Word
- Excel
- PowerPoint
- Outlook in email editor

### FREE UTILITIES

There are many, many, free screen shot tools. Too many to list here.

One of the well regarded ones is [Greenshot](#). A free, open-source, tool with annotation and obfuscation tools.

[WinSnap](#) is another to consider.

# Windows 10 for Microsoft Office users

Screen shots made easy - Windows

## MICROSOFT SNIP

This newly released [screen shot tool](#) from Microsoft. It doesn't have the all the features of the Snipping Tool, at least not yet.

Snip is a way to grab images from your screen or camera, edit them and then insert into Office documents or emails as well as share on social media.

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*Snip is from Microsoft Garage meaning it's in preview and perhaps a test of concepts and technologies than a fully formed product.*

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### WHAT'S DIFFERENT ABOUT SNIP?

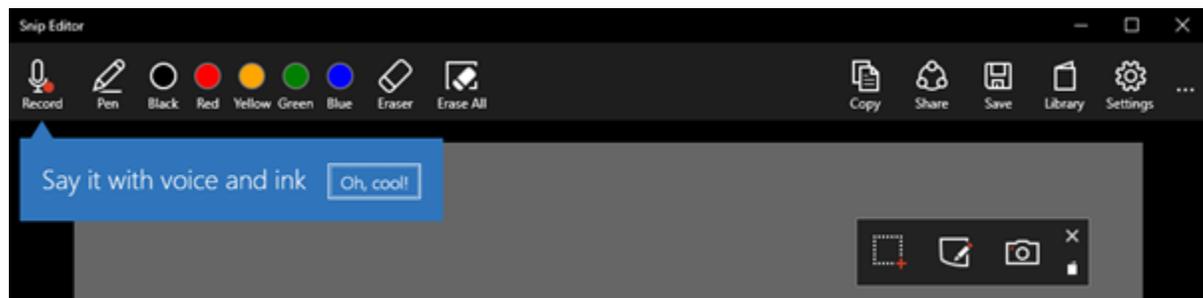
Snip can take images of any part of the screen. Press the snipping button and then draw a rectangle around the part of the screen you want.

It's also possible to an image from an attached camera.

Here's the main Snip toolbar which can float on your screen. On the left is the snipping tool, next is the 'Whiteboard' (really the Snip image editor with a blank white opening image) and Camera. The small button on bottom right is the library of past Snip images and videos.



Once you've taken an image you can draw on the image with some very simple tools. There are four widths of pen line (hold down the Pen button to change) and five colors.



Only free form lines are possible which means raggedy and messy annotations unless you have a remarkably steady hand or ideal hardware. There's no way to easily draw a straight line, not even the 'Hold Shift key while drawing shortcut that's been in Windows Paint for as long as anyone can remember.

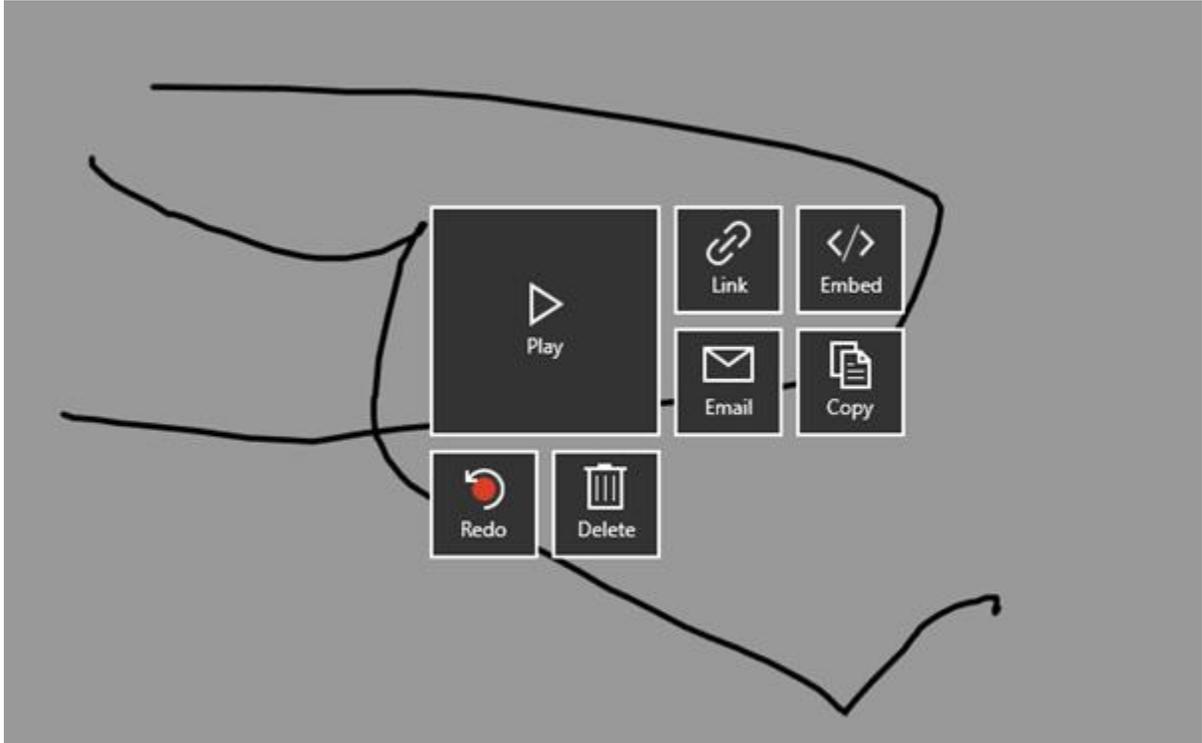
## Windows 10 for Microsoft Office users

Screen shots made easy - Windows

Unfortunately, Snip doesn't (yet) have a selection of common annotation tools like arrows, circles and callouts.

### VIDEO

One interesting Snip trick – make a video as you annotate an image. Click on Record then speak and draw on the image.



You can save the video to the [mix.office.com](https://mix.office.com) web site (not your own OneDrive account), email or save to your local computer. The Copy option makes it easy to Paste into PowerPoint, Word or Excel. The video is saved in the common MPEG4 .MP4 format.

### SNAGIT

Office Watch has used [Snagit](#) for many years. It's the product we've used to produce almost all the images used in our books and articles. Snagit is a full featured program with all the 'bells and whistles' for editing and sharing. It can record video from the screen. There's a free trial then US\$49.95. Both Windows and Mac versions.

### RECORDING VIDEO

Some of the advanced tools, like [Snagit](#) can record video off the screen.

## Windows 10 for Microsoft Office users

Screen shots made easy - Apple devices

### IMAGES FROM VIDEO

A quick mention of a favorite utility called [ImageGrab](#).

It's possible to get a still image from a paused video but usually you're limited to the size displayed on the screen. In effect the utility is taking the paused video on the screen to make the still image. That's a problem these days because many cameras can take high resolution video that's larger than a computer screen.

[ImageGrab](#) will take stills from the video at the full resolution of the source video, regardless of the screen size.

We often use it to get the best still images from travel videos.

## MAC

Mac OS X comes with a nice range of screen shot shortcuts.

In short:

- Command + Shift + <number 3 or 4> will save an image to the desktop
- Command + Control + Shift + <number 3 or 4> will save to the clipboard

The full list:

- Command+ Shift + 3 - full screen, saves to desktop
- Command-Shift-4 - select an area, saves to desktop
- Command-Shift-4, then space - select a window, saves to desktop
- Command-Control-Shift-3 - full screen, copies to clipboard
- Command-Control-Shift-4 - select an area, copies to clipboard
- Command-Control-Shift-4, then space - select a window, copies to clipboard

In addition, you can hold down these keys to control the selection area (Leopard or later).

- Space - Locks the selected region and lets you move it with the mouse.
- Shift - Resizes one edge of the selected region.
- Option - Resizes the selected region using the center as an anchor point.

That good range of in-built options is probably enough for most people. If not, search for a free utility like [Captur](#).

## APPLE DEVICES

There are screenshot shortcuts built into iPhones and iPads.

## Windows 10 for Microsoft Office users

Screen shots made easy - Android

Hold the Sleep/Wake button (on top or side) then the press the Home button.  
The image is saved to the Camera Roll.

### ANDROID

It's more complicated on Android devices. Early Android versions didn't have any screenshot shortcut and the developer tools made it difficult for third-party apps to fill the gap. Google made a small and largely useless effort to fix this.

In theory, Android 4 (IceCream Sandwich) and above have an in-built shortcut:

Press the **Power** and **Volume Down** buttons at the same time.

or

Press the **Power** and **Home** buttons at the same time.

The problem is the timing – you have to press both buttons at the same time (not hold down one then press the other). This takes some practice and too often it doesn't work at all.

Each brand and even model of Android phone/tablet has its own screenshot options. A common option on Samsung devices is the palm swipe (check Settings | Motions and Gestures).

The best approach is to search the web for screenshot help specific to your device. Search for '<device name> screen shot' e.g. 'Samsung Galaxy 5 screen shot'.

Screen images are usually saved to the camera roll of recently taken images.

There are screen shot apps, but many require 'rooting' your devices which is only for advanced users.

Another option is a mirroring app that displays the device screen on a Windows or Mac computer. You can then take screenshots using the Windows/Mac tools. Again, there are many apps and options available, depending on the device and Android version available. We've had good experiences with [Reflector 2](#).

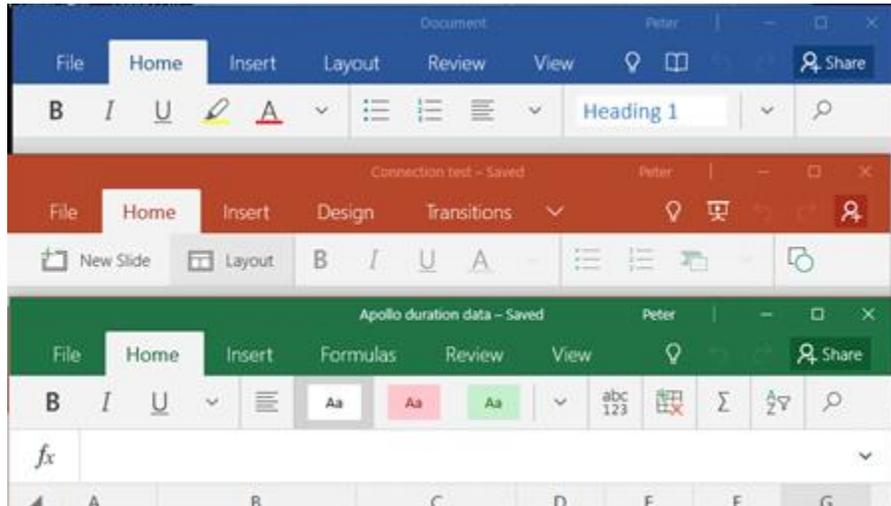
We like Android devices a lot, but Google should lift their game when it comes to screen shots. At the very least a better button combination, please?

## Windows 10 for Microsoft Office users

Office Mobile Apps - Main Features

# OFFICE MOBILE APPS

Windows 10 comes with Microsoft Office, not the full Office 2016/2013/2010 programs but the 'Mobile' apps.



Word Mobile, Excel Mobile, PowerPoint Mobile and OneNote Mobile can be used, free, on any Windows 10 device – computer, tablet or phone. Office 365 subscribers get some extra features if they login with their Office 365 account.

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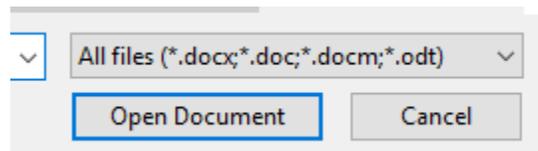
*This chapter focuses on the Office Mobile apps, however it also serves as a general guide to installing, managing and uninstalling Windows 10 apps.*

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## MAIN FEATURES

The Office Mobile apps are slimmed down versions of the full Office programs but properly designed for touch screen and small screen use.

Office Mobile apps open both new and old Microsoft Office document formats. OpenDocument files can be opened and converted. Here's the File | Open dialog for the Word Mobile app.



Documents saved on OneDrive or your local computer are supported. Other cloud storage options may be added by the time you read this. Of course, you

## Windows 10 for Microsoft Office users

### Office Mobile Apps - Why bother?

can open documents from other cloud stores if they have been synced to a local folder.

But the Office Mobile apps can only open one document at a time.

Office Mobile apps support 'real time' document collaboration if the document is saved on a compatible cloud service like OneDrive or SharePoint.

While the Office Mobile apps are 'cloud-centric' they will work offline. Some features require an Internet connection, just as the related features in Office for Windows do.

Like all the Windows 10 apps they are 'universal' according to Microsoft's unique definition of the term. The same app installed on different Windows 10 devices will adjust to the screen size. That's important because it reduces the risk of incompatibilities or inconsistencies between versions of Office.

## WHY BOTHER?

In normal circumstances you'd not bother with the Office Mobile apps if you have the much more powerful Office for Windows programs installed on the same computer. But they are worth installing anyway. The Office Mobile apps take up about 120MB of disk space each, a trivial amount these days.

Some uses for the Office Mobile apps:

- A reserve in case the main programs misbehave.
- As a simpler version of Office for novices or others unfamiliar or intimidated by Office for Windows.
- Use it instead of Office for Windows if you're running short of allowable installs under your Office 365 subscription. The much publicized limit of five installs (Home) or two installs (Personal) only applies to Office for Windows or Office for Mac – not the Mobile apps, which don't require an Office 365 subscription for most features.
- Use when the 'hybrid' laptop is being used as a tablet. While Office for Windows is supposed to have touch features, they are clumsy. Try the Mobile apps which are designed mostly for touch screen use.
- There are some rare situations when you want to open the same Word or PowerPoint document twice on the same machine. We talk about this in the [Virtual Desktops](#) chapter.
- As a general rule, an Office Mobile app will use a lot less memory than its Office for Windows counterpart. Some informal tests (opening the same document in both Office 2016 and Office Mobile) showed the Mobile app using about half the memory for the same open document. If you're

# Windows 10 for Microsoft Office users

## Office Mobile Apps - Installation

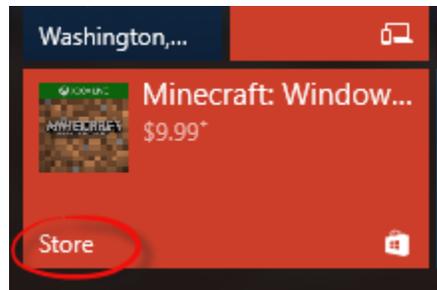
running short of memory and desperate to get something done, try the Office Mobile app as a temporary workaround.

## INSTALLATION

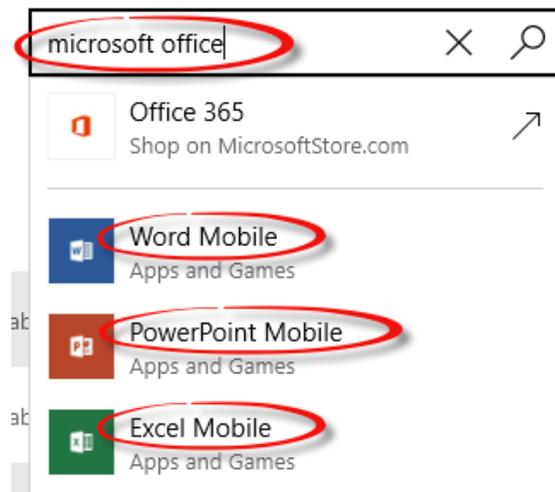
To install the Office Mobile apps, open the Windows 10 Store. It's installed by default on the Task Bar.



It's also on the Start Menu as a Live Tile which advertises apps. Look for the label 'Store' on bottom left of the tile.



In the Store, go to the Search field on top right. Search for individual apps by name or, to find all three Office apps type 'Microsoft Office'.



# Windows 10 for Microsoft Office users

## Office Mobile Apps - Installation

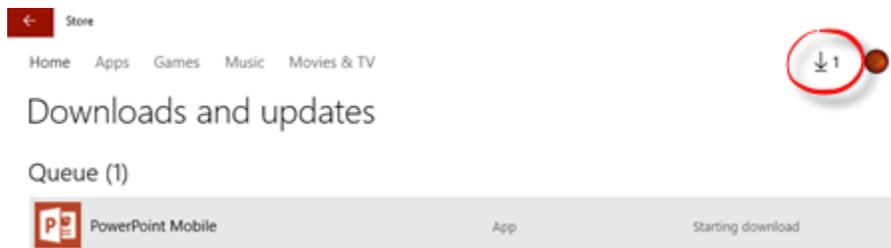
Choose one of the apps in the list then choose Install.



Installation will happen in the background so you can select more apps to install or do something else on the computer.

The 'Contains in-app purchases' note on the app info screen relates to buying an Office 365 subscription for the advanced features. Obviously, that doesn't apply if you already have a valid Office 365 account.

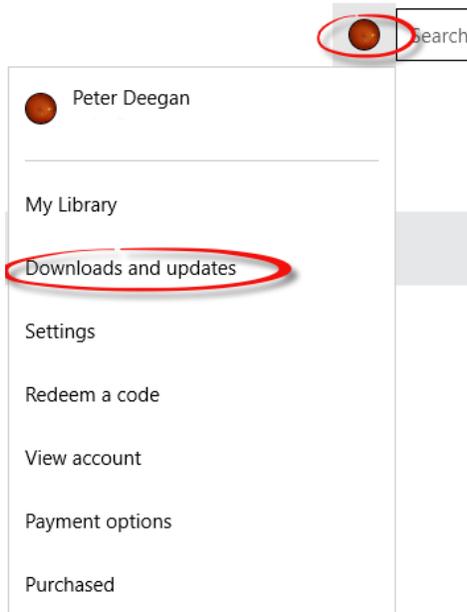
To see the install progress, click on the down arrow button to the left of your account icon.



# Windows 10 for Microsoft Office users

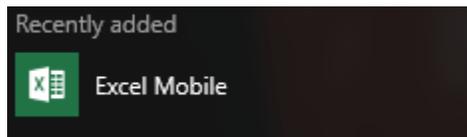
## Office Mobile Apps - Starting

Or choose your Microsoft account icon and choose 'Downloads and Updates'.



## STARTING

As you'd expect, the installed apps are added to the All Apps list on the Start Menu. The last one installed gets 'pride of place' on the left column under 'Recently added'.



Click on the app from the Start Menu to launch, just like any other program or app.

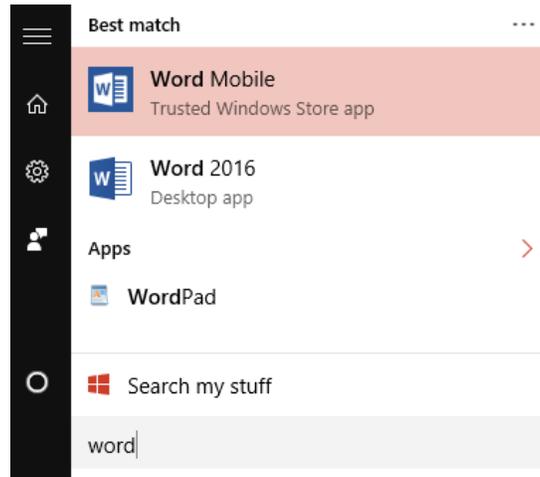
## WHICH ONE IS WHICH?

If you have both Office for Windows and Office Mobile apps, how do you choose which one to open?

# Windows 10 for Microsoft Office users

## Office Mobile Apps - Starting

On the Start Menu, search for, say, 'Word' and two options appear.



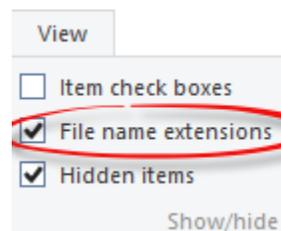
As you can see, each of the apps ends with '... Mobile' while the Office for Windows counterparts end with the version number (2016, 2013 etc).

### DEFAULT PROGRAM

With both the desktop and mobile programs installed, one of them has to be the default app for starting Office documents.

In other words, which program opens a document if you double-click on it.

Windows detects a file type from the file extensions. For example Europe.docx is a Word document, America.ppt is a PowerPoint document, Africa.xlsx is an Excel document. This is normally hidden from Windows users by the Explorer default which hides file extensions. We suggest changing that from Explorer | View tab.



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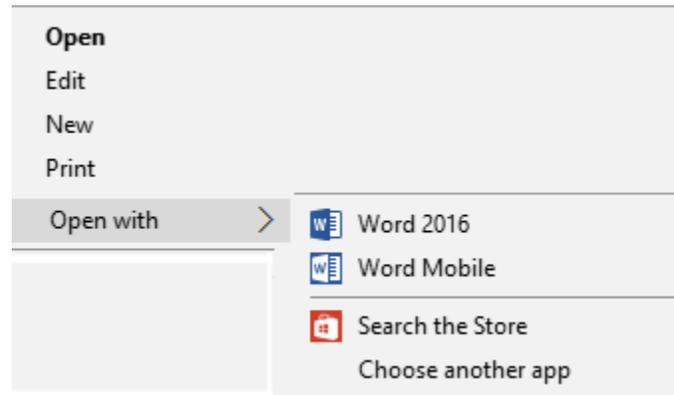
*Most likely you'll want to open the desktop Office programs not the Mobile ones. Microsoft knows that, so installing the Office Mobile apps does not change the document launch defaults, if Office for Windows is already installed.*

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## Windows 10 for Microsoft Office users

### Office Mobile Apps - Starting

Right-click on a document to see the launch options available, the default (i.e. when you double on the file) is in Bold text.



Also 'Open with ...' shows which programs are available. Use this menu to select a different program from the default.

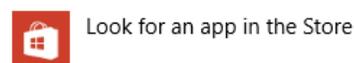
To change the default right-click one of that file type and choose 'Open with ...' then 'Choose another app'. This opens a dialog that looks quite different from earlier versions of Windows but hasn't really changed much.

How do you want to open this file?

Keep using this app



Other options



More apps ↓

Always use this app to open .xls files

OK

**Keep using this app** – shows the current default app.

**Other options** – shows other programs associated with that file type.

To change the default, select the other app or 'More apps' to see a larger list of installed programs. The more prominent 'Look for an app in the Store' is a self-serving ad by Microsoft who are trying to push their version of the Apple App Store.

## Windows 10 for Microsoft Office users

### Office Mobile Apps - Features & Differences

## FEATURES & DIFFERENCES

We're not going to waste your time or insult your intelligence by going through all the features in the Office Mobile apps. Anyone with even a passing experience with Office for Windows will have no trouble with the much more basic features in the Mobile apps.

In addition, Office Mobile apps are being updated regularly as Microsoft moves quickly to improve them.

Here we'll highlight some of the notable features, especially when they vary from the experience you'd expect in Office for Windows or Mac.

### ONE AT A TIME

The Office Mobile apps can only open one document at a time. You can't open more than one document, as you can in Office for Windows or Mac.

This is the single most important limitation of the Office Mobile apps.

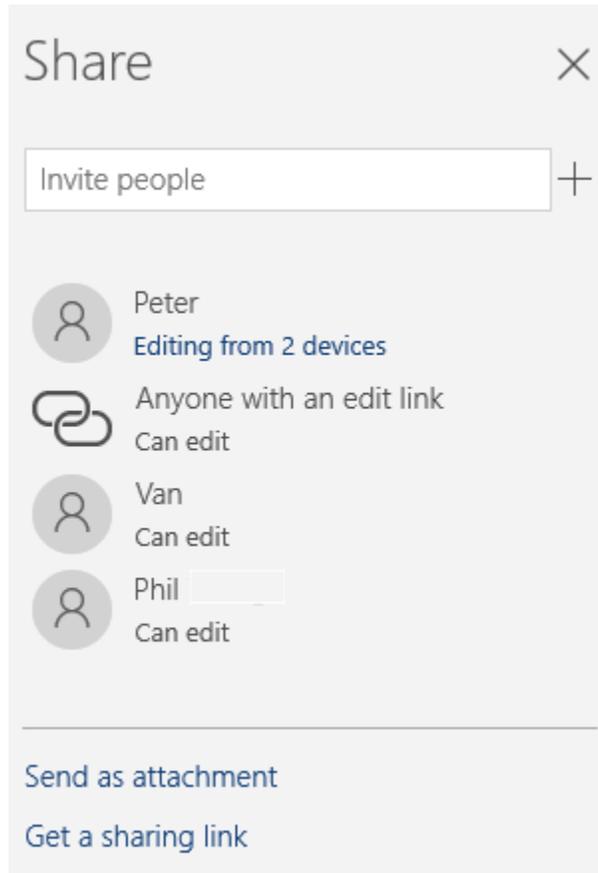
### SHARING

Office Mobile apps support the 'real time' document collaboration if the document is saved to a supported cloud service like OneDrive or SharePoint.

## Windows 10 for Microsoft Office users

### Office Mobile Apps - Features & Differences

Click on the Sharing icon at top right to see a Share pane.



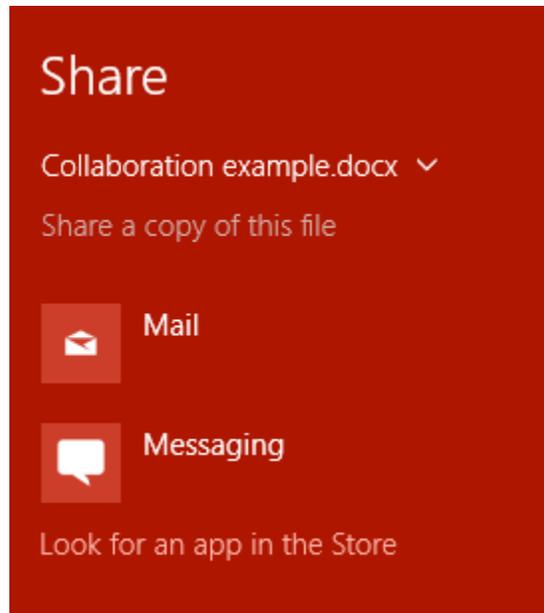
In the above case I've got the same document open on two devices at the same time – a useful trick to keep in mind. The document can also be opened by Van and Phil specifically. In addition, a link has been created so that anyone who uses the link can edit the document ... normally a not good idea. Make a read only or editing link from the 'Get a sharing link' button at the bottom.

#### SEND AS ATTACHMENT

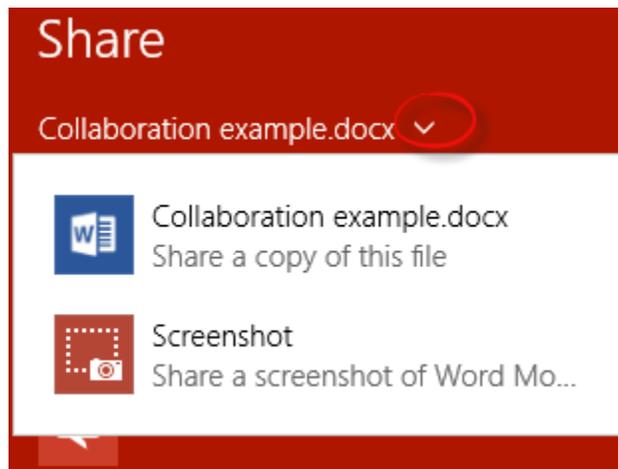
'Send as attachment' works differently to Office for Windows. It opens a Windows 10 pane with options to send via existing apps only – desktop programs like Outlook for Windows aren't available.

## Windows 10 for Microsoft Office users

### Office Mobile Apps - Features & Differences



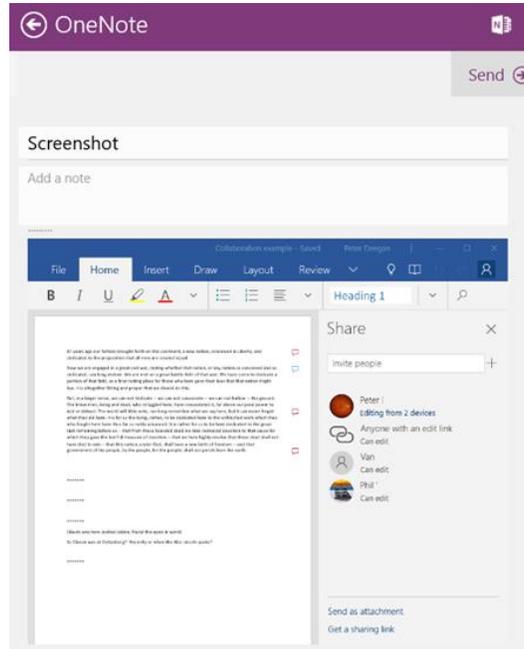
There's no 'Send as PDF' option as available in Office for Windows.  
But there is one unique option, sending a screen shot of the Mobile app.



# Windows 10 for Microsoft Office users

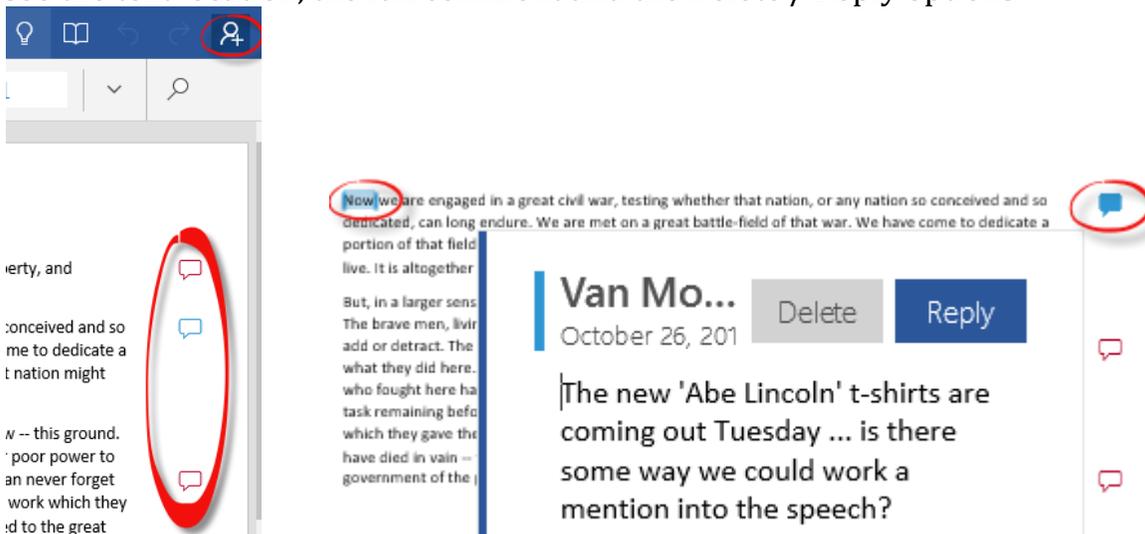
## Office Mobile Apps - Features & Differences

The screen image is of the entire app, including ribbon and panes as it appears on the screen. Screenshots can go to a wider range of apps, including OneNote and Twitter if installed.



### DOCUMENT COMMENTS

Initially, document comments appear as small callout icons. Click on one to see the text location, the full comment and the Delete / Reply options.

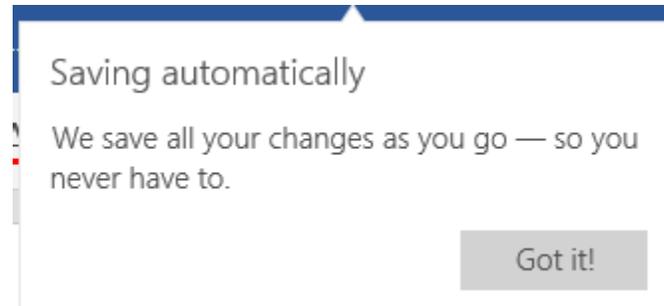


## Windows 10 for Microsoft Office users

### Office Mobile Apps - Features & Differences

#### AUTOSAVE

None of the Office Mobile apps have a Save button or obey the Ctrl + S shortcut.



You have to rely on the app to save the document automatically. That's something long time Office users may not be comfortable with. Surely adding a Ctrl + S shortcut would not be difficult?

#### UNDO / REDO

Undo and Redo have moved to the top right, between the help icon and the sharing icon.



The Ctrl + Z and Ctrl + Y keyboard shortcuts still work.

#### SHORTCUTS

All the standard keyboard shortcuts work in Office Mobile apps like copy/cut/paste and the basic text formatting for Bold, Italic and Underline.

F6 moves the tab, ribbon and document, also between worksheets in Excel.

Ctrl + F for Find, Ctrl + H for Replace.

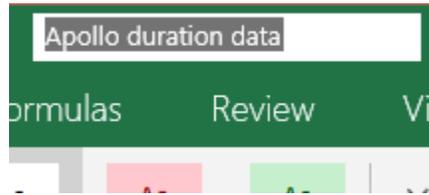
#### RENAME

It's possible to rename the document you're working on; something that Office for Windows or Mac users have been begging for.

## Windows 10 for Microsoft Office users

### Office Mobile Apps - Features & Differences

Click on the title bar where the file name is. It changes to an editable field. Type in the new name and press Enter.



This isn't available for shared documents.

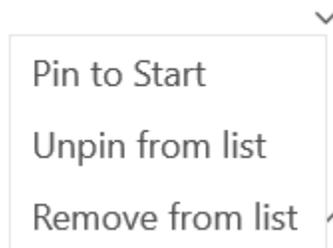
### DRAW

The Draw tab lets you annotate documents, worksheets or presentations with your pen or finger.



### PIN TO START

Recently, the Office Mobile apps got the familiar 'pinning' option for the Start Menu. It works from a pull-down menu on the left of the Start Menu.

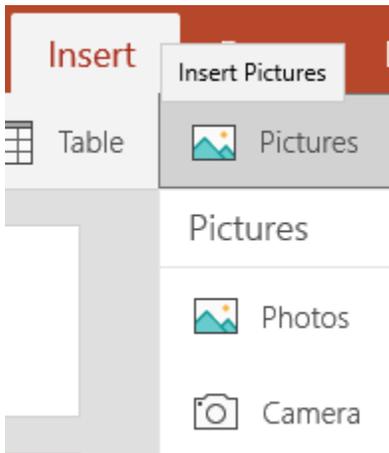


## Windows 10 for Microsoft Office users

### Office Mobile Apps - Features & Differences

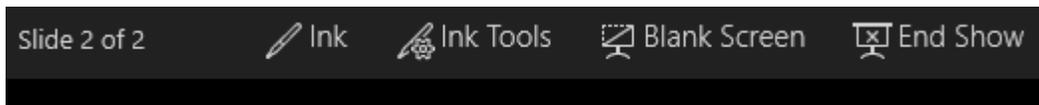
#### PICTURE FROM CAMERA

PowerPoint Mobile lets you insert a photo from a Windows 10 device camera.



#### SLIDE SHOW

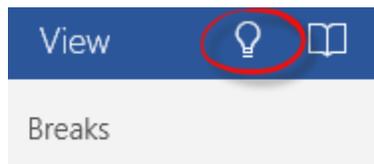
At the top of PowerPoint's slide show view is a limited set of tools.



If your computer/device has a second (extend) screen, Presenter View will show on the primary screen with the full presentation on the second screen.

#### TELL ME / HELP

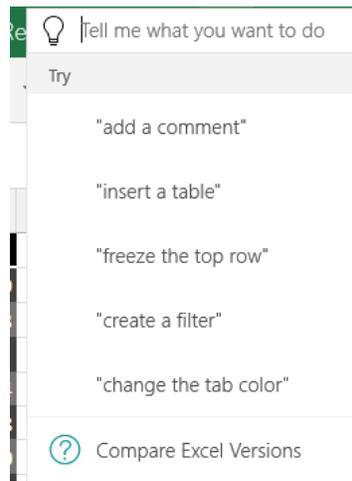
The new online help system called 'Tell me what to do' is available from the lightbulb icon at top right.



## Windows 10 for Microsoft Office users

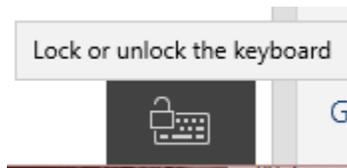
### Office Mobile Apps - Features & Differences

Click in the icon to see the field you can type your question of keywords.



### KEYBOARD ICON

You might wonder what the keyboard icon at bottom left does. Plenty of people do.



According to Microsoft it stops the on-screen keyboard appearing in Tablet mode.

We've seen it appear on computers with a touch screen and external keyboard attached (the above screen shot is from a desktop computer with touch screen). Unless you need to control the on-screen keyboard, ignore the icon and it'll go away.

### SETTINGS

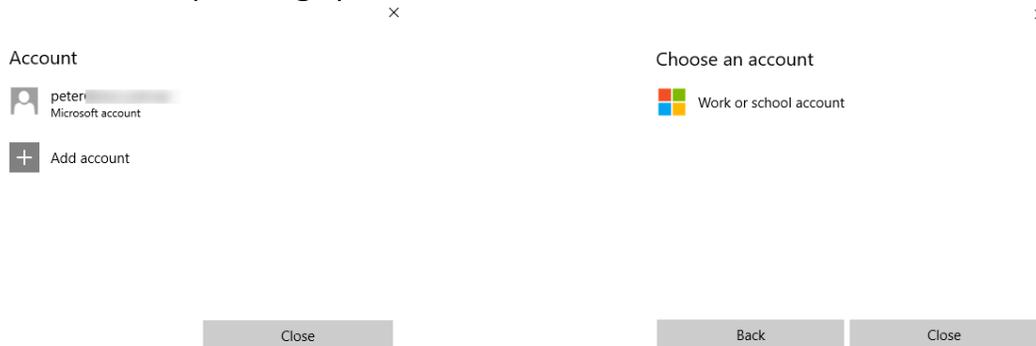
The File | Settings options are very limited indeed and often change.

# Windows 10 for Microsoft Office users

## Office Mobile Apps - Updating

### ACCOUNT

Your Windows 10 linked Microsoft account will be used by the Office Mobile apps. Go to File | Settings | Account to add an account.

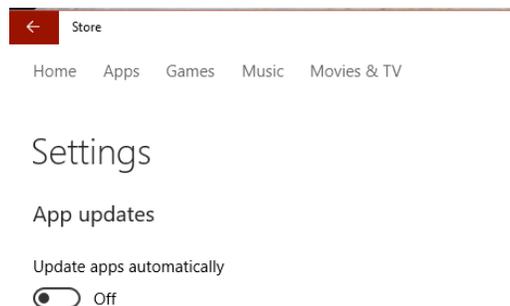


At the moment, only Microsoft accounts can be added. That may be expanded to other cloud providers in the future.

### UPDATING

The updating of Windows 10 apps is done entirely separately to Windows and Office updates.

The default is to download and install updates automatically. You can change that at Store | Settings | App updates | Update apps automatically.

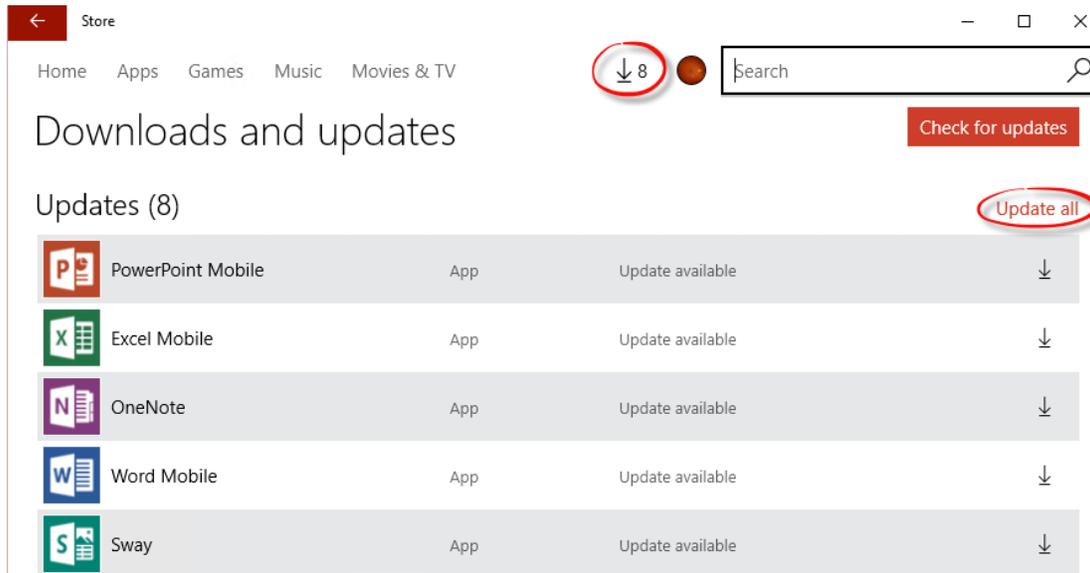


App updates should not happen over Metered Connections.

# Windows 10 for Microsoft Office users

## Office Mobile Apps - Updating

You might prefer to update apps manually. If so, there's a down arrow and number on the main Store page; click on that to see the available updates.



Click on individual apps down arrow to update or choose 'Update all'.

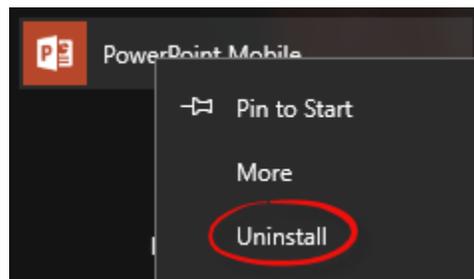
Click on the app listing to open the app info page which might have some info about recent changes. However, often the update details are as skimpy as a swimsuit in the south of France. Too often, the words 'Bug Fixes' or 'Various improvements' is what passes for documentation.

## UNINSTALL / REMOVE

Uninstalling a Windows 10 app is easy but perhaps not where you'd expect it to be.

There is no Uninstall option in the Store, not even on the My Library list of installed apps.

Instead, go to the Start Menu, find the app. Right-click or long tap on the app listing, then choose 'Uninstall'.



# FONTS

There are over 200 fonts supplied with Windows, many of those are variants (bold, italic etc) or for languages you probably don't need.

Add to that the fonts installed with Microsoft Office and you have enough for most regular needs.

Windows controls fonts, not the individual programs like Word. When a program starts it loads a list of fonts offered to it by Windows.

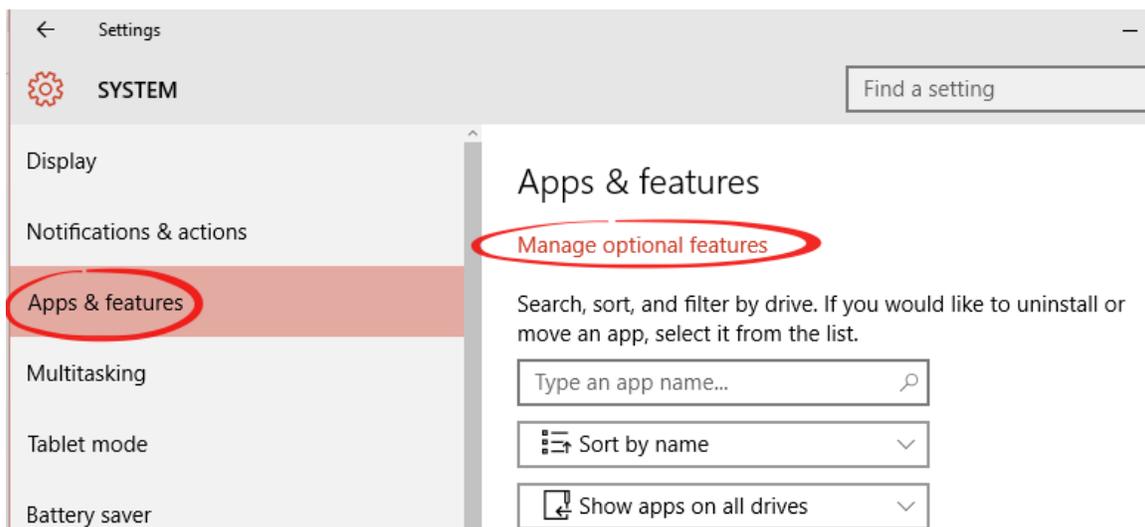
Recent versions of Office will automatically update the font list if there are changes made while the program is running. In olden times (say 10 years ago) you'd have to restart Office programs to display newly arrived fonts but these days that should not be necessary.

## REGIONAL FONT PACKS

In Windows 10, Microsoft has stopped dumping a large number of possibly irrelevant fonts onto computers. In the past, Windows would install fonts for other character sets (like Chinese, Arabic etc.) even if that wasn't the primary language.

This was annoying to some users who could not understand why their font list was cluttered up with fonts they could not use or understand <g>.

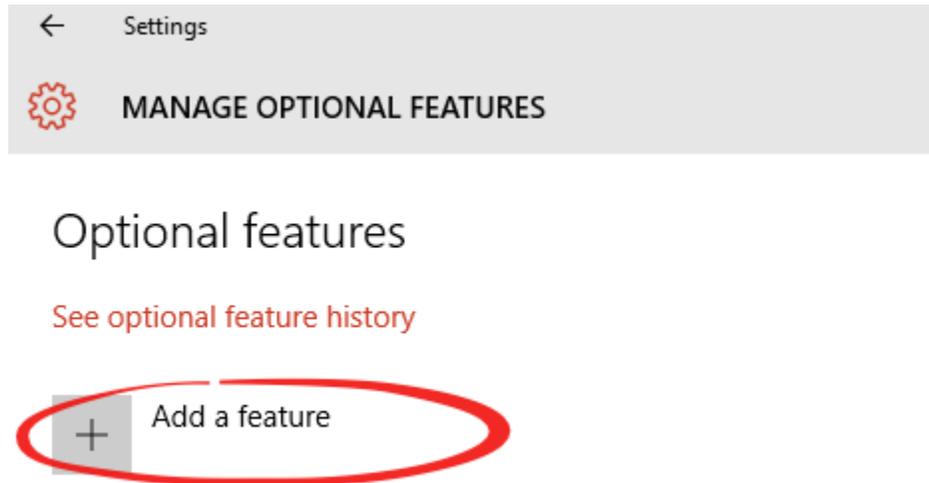
So now those fonts have been moved into free optional font packs. To get them go to Settings | System | Apps & features | Manage optional features.



## Windows 10 for Microsoft Office users

### Fonts - Regional font packs

Then 'Add a feature':



The list of additional features has changed over time so you may well see some different options.

At the time of writing the supplemental font features available are:

- Arabic
  - Aldhabi, Andalus, Arabic Typesetting, Microsoft Uighur, Sakkal Majalla, Simplified Arabic, Traditional Arabic, Urdu Typesetting.
- Bangala
- Canadian Aboriginal Syllabics
- Cherokee
- Chinese (Simplified)
  - DengXian, FangSong, KaiTi, SimHei
- Chinese (Traditional)
  - DFKai-SB, MingLiU, PMingLiU, MingLiU\_HKSCS
- Devangari (a left-to-right alphabet of India and Nepal)
- Ethiopic (also known as Abyssinian, Ethiopian or other variants)
- Gujarati (native to the Indian state of Gujarat)
- Gurmukhi (Punjabi, the 10<sup>th</sup> most widely spoken language in the world)

## Windows 10 for Microsoft Office users

### Fonts - Windows 8 new fonts

- Hebrew
  - Aharoni Bold, David, FrankRuehl, Gisha, Levenim MT, Miriam, Miriam Fixed, Narkism, Rod.
- Japanese
- Kannada (from Southern India)
- Khmer
- Korean
- Lao
- Malayalam
- Odia (eastern India)
- Sinhala
- Syriac
- Tamil
- Telugu
- Thai
  - 54 additional fonts

## WINDOWS 8 NEW FONTS

Here's the new fonts that were included in Windows 8 and continued in Windows 10. Some are now in the Regional font packs for Windows 10.

ALDHABI

## Five Wax Quacking Zephyrs



This new font has Latin characters and also Arabic characters.

## Windows 10 for Microsoft Office users

Fonts - Preview

### SEGOE UI SEMILIGHT

# Five Wax Quacking Zephyrs

If this font looks familiar it's probably because the Segoe UI font series is recommended for Windows 8 / Metro apps.

### GADUGI

Supports [Cherokee](#) and other native languages of the Americas.

### MYANMAR TEXT

For [Burmese](#) script

### NIRMALA UI

For [Bengali](#) language

## COMIC SANS

The much derided Comic Sans is still included in Windows, despite the people who would like it scoured from the face of the earth.

There have been some subtle changes between the Windows 7 font (version 5.00) and Windows 8 (version 5.11). Look at 'Wax' in italics and 'Zephyrs' in bold italic.

*Windows 8 – Comic Sans v5.11:*

# Five Wax Quacking Zephyrs

*Windows 7 – Comic Sans v5.00:*

# Five Wax Quacking Zephyrs

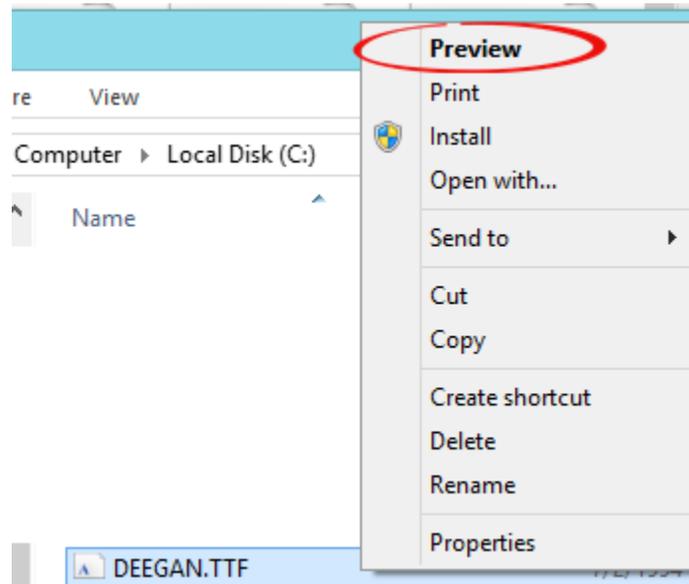
## PREVIEW

It's possible to preview a font without installing it.

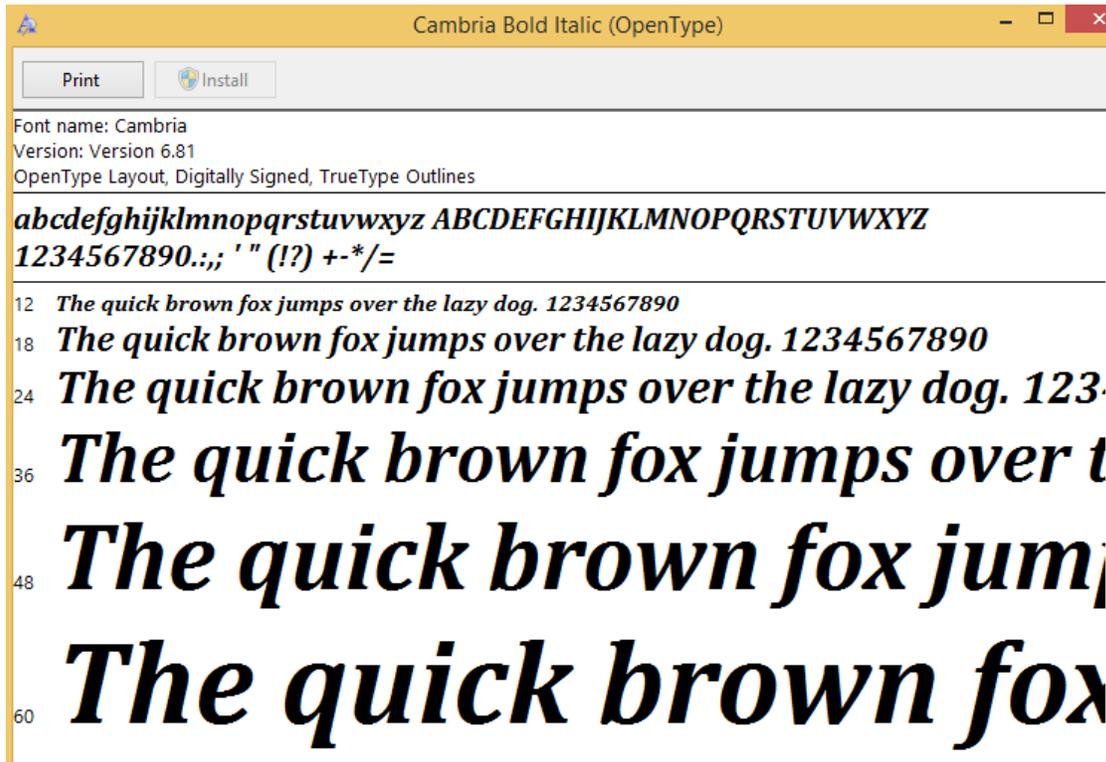
## Windows 10 for Microsoft Office users

### Fonts - Add Font

Find the font file (usually .TTF or .OTF), right-click and choose Preview from the menu.



You can then see or print a preview of the font.



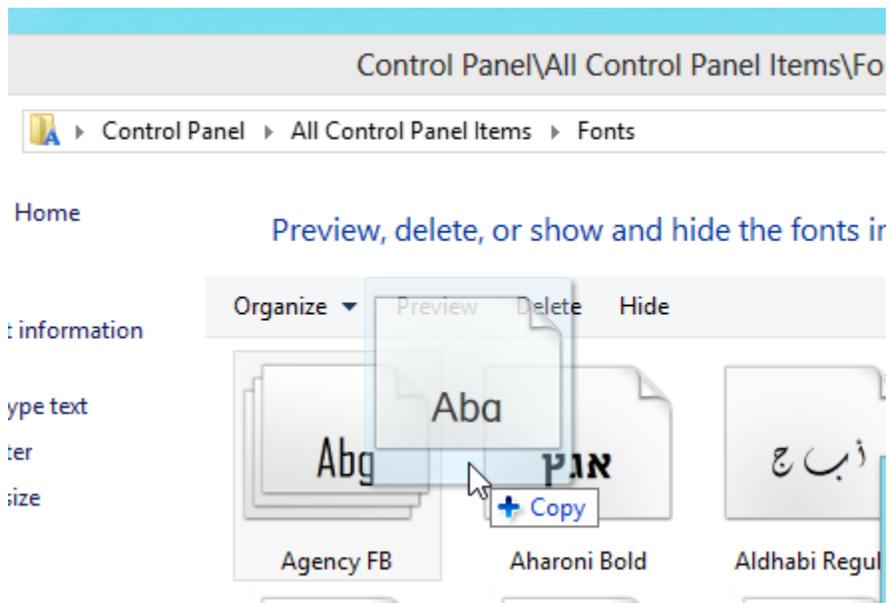
## ADD FONT

Adding a font to Windows is so simple.

## Windows 10 for Microsoft Office users

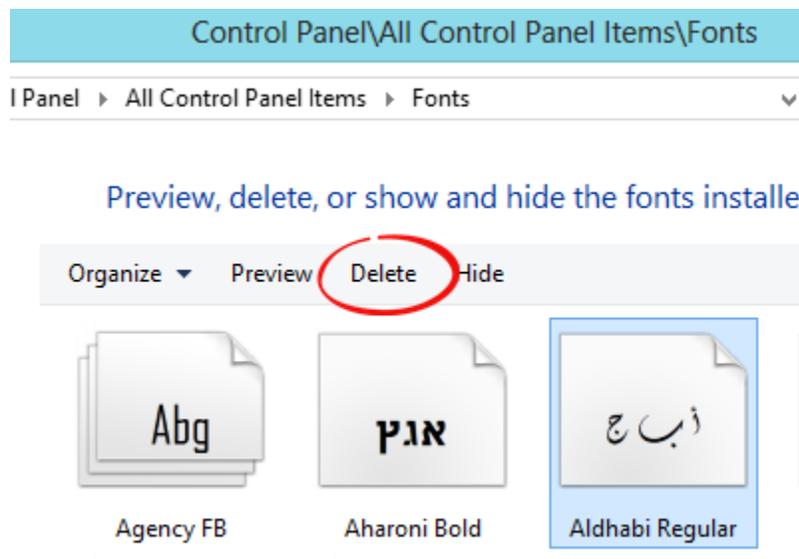
### Fonts - Remove Font

From the font Preview window shown above you can click the Install button and it's done. Or the right-click menu for a font file also has an Install option. Even easier, select the font file and drag it to the fonts listing at Control Panel | Fonts.



## REMOVE FONT

Removing a font is simple too. Go to Control Panel | Fonts, select the font and either choose Delete from the options at the top of the list or hit your Delete key.



## Windows 10 for Microsoft Office users

### Fonts - Windows and high DPI screens

Before deleting a font, make sure you don't need it to display any documents. If you open a document needed a missing font, Office will try to substitute a 'similar' font but the matching font doesn't always work well.

Note that this will remove the font from the system entirely with no 'undo'.

So we suggest copying the font (drag and drop from the Fonts window) to another folder before deletion. If you need it again, it's simple to reinstall from the copy.

## HOW MANY?

There's no hard limit on the number of fonts you can install into Windows.

Certainly any number of fonts under, say, 5,000 should not be a problem technically speaking. There are people who run Windows with 10,000 fonts or more but that's extreme.

When you have a lot of fonts, some programs (but NOT Microsoft Office) might have trouble dealing with so many offered by Windows.

The biggest problem with having so many fonts installed is sorting through such a long list to find the ones you want.

So it's best to keep the installed fonts list reasonably short, just for your own sanity.

## WINDOWS AND HIGH DPI SCREENS

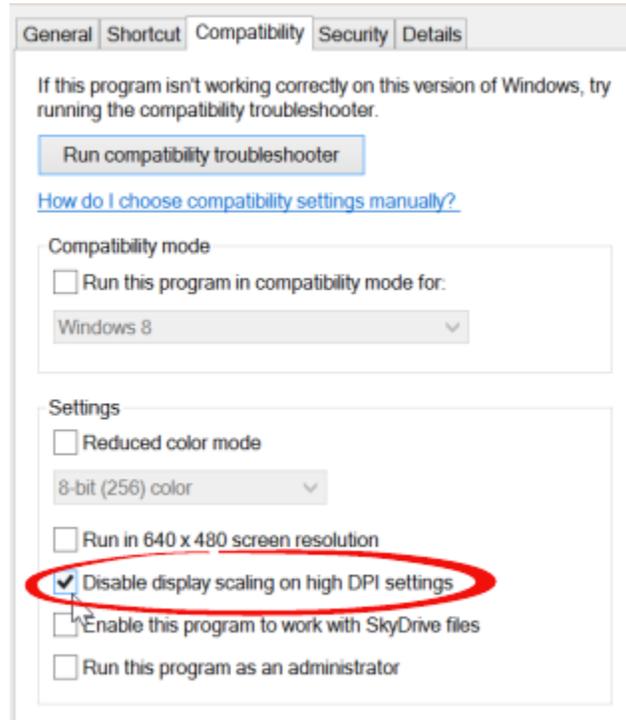
Windows 8.1 improved the support for high resolution (high DPI) screens that are becoming more available and affordable.

However, there's a downside. Some desktop programs can't cope with high DPI display and look 'fuzzy'. The partial fix is an addition to the Compatibility options.

## Windows 10 for Microsoft Office users

### Fonts - Ruble symbol

Right-click on the program shortcut, choose Properties then the Compatibility tab.



Check the box 'Disable display scaling on high DPI settings'. Then restart the program and see how it looks. The fonts should look better but graphics smaller – you win some and lose some I'm afraid.

## RUBLE SYMBOL

Back in December 2013, the Russian government approved a change in the Ruble currency sign to this:

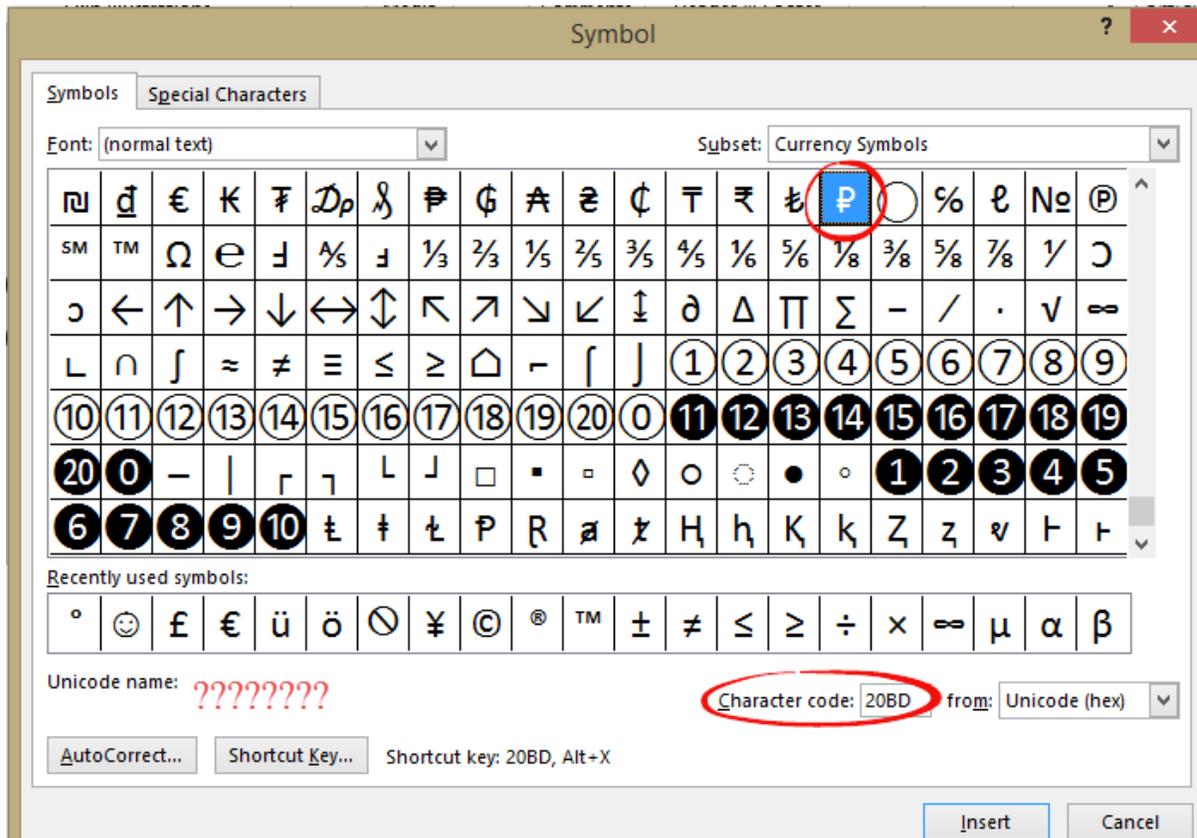


This symbol was added to the Unicode v7 character set and given the code 20BD (U+20BD).

# Windows 10 for Microsoft Office users

## Fonts - Ruble symbol

The August 2014 Update to Windows 8.1 adds this symbol, as you can see in the Microsoft Office; Insert | Symbol dialog:



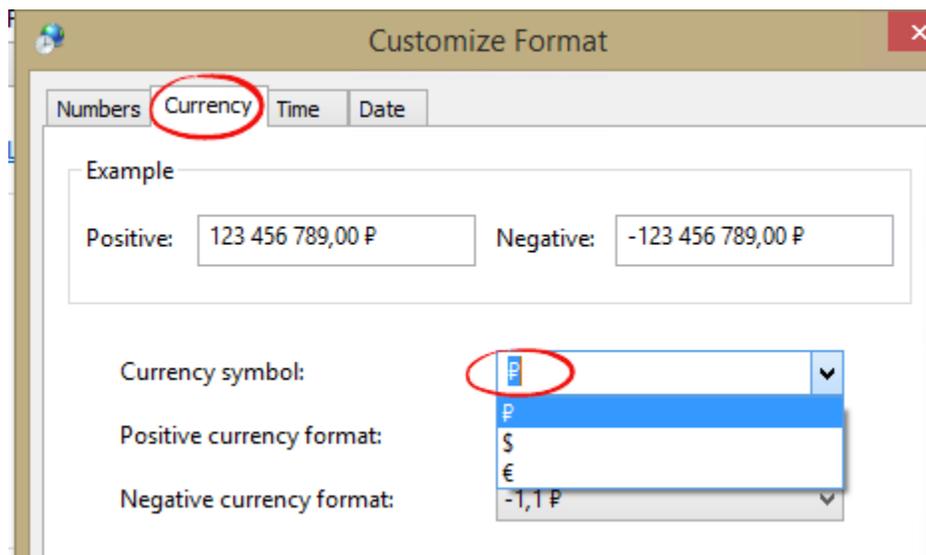
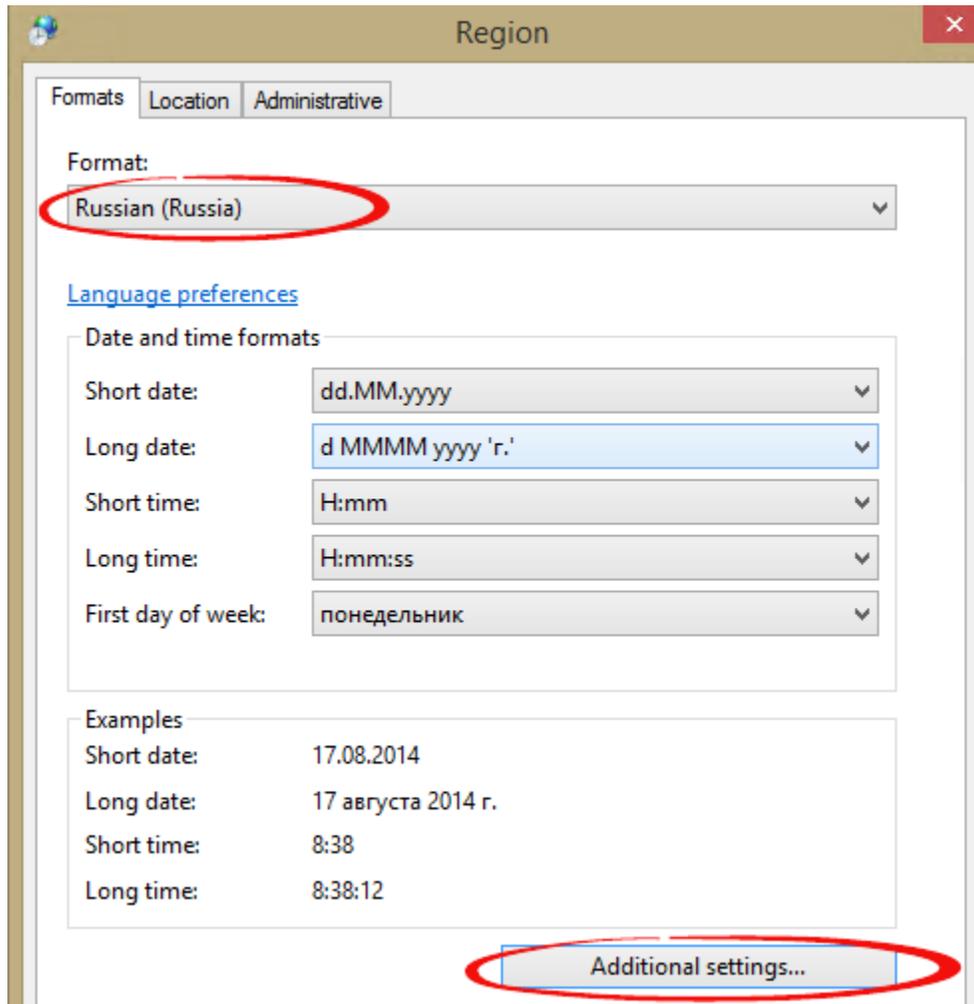
Unfortunately, Microsoft neglected to add the name of the Symbol which makes it harder to find in the Windows Character Map accessory (which has a name search feature).

In Office the clumsy shortcut for the Ruble symbol is 20BD then Alt + X.

# Windows 10 for Microsoft Office users

## Fonts - Ruble symbol

The Ruble symbol is now the default setting for the Russian region from Control Panel | Region | Advanced Settings | Currency

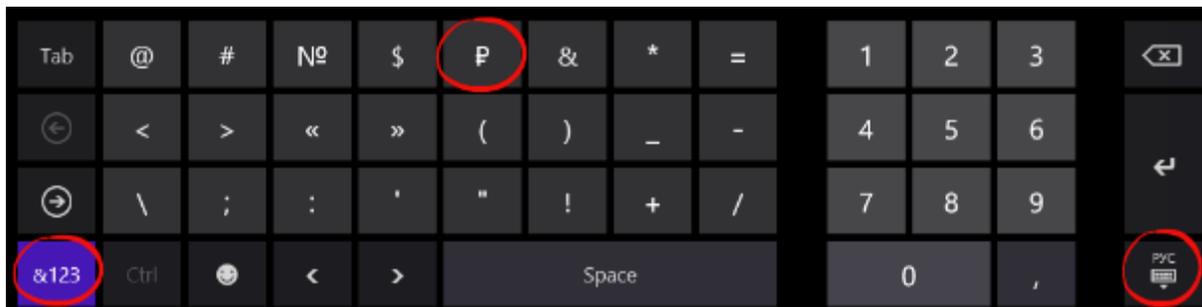
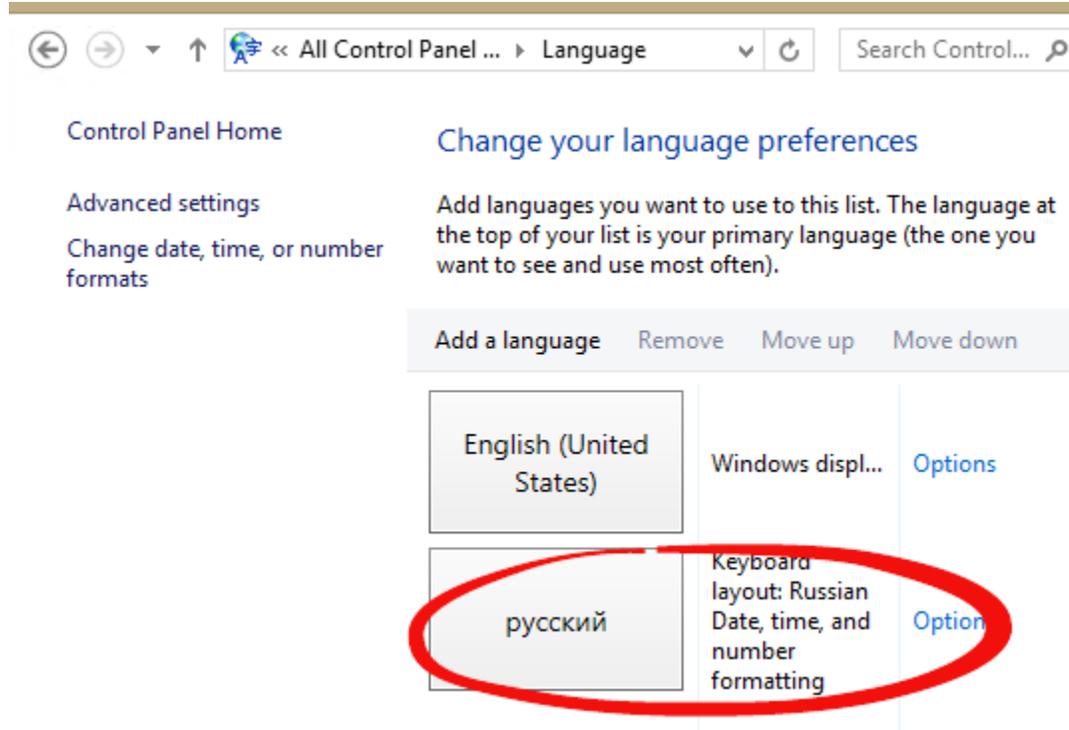


# Windows 10 for Microsoft Office users

## Fonts - Character Map

As you can see, the Ruble symbol is setup to follow the digits.

With Russian keyboard settings added (Control Panel | Language) the Ruble symbol will appear when Russian virtual keyboard is selected.



## CHARACTER MAP

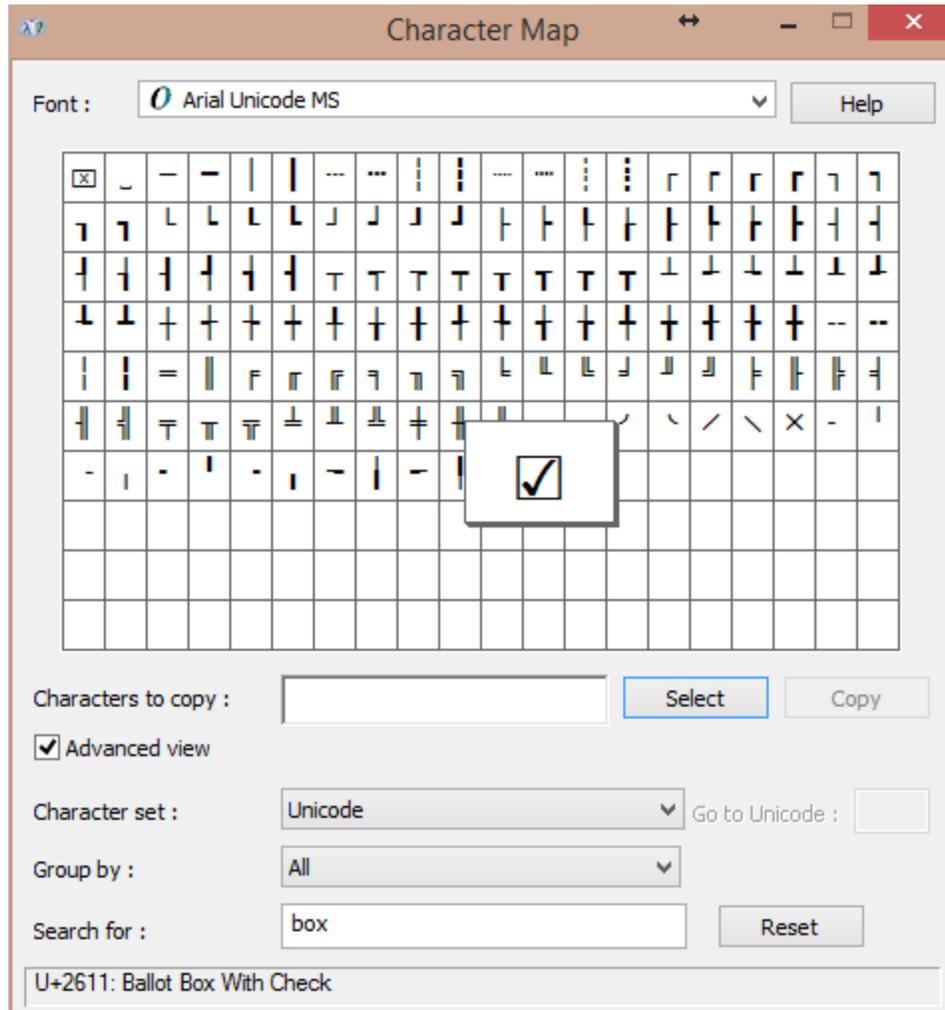
Character Map has been in Windows for as long as we'd like to remember and it's done right. Over the years, the 'softies who've worked on it have given some thought to the needs of people trying to find, preview and select characters. Character Map has some useful features not available in Microsoft Office's Insert Symbol.

## Windows 10 for Microsoft Office users

### Fonts - Character Map

You'll find Character Map in the Accessories/Windows Accessories of any version of Windows. In Windows, press the Windows key then type 'cha' then it should appear on the Apps list.

In its basic form you can select one or more characters then copy to the clipboard and paste into any program you wish.



Click on Advanced View to see all the useful stuff like:

**Character Set:** choose a language or script from the pull-down list.

**Group by:** more groupings by scripts but at the bottom is 'Unicode Subrange' which opens up groupings for symbols, dingbats, maths and many other blocks.

**Search for:** type in a search term, like 'box' (shown above) to narrow the list to matches against the character labels.

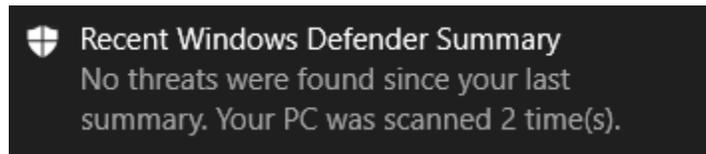
# WINDOWS DEFENDER

Windows Defender is the anti-virus component.

It does real time virus checks on new and changed files on your computer. Also regular scans of your hard drives for nasties.

Notwithstanding the hype and scare tactics of other anti-virus software makers, Windows Defender is enough and there's no need to spend any more. In fact, having multiple anti-virus packages on the one computer can cause conflicts and hassles.

If Windows Defender has a flaw, it's too discreet and unseen. Defender is installed, setup and started automatically. It runs unseen and mostly unappreciated though occasionally you might see a message like this:



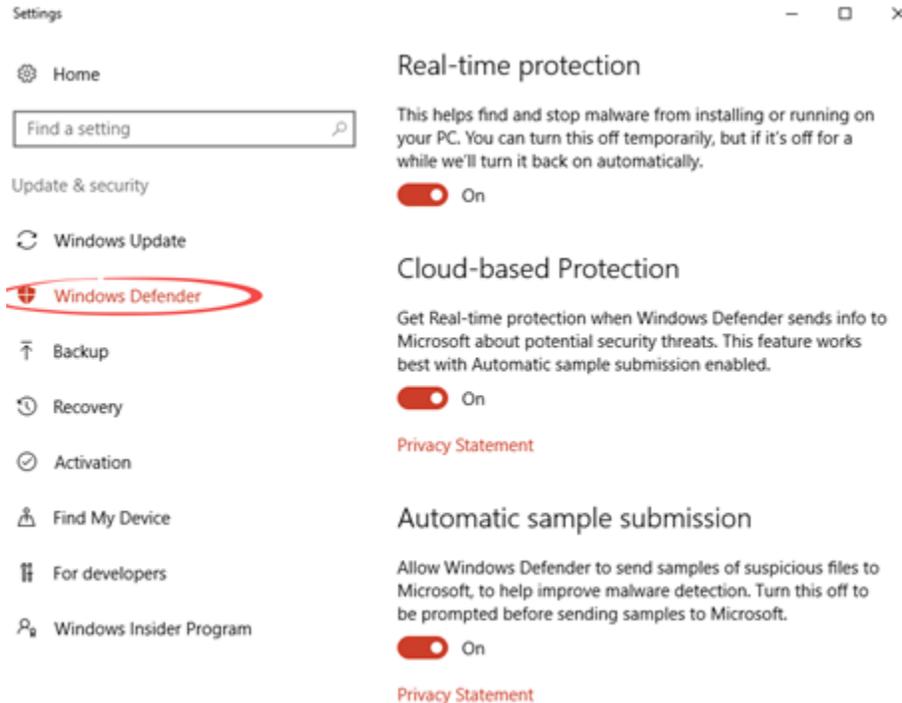
There are some parts of Defender that are worth keeping in mind, which we'll cover in this chapter; Offline scans, checking external drives and files.

# Windows 10 for Microsoft Office users

## Windows Defender - Settings

### SETTINGS

Defenders settings are at Settings | Update & Security | Windows Defender.



Most people will leave these options ON except perhaps for 'Automatic sample submission'.

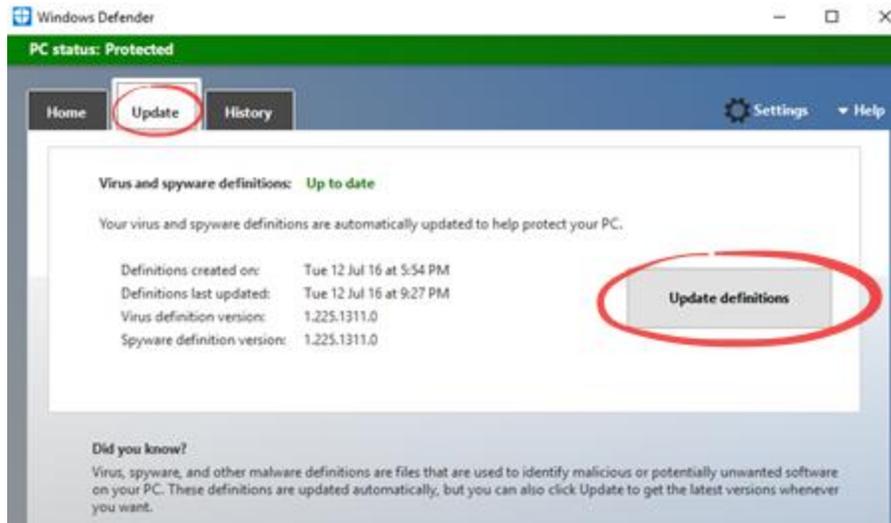
- **Real-time protection** – the key part of Defender. It checks your computer all the time, as file changes are made.
- **Cloud-based Protection**
- **Automatic sample submission** – sends suspect files to Microsoft. You may turn this option off to preserve your privacy.
- **Exclusions** - files can be excluded from virus scans. Use with care, if at all.
- **Enhanced Notifications** – turn off to reduce the small number of messages you see in the notification pane.

# Windows 10 for Microsoft Office users

## Windows Defender - Scans

### UPDATING

Defender will get the latest virus information automatically from Microsoft. You can force it to update immediately by opening Windows Defender | Update | Update definition.

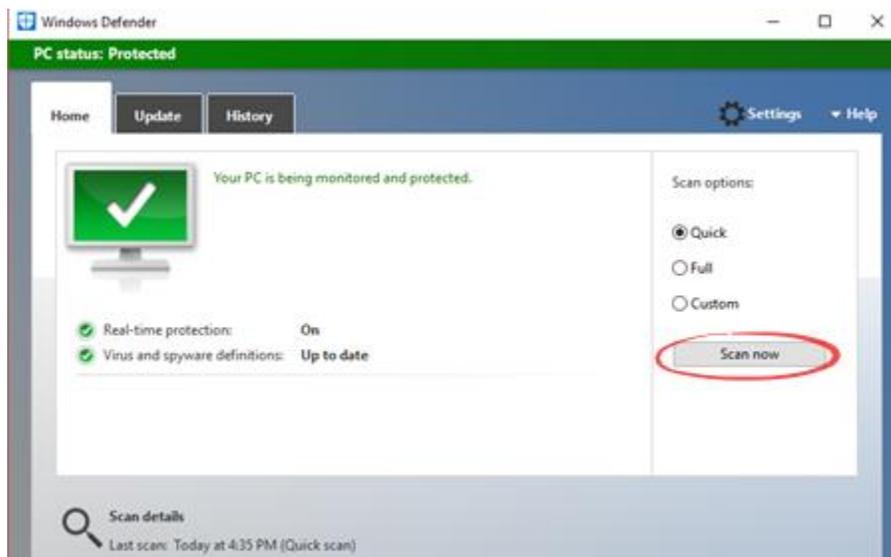


### SCANS

Defender does regular Quick Scans for viruses, as well as the 'real-time' checks as files are added and changed.

Look at the bottom left of the Home tab to see when the last scan was done.

You can do manual scans from Windows Defender | Home | Scan Now.



# Windows 10 for Microsoft Office users

## Windows Defender - Offline Scan

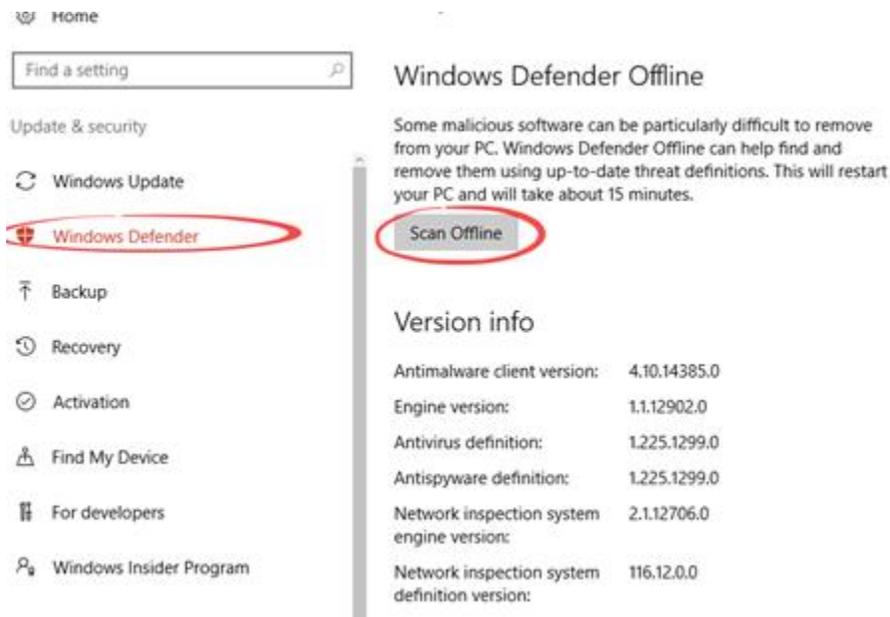
Choose 'Full' if you want to do a full scan of all files, which will take some time but happen in the background.

Custom lets you choose the drives to scan.

All external drives are automatically scanned when you plug one in.

## OFFLINE SCAN

Offline scan is a new part of Defender in the Windows 10 Anniversary Update.



'Offline' is a curious name for this feature. Defender's standard mode will work whether it's connected to the Internet or not.

'Offline' might be better called 'pre-start check'. It is a Quick Scan of your computer but run without Windows. Your computer restarts in a special mode to do the Quick Scan on your computer. At the end of the scan, the computer reboots to normal Windows.

Why? There are some deeply embedded viruses that put themselves in the core of the Windows operating system. At those core levels it's hard to detect viruses, let alone remove them.

Offline scans should get around this by scanning the key Windows files when they are not in use.

To run an Offline Scan, go to Settings | Update and Security | Windows Defender | Scan Offline.

## Windows 10 for Microsoft Office users

Windows Defender - External Drives / New documents

---

*Warning – at the time of writing (before the public release of the Anniversary update), clicking Scan Offline will immediately shut down Windows with no other warning. It's possible to lose data from documents open at the time. Make sure you close all programs before clicking 'Scan Offline'.*

---

Microsoft says an Offline scan takes about 15 minutes and in our experience that's about right. You can't use your computer during that time and it's a good idea to plug portable devices into AC power.

After an Offline Scan with no problems detected, the computer will automatically restart.

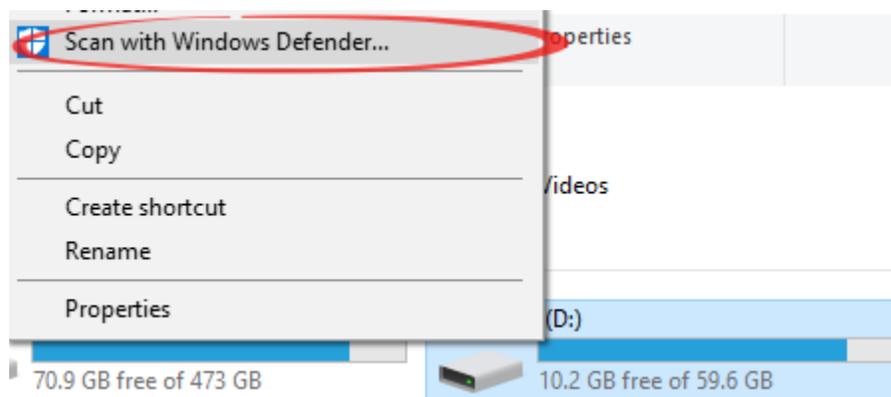
When / How often to run an Offline Scan? If a computer has a serious virus infection, an Offline Scan would be a prudent additional check. Without some specific reason, an Offline Scan could be done very occasionally, maybe every 6 or 12 months.

## EXTERNAL DRIVES / NEW DOCUMENTS

What about documents that arrive on a USB memory stick, instant messaging or other means?

Defender should automatically check new files that arrive on your computer including a scan of external drives when plugged in. But it does the job so quietly, it's hard to know if it's done the job at all.

You can right-click on the external drive and choose 'Scan with Windows Defender'.

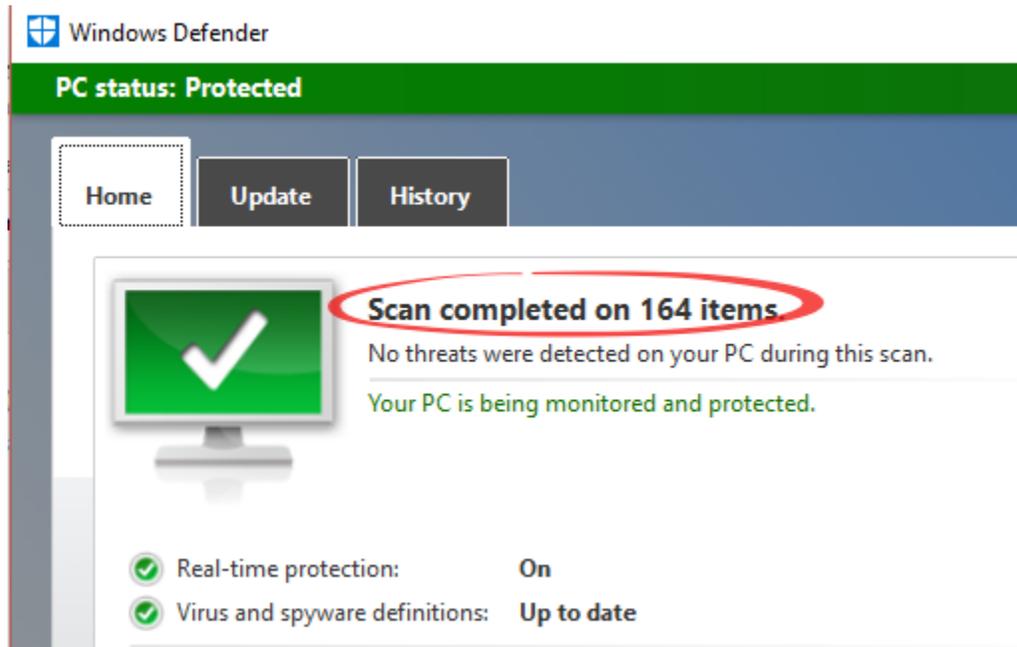


This will start a very quick scan of the drive. VERY quick, almost “blink and you'll miss it”. At the end of the scan, Defender shows how many items it

## Windows 10 for Microsoft Office users

Windows Defender - External Drives / New documents

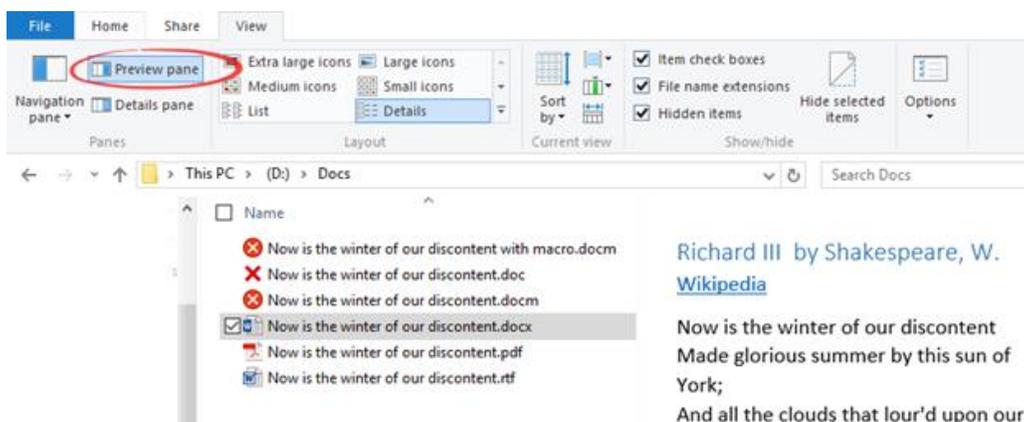
checked but, strangely, not a confirmation of what it checked (ie the name of the drive, folder etc).



You can also scan a single file or document, using the same shortcut.

The next step is to view the document without opening it in Office (which may trigger any virus payload in the document).

Windows Explorer is available to preview documents. Click on Home | Preview Pane.



This is similar to the Reading/preview pane in Outlook. However, the Explorer preview is controlled separately.

# VIRTUAL HARD DRIVES

A Virtual Hard Drive is a single file (.VHD/.VHDX) which Windows treats like an entire hard disk drive. It might sound like a strange thing but it's really useful and worth exploring.

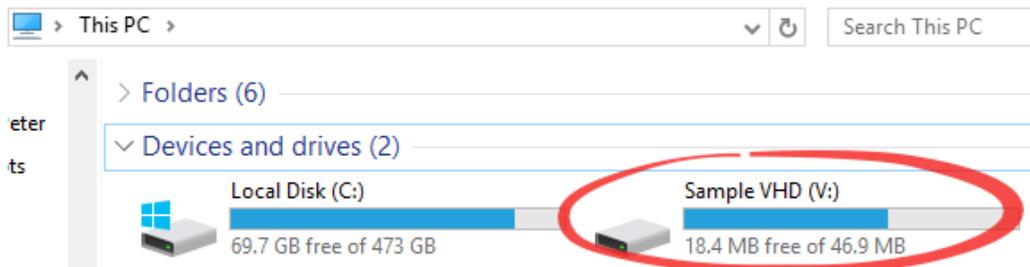
There are many uses including as a single secure container for transporting files, and adding more flexibility to Windows features like File History and Storage Spaces. VHD's can be used as a backup target or container for groups of files. They are essential for running virtual machines via [Hyper/V](#).

## BASICS

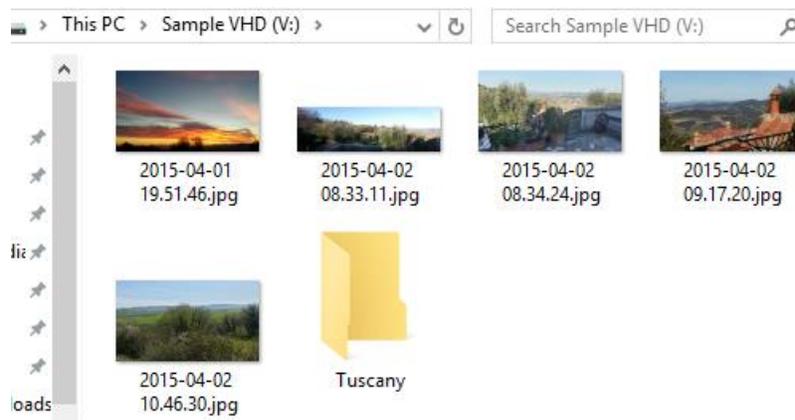
Here's a .vhdx file as it appears in Explorer. Test.vhdx is a single file.

Name	Type	Size
Test.vhdx	Hard Disk Image File	69,632 KB

Once attached to Windows, a VHD acts like an external drive you plugged in. In 'This PC' that single file .vhdx file appears as a drive.



Open up the drive and you can see files and folder in the .vhdx , just like any other drive.



## Windows 10 for Microsoft Office users

### Virtual Hard Drives - Advantages and Uses

You can read, write, copy and move files with the VHD. The programs you use won't be 'aware' that it's not a physical drive.

## ADVANTAGES AND USES

There are plenty of uses for virtual hard drives. Once you've discovered VHD's, you'll probably find worthwhile uses for them.

### CONTAINER

A Virtual Hard Drive can be a container for a collection of files, or perhaps many files for a particular project or hobby.

The VHD can be moved around between computers or people as a single file, instead of moving around many different files.

It's a good option for information that has to be transported from place to place. Unlike ZIP files, a VHD can be attached to Windows and used like any other drive. No need for packing/unpacking files from a ZIP or RAR file.

### SECURE

A VHD can be made very secure by using [Bitlocker](#) to encrypt the entire virtual drive. If the VHD gets lost or copied, the data isn't just password protected, it's encrypted to a high standard.

And we'll show you other tricks to hide a virtual drive from unwanted intrusion.

### BACKUP

Instead of backing up to an external hard drive or network share, save to a VHD instead.

Then you can move the VHD to an offsite location at your leisure.

### FILE HISTORY

Normally you get Windows File History to save its backups to another drive or network share. But there are situations where saving the backups to a virtual hard drive is a good option.

File History will let you change backups to a new location (it'll even offer to move the backups to the new destination). But sometimes it's more convenient to choose a virtual drive as the destination then move the virtual drive. If you keep the virtual drives target address (drive label or NTFS folder) the same, the physical location of the VHD doesn't matter to File History.

## Windows 10 for Microsoft Office users

### Virtual Hard Drives - Advantages and Uses

A VHD is a good solution for one, understandable, limitation of File History. It won't let you save backups to the same drive as the source files. That makes sense in normal circumstances but is a pain when you're travelling with a laptop and no other backup options.

The workaround is to send your File History backups to a VHD. The VHD will be on the same physical drive as the documents but Windows won't know that!

### STORAGE SPACES

Windows Storage Spaces must take over an entire hard drive and VHD's can fix that.

Let's say you have a 3TB external drive. You might want to use 1TB as part of a Storage Space pool leaving the rest for other storage.

Use a VHD to work around that limitation. Make a 1TB VHD on the external drive and point the Storage Space pool to that VHD.

With a VHD you can allocate the space you want on the external drive, leaving the rest for other purposes. Link the Storage Space to the VHD instead of the entire physical drive.

Bonus - you can move the virtual hard drive to another location without totally reconfiguring the Storage Space.

### VIRTUAL MACHINES

The original use of VHD files was for Virtual Machines like Hyper/V or VMWare. The virtual machines run from a bootable VHD which contains the operating system and anything else the virtual machine needs.

### DUAL BOOT

A truly geeky use for VHD is for dual booting the physical computer. It's possible to setup the computer so that it starts Windows (or other OS) from a virtual hard drive instead of the physical hard drive.

Personally, I avoid dual booting computers at all costs. It's way too time consuming and difficult to manage. These days running virtual machines is a lot easier and more flexible than multiple startup options on the physical machine.

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*The widely adopted shorthand for virtual drive can be a little confusing. References to 'VHD' usually mean Virtual Hard Drive but could also refer specifically to the older .VHD file format. The context of 'VHD' usually makes it clear.*

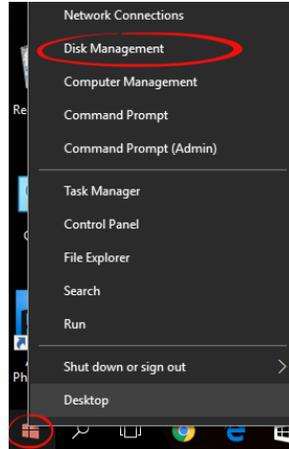
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# Windows 10 for Microsoft Office users

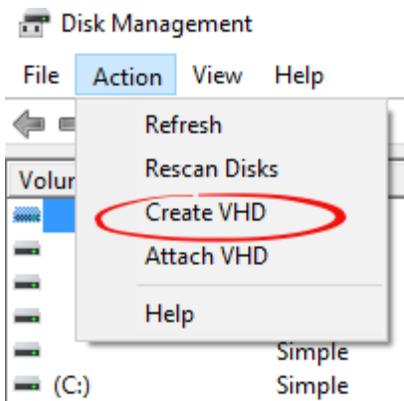
## Virtual Hard Drives - Make a VHD

### MAKE A VHD

To make a Virtual Hard Drive go to the Disk Management console. Right-click on the Start menu and choose 'Disk Management'.



From Disk Management choose Action | Create VHD



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*If you're new to virtual drives, you might like to make a small one to start with. You'll see that our examples in this chapter are under 100MB. Once you've grasped the basics, you can make others of any size.*

---

## Windows 10 for Microsoft Office users

### Virtual Hard Drives - Make a VHD

#### SETTINGS

Now you can setup your first virtual hard drive.

**Location:** where to save the virtual disk drive. Of course, you can move it later.

**Size:** Choose the initial size of the VHD. VHD's can be small (a few Megabytes) or enormous (many Terabytes). While you can expand or contract the size of a VHD, it's not that easy. It's better to set a size that's larger than any foreseeable need. Note: if you choose 'Dynamically expanding' VHDX then the size you set here is the maximum size of the VHDX file.

**Format:** choose VHDX unless you need compatibility with Windows 7 or earlier versions of Windows, or some other program that only supports VHD.

**Type:** *Fixed Size* will create a VHD/VHDX file that takes up all the space you chose in the size option above. You might choose this option to ensure that the physical drive always has enough space for the VHD. There may be a small performance benefit to a fixed size VHD but not enough to outweigh the disadvantages.

*Dynamically Expanding* starts as a small VHD file and gets bigger as you add files to it. It only expands, not shrink. If you add many files, then delete them, the VHD won't get smaller unless you [Shrink](#) it.

## Windows 10 for Microsoft Office users

### Virtual Hard Drives - Make a VHD

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*We strongly recommend VHDX drives with the 'Dynamically Expanding' option. It is a better use of physical disk space and gives you more options later. All the tips in this chapter assume you're using Dynamically Expanding VHDX drives.*

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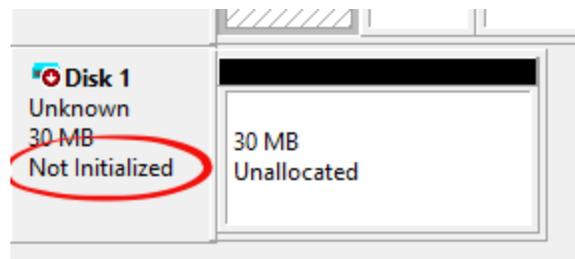
Choose OK to make the VHD and load it into Disk Management.

You now have the virtual equivalent of a 'bare drive'. It has no formatting etc. that Windows needs to make it work.

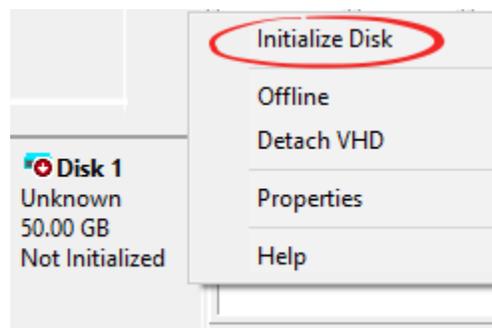
### INITIALIZE

A new virtual hard drive has to be initialized and formatted, just like any other new 'bare' drive.

Windows has mounted the new virtual drive in Disk Management for you. Note the 'Disk n' number of the virtual drive.



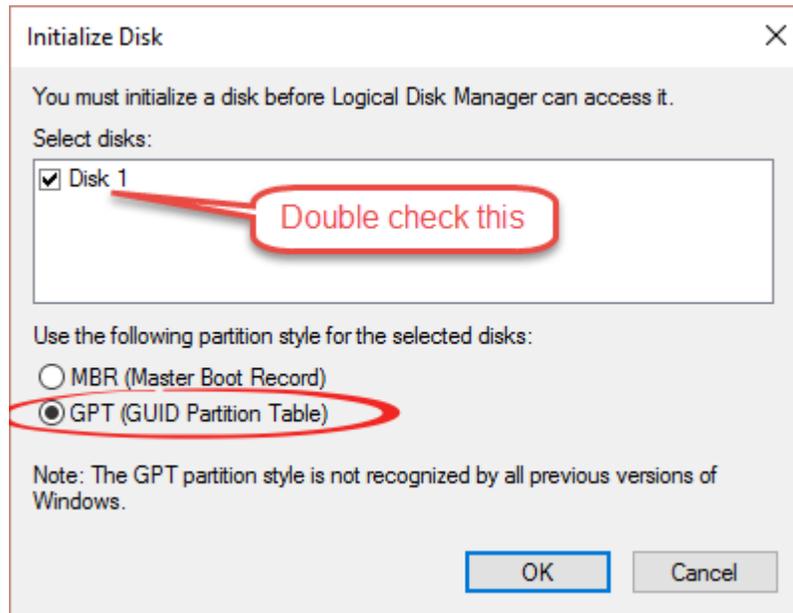
Right-click on the left side (near where it says 'Not Initialized') and choose 'Initialize Disk'.



## Windows 10 for Microsoft Office users

### Virtual Hard Drives - Make a VHD

Now choose the Initialize options. They seem technical and confusing but the choices are simple.



**Select disks:** make VERY sure the virtual disk you've just made is the one selected and no other. Windows should get it right but a mistake could accidentally wipe an entire drive (physical or virtual) so always check.

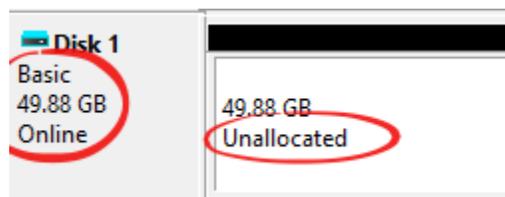
**Partition Style:** for most data storage purposes either MBR or GPT is OK. GPT can't be used for small VHD's so switch to MBR if necessary.

If you'll be using the VHD as a bootable drive (i.e. for a virtual computer) then choose the partition style that suits your need.

Normally the Windows defaults are fine and you can click OK to initialize.

### FORMAT

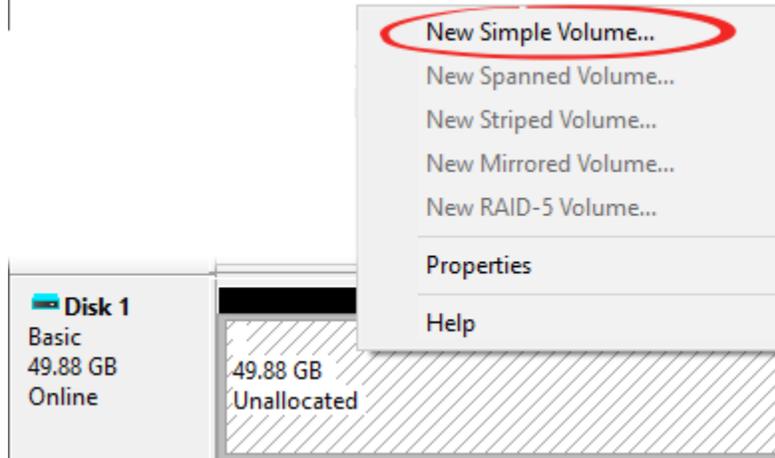
The VHD is now initialized (Windows says 'Online') but needs to be formatted.



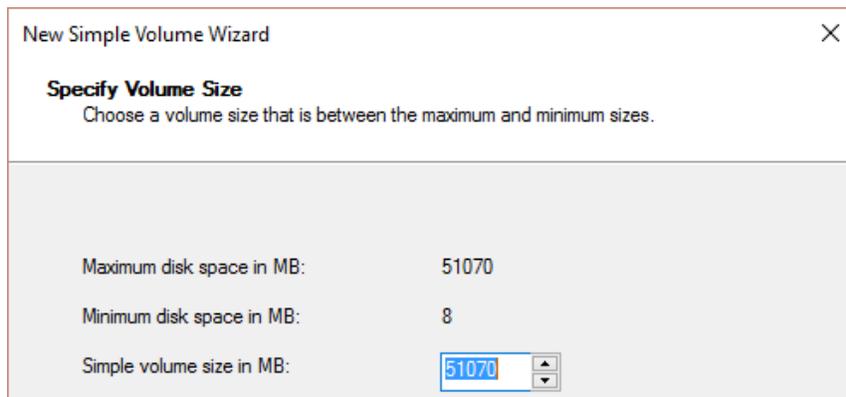
# Windows 10 for Microsoft Office users

## Virtual Hard Drives - Make a VHD

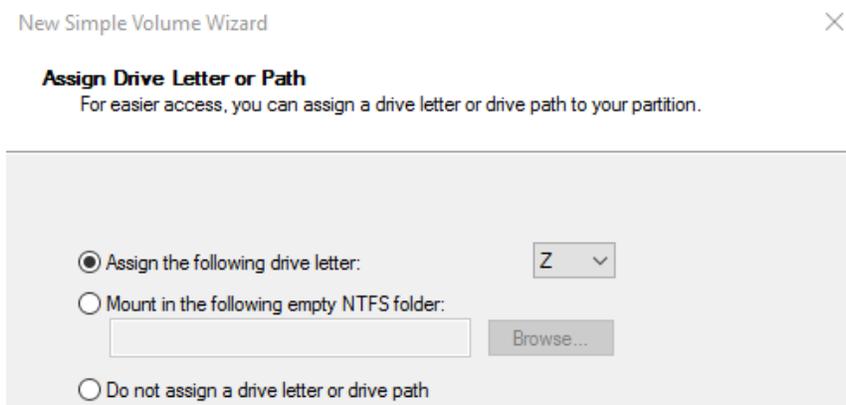
Right-click on the drive space at right and choose 'New Simple Volume'.



You could format the virtual drive into multiple volumes but we'll assume you want to format the entire VHD as a single volume,



Windows will choose the maximum available size to format so you can just click Next to continue. There's some technical overhead for any drive so the maximum available disk space will be a little smaller than the drive size you set earlier.

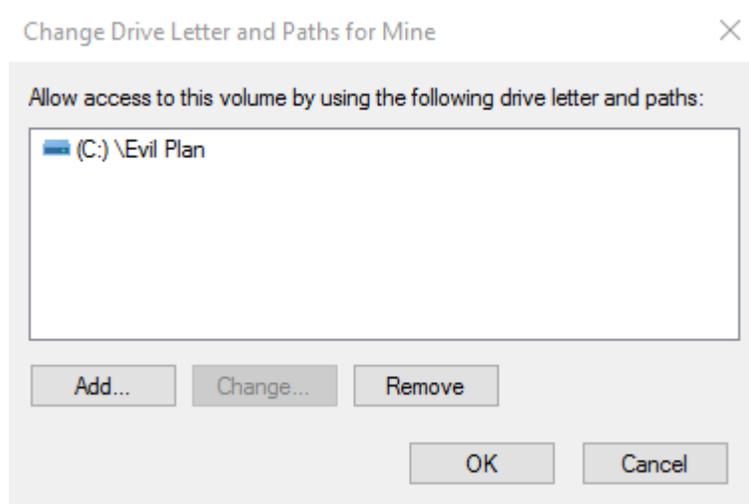


Just like any drive, it can be allocated a drive letter, mounted as an NTFS folder or just left without either. We'll add the VHD as Drive Z for this example.

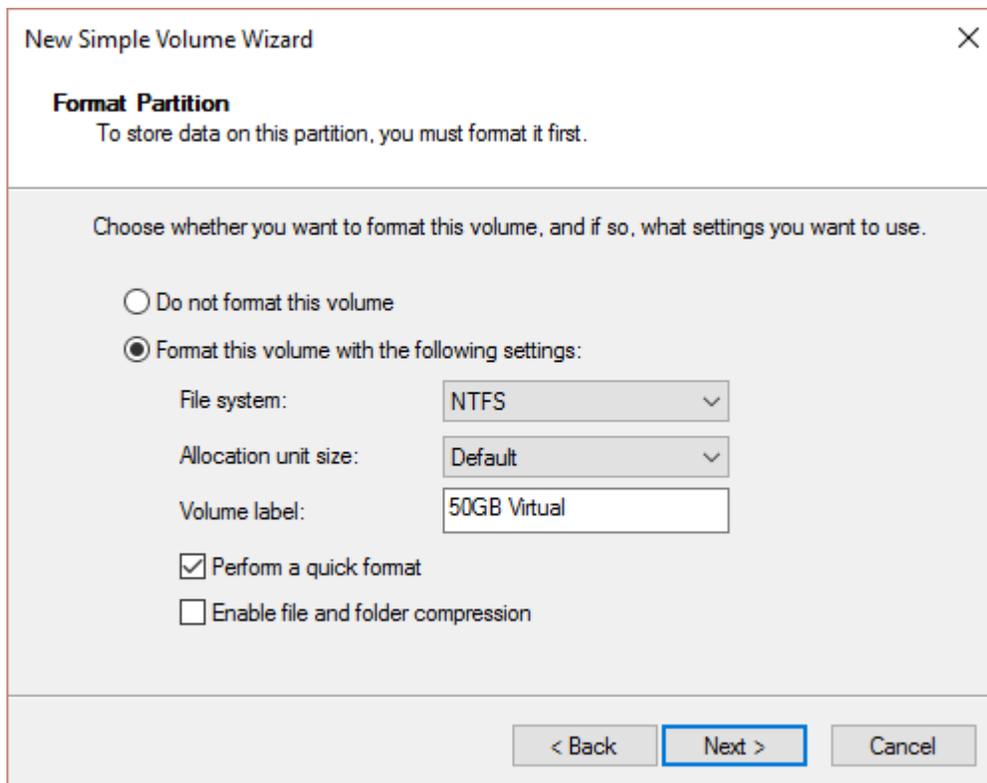
## Windows 10 for Microsoft Office users

### Virtual Hard Drives - Make a VHD

Mounting as an NTFS folder is the lesser known but useful option. It lets you select a folder location (eg D:\Backups ) which is really another drive, in this case a virtual drive. This example the folder C:\Evil Plan will take you to the contents of the attached VHD.



Click Next to continue.



Again, Windows will choose defaults for you.

**File System:** NTFS is the best file system choice unless you have a reason to choose FAT or FAT32 for compatibility with earlier Windows or other OS. NTFS is necessary for Bitlocker.

**Allocation unit size:** leave as Default.

## Windows 10 for Microsoft Office users

### Virtual Hard Drives - Make a VHD

**Volume Label:** If you have multiple VHD's, clear labels on each one is essential. This is different from the file name of the .VHD or .VHDX

**Perform a quick format:** leave checked for a faster setup.

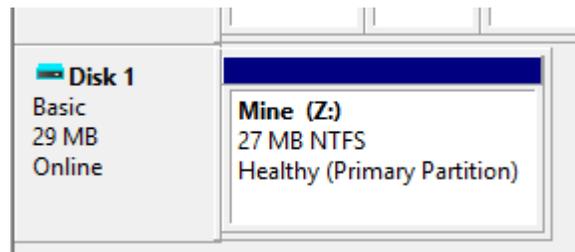
**Enable file and folder compression:** You can choose this but it's usually better to select on a 'per folder' basis within the VHD. Most common file formats (DOCX, XLSX, JPG etc) are already compressed so there's less advantage to drive level compression than there once was.

Choose Next, check the summary of your formatting options then Finish to start the formatting. If you chose 'Quick Format', it won't take long.

In Disk Management you'll now have a bouncing baby virtual drive ready. Like this:

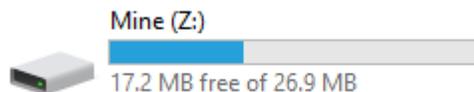


Or this one which has been linked to Drive Z:



FINISHED!

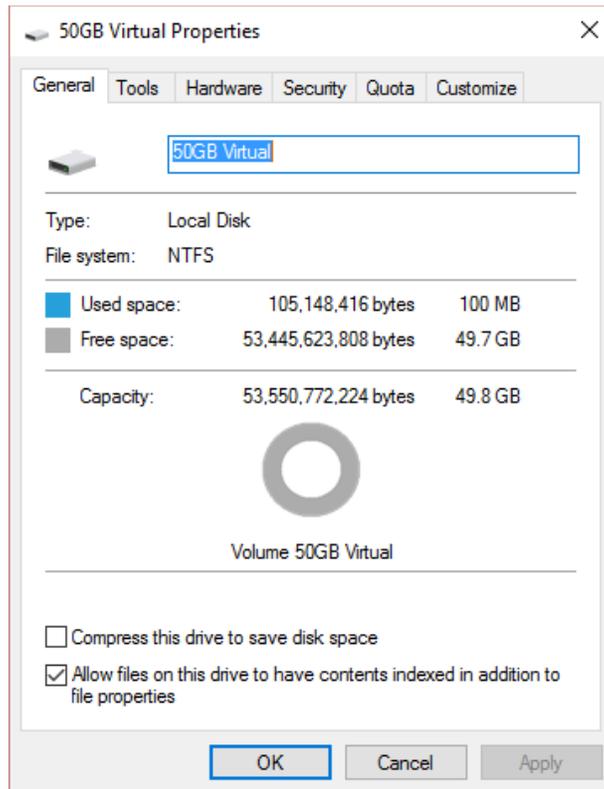
The Virtual Hard Drive looks like this in Explorer, just like any other drive.



# Windows 10 for Microsoft Office users

## Virtual Hard Drives - Actions

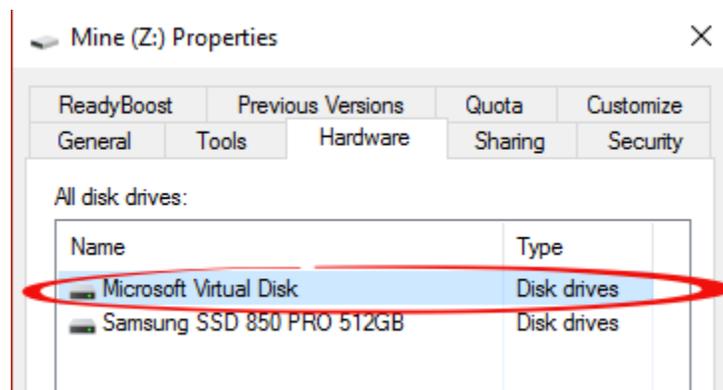
Right-click on the drive icon and choose Properties:



As you can see, it looks like any other hard drive. It's showing as a 'Local Drive'. Under Tools there are the usual drive utilities.

The contents of a VHD can be indexed for fast searching.

The only direct way to know it's a virtual drive, not physical is under the Hardware tab:



## ACTIONS

Now you have a virtual hard drive here's the basic actions to work with it.

**Attach** – is like plugging in or installing a physical drive. Also called 'Mount'.

## Windows 10 for Microsoft Office users

### Virtual Hard Drives - Actions

**Detach** – the VHD version of unplugging or removing a physical drive. Also called ‘Eject’.

**Moving** – moving the VHD to another location.

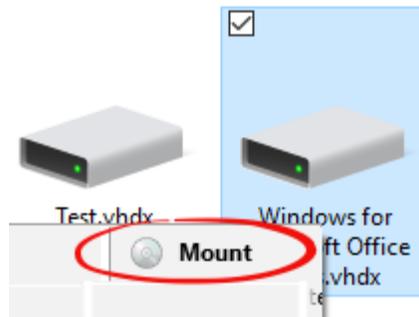
### ATTACH

Just double-click on the VHD/VHDX drive file and it will attach to Windows and open in Explorer. That’s far and away the easiest way to reach a virtual drive.

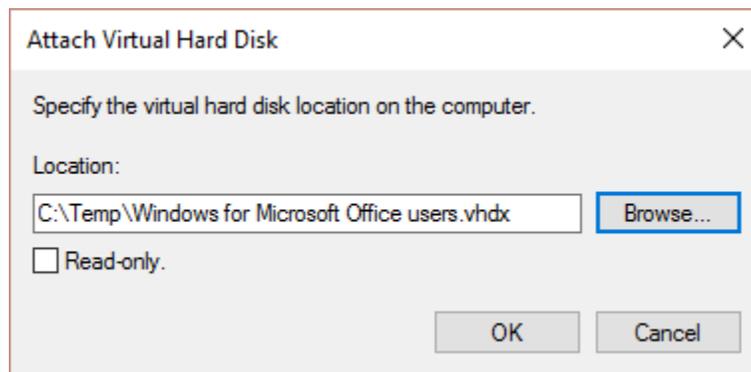
The official way to attach a virtual drive is via the Disk Management console. Choose Action | Attach VHD.



Another way is to find the VHD/VHDX file in Explorer, right-click and choose Mount.



If you choose the Disk Management option, you’ll see this simple dialog box.



**Read-only** -- so you can only read the contents of the drive, not write to it. The equivalent of a CD/DVD. Use this for a fixed data store like installation media or reference database.

## Windows 10 for Microsoft Office users

### Virtual Hard Drives - Actions

If you have attached the VHD to the computer before, it will remember the drive letter or NTFS mount settings from past attachments.

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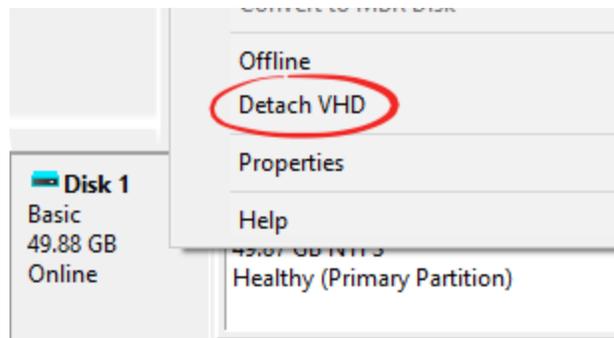
There is a free tool called [Simple VHD Manager](#) which will setup an autoloading VHD among other VHD management tasks. We've not had a chance to try it out but you might want to.

---

### DETACH

The equivalent of unplugging a physical drive is called 'Detach' or sometimes 'Eject'.

In Disk Management, right-click on the virtual drive and choose 'Detach VHD'.



The faster way is to right-click on the drive icon in Explorer and choose 'Eject'.

### MOVING / COPYING

One of the advantages of a VHD is that you can move the VHD/VHDX file to another location or computer. Copying/duplicating a VHD is also OK.

Do that just like another other file using the usual copy/move commands but you have to detach the VHD first.

Of course, many VHD/VHDX files are very large so you might need patience or a large portable drive.

### BEST LOCATION

Virtual Hard Drives can be at any accessible location on your computer. The local hard drive/s, external USB drive or a network share.

Naturally, they work best on a faster drive, internal or external. A USB 3 drive using a USB 3 port for example.

A VHD can be on a network share but performance is usually poor. Better to work with the VHD on a faster, local drive then move it to a network share when you're finished.

# Windows 10 for Microsoft Office users

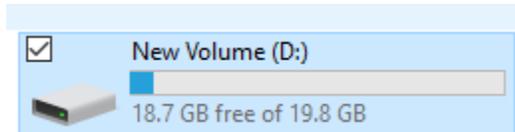
## Virtual Hard Drives - Actions

### SHRINK

A dynamically expanding VHDX drive can only expand to store files added to it. It doesn't automatically shrink if those files are fully deleted.

That means a VHDX can become unnecessarily large if it's filled with a lot of files which are later deleted. The .VHDX file will remain at the largest size that was ever needed to store data.

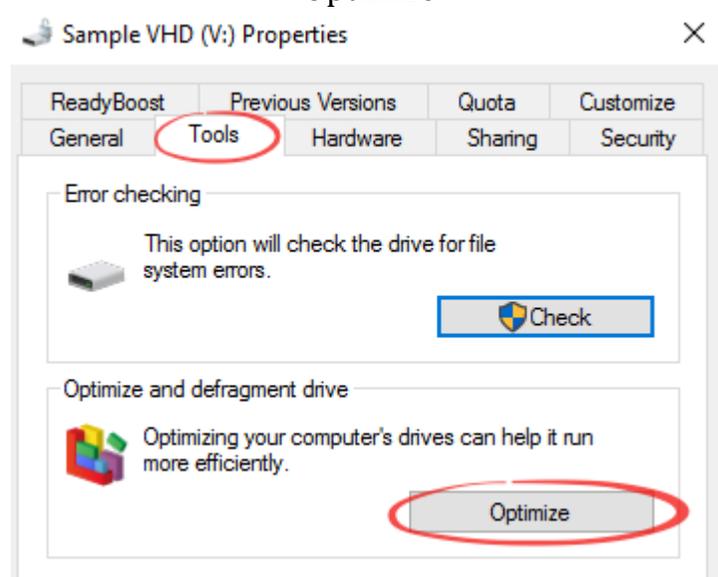
For this example, we have a 20GB virtual drive which is only using about 1.3GB for files.



But the .VHDX file is about 5GB because there were many files added to the virtual drive and later moved off it. The .VHDX is taking up a lot of unnecessary space on the physical drive.

To shrink a VHDX drive, first:

- Make a full backup of the .VHDX you want to shrink. Just in case something goes wrong.
- Delete all the unwanted files from the virtual drive.
- Empty the Recycle Bin in the VHD.
  - Defragment the virtual drive. Right-click on the mounted drive Properties | Tools | Optimize.

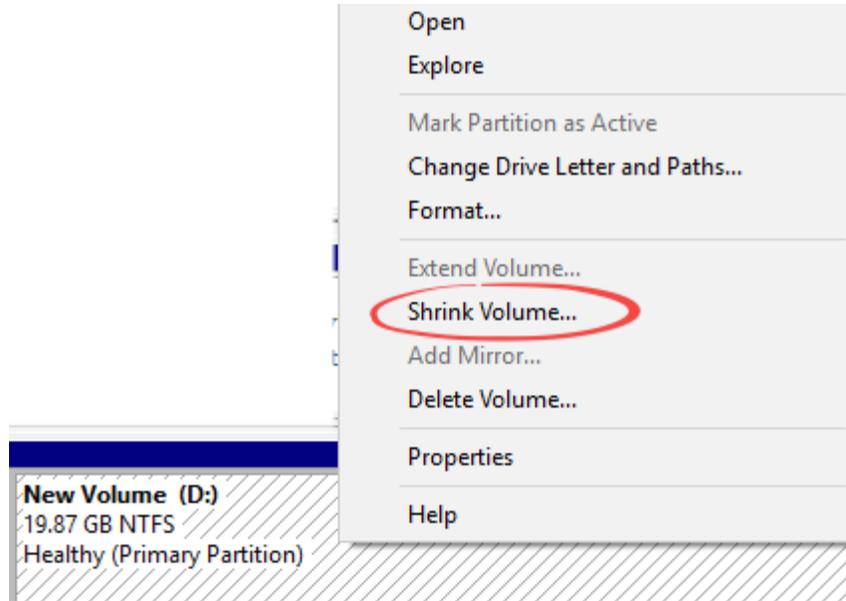


Those steps will rearrange the VHD to put all free space in a single block.

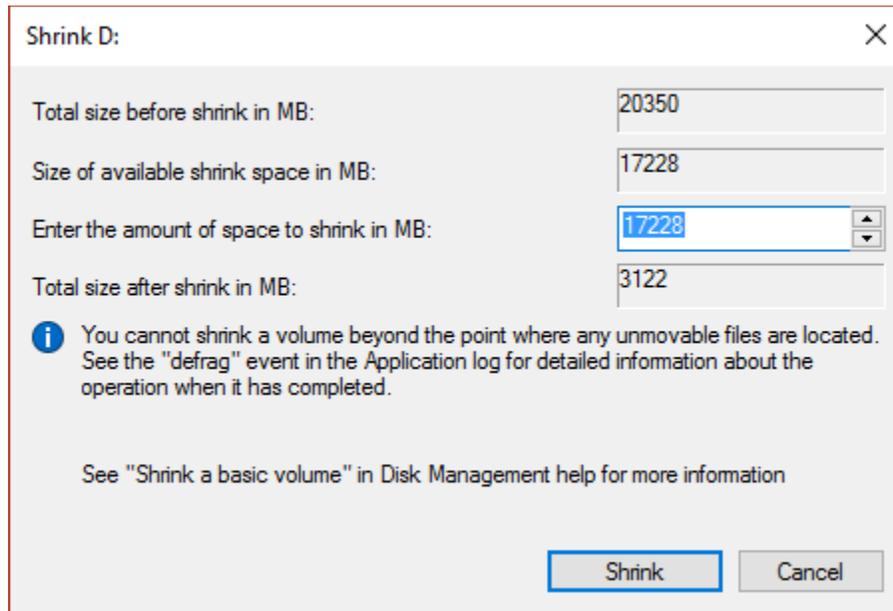
Mount the VHD in Disk Management, right-click on the partition and choose 'Shrink Volume'.

# Windows 10 for Microsoft Office users

## Virtual Hard Drives - Actions



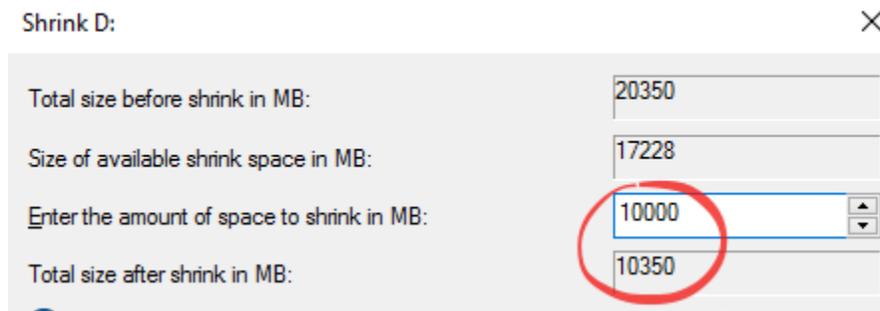
The 'Size of available shrink space' is the maximum amount you can shrink the drive. You probably don't want to shrink that much because it would leave no space for new or changed files.



# Windows 10 for Microsoft Office users

## Virtual Hard Drives - Actions

Reduce the 'Amount of space to shrink' to a lower value, the 'Total size after shrink' shows how large the VHD will be after shrinkage.

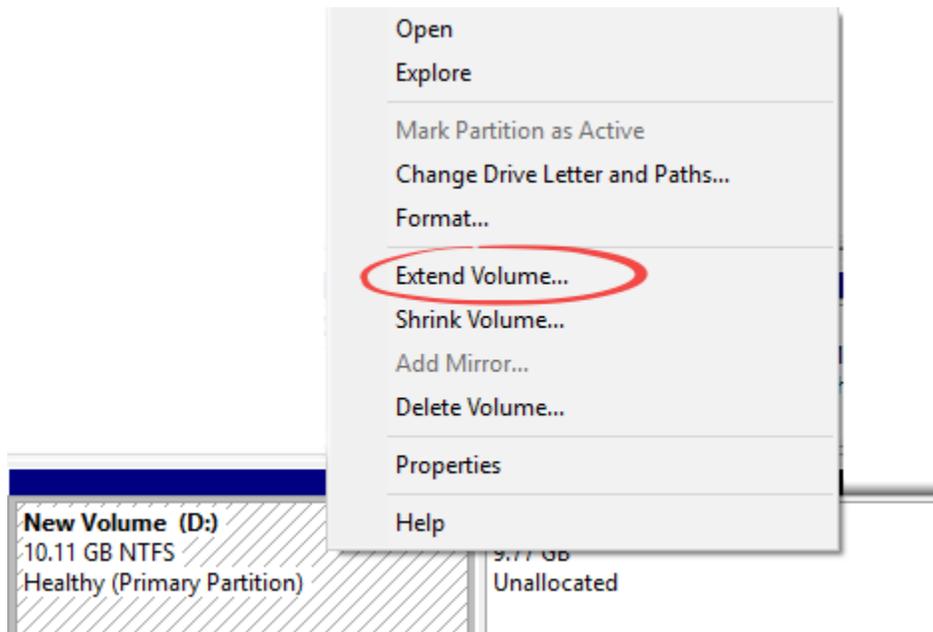


Click on shrink and the VHDX file size will reduce. But that's not the end of the job.

To shrink the VHDX file size, you had to reduce the notional size of the virtual drive. You can see that in Disk Management. There is now Unallocated space in the VHDX representing the 'Amount to Shrink' you set above (give or take a bit of overhead). The drive Windows can 'see' is now about 10GB not the full 20GB it was before.



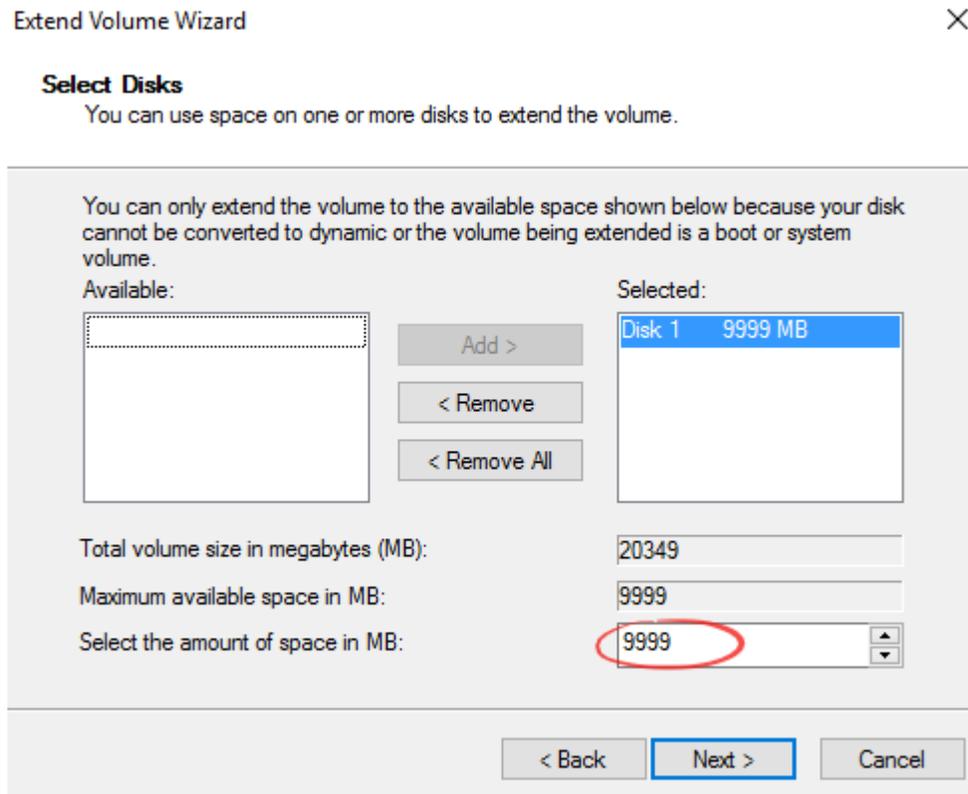
To fix that, you need to expand the existing volume into the unallocated space. Right-click on the volume and choose 'Extend Volume'.



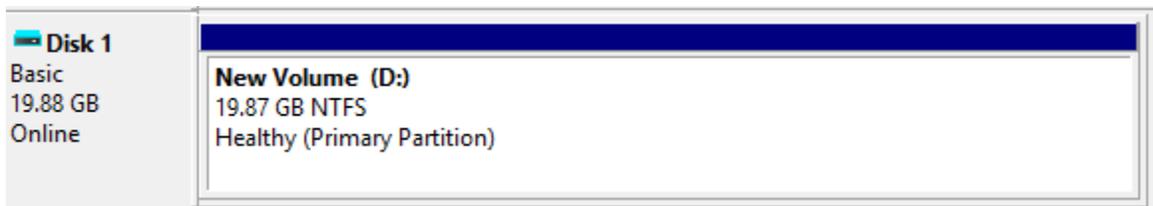
# Windows 10 for Microsoft Office users

## Virtual Hard Drives - Actions

The wizard will automatically choose the maximum possible size for expansion so you can just click Next to continue.



Now you're back with a single volume using all the available, virtual, space for the virtual drive. It's potentially a 20GB drive.



But the .VHDX is now much smaller than it was before. Down from 5GB to just 1.4GB on the hard drive.



### EXPAND

Like shrinking a VHD, it's possible to expand the maximum size of a VHDX but time-consuming.

## Windows 10 for Microsoft Office users

### Virtual Hard Drives - Actions

---

*Avoid the trouble of expanding a VHD by choosing good options in the first place. Make it a Dynamically Expanding drive with a very large maximum size. Remember the .VHDX will only take up the largest physical space it ever needs.*

---

The Hyper/V Manager has a tool to expand a VHDX (Actions | Edit Disk) but not everyone is running Hyper/V so we'll show you a method that works on any Windows computer.

The first part of expanding a VHDX requires digging into a command line tool called Diskpart but before that ...

*Make a full backup of the .VHDX you want to expand. Just in case something goes wrong.*

Unmount / Detach the VHD from Windows.

Open Command Prompt (Admin) by right-clicking on the Start button.

Type `Diskpart` then Enter

These are the two commands you have to run:

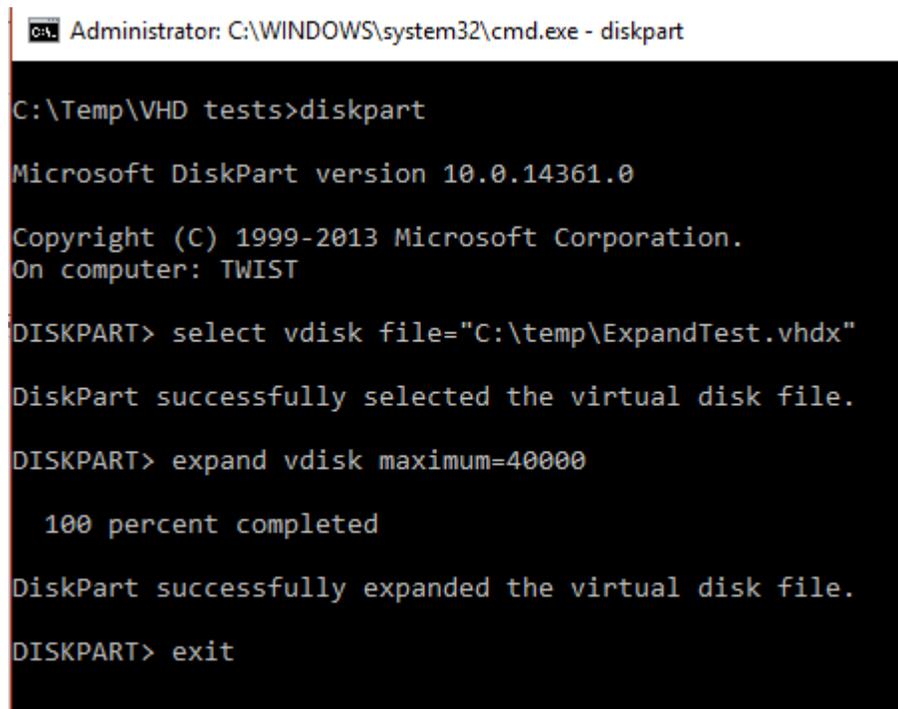
```
select vdisk file="C:\path\to\vdisk.vhdx"
```

Obviously, you have to change the path and file name to match.

```
expand vdisk maximum=40000
```

The maximum= value is in MB. 40,000 = 40GB

Here's how it looks:



```
Administrator: C:\WINDOWS\system32\cmd.exe - diskpart

C:\Temp\VHD tests>diskpart

Microsoft DiskPart version 10.0.14361.0

Copyright (C) 1999-2013 Microsoft Corporation.
On computer: TWIST

DISKPART> select vdisk file="C:\temp\ExpandTest.vhdx"

DiskPart successfully selected the virtual disk file.

DISKPART> expand vdisk maximum=40000

    100 percent completed

DiskPart successfully expanded the virtual disk file.

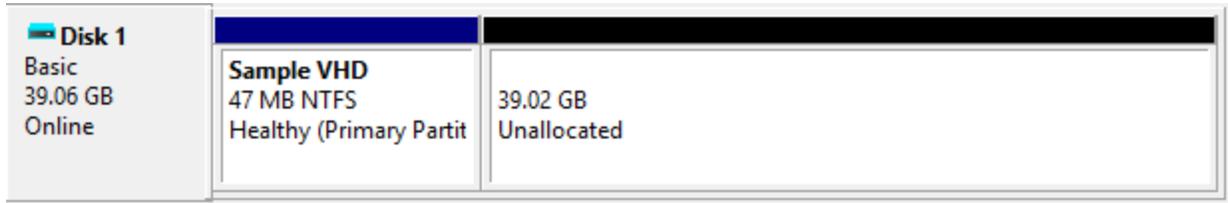
DISKPART> exit
```

# Windows 10 for Microsoft Office users

## Virtual Hard Drives - Actions

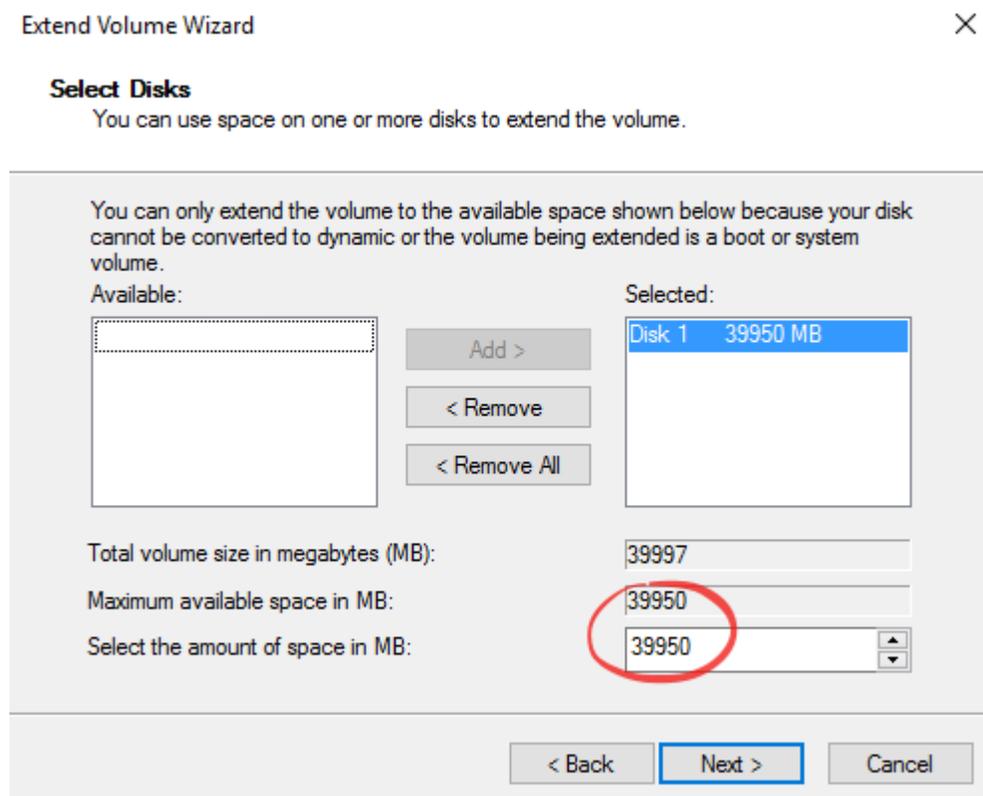
Then EXIT Diskpart and close down the Command Prompt box.

In Disk Management you can see the larger virtual drive.



All that's left is to expand the existing volume into the newly created Unallocated space. This is the same as the last steps mentioned above for shrinking a virtual drive.

Right-click on the volume/partition and choose Extend Volume. The wizard should choose the maximum space for extension so just click Next.



Now all the virtual space is available to the virtual drive.



## Windows 10 for Microsoft Office users

### Virtual Hard Drives - Actions

Note that the actual file size of the .VHDX will remain almost unchanged after expanding the virtual drive. That's because you've expanded the *potential* space available to the virtual drive but a dynamically expanding .VHDX file will only grow in size as necessary.

### CONVERSION

Converting a .VHD file to .VHDX format is possible in the Hyper/V Manager. Use the Actions | Edit Disk command to start a wizard.

If that's not available and it's not a bootable virtual drive, perhaps the most straightforward solution is to make a new VHDX with the same or larger settings and copy files from the VHD to the new VHDX.

### ON STARTUP

If you're using certain VHD's on a regular basis you might want them to be attached automatically when Windows starts. Virtual drives that are the target for File History or used with Storage Spaces should be available as soon as Windows begins.

Strangely, Microsoft hasn't provided a simple way to do this.

First, create a small script for the DiskPart tool to attach the VHDX, then setup that batch file to run the script when needed. Sounds scary? Not really, here's the step-by-step:

Make a text file with Notepad or other plain text editor with these commands, edited to suit your needs.

```
select vdisk file="C:\VHD\Evil Plan.vhdx"  
attach vdisk
```

**Select vdisk** - chooses the VHD/VHDX to open

**Attach vdisk** - attaches the virtual drive

Windows will attach the drive letter last used with that virtual drive.

Save the script as a text file. We save these scripts in the same folder as the VHD/VHDX file itself.

Use the Command Line/DOS box to test your script with the following or similar command:

```
Diskpart.exe /s "C:\VHD\Evil Plan Attach.txt"
```

Right-click on the desktop and choose New | Shortcut then enter the command line you need.

# Windows 10 for Microsoft Office users

## Virtual Hard Drives - Actions



← Create Shortcut

What item would you like to create a shortcut for?

This wizard helps you to create shortcuts to local or network programs, files, folders, computers, or Internet addresses.

Type the location of the item:

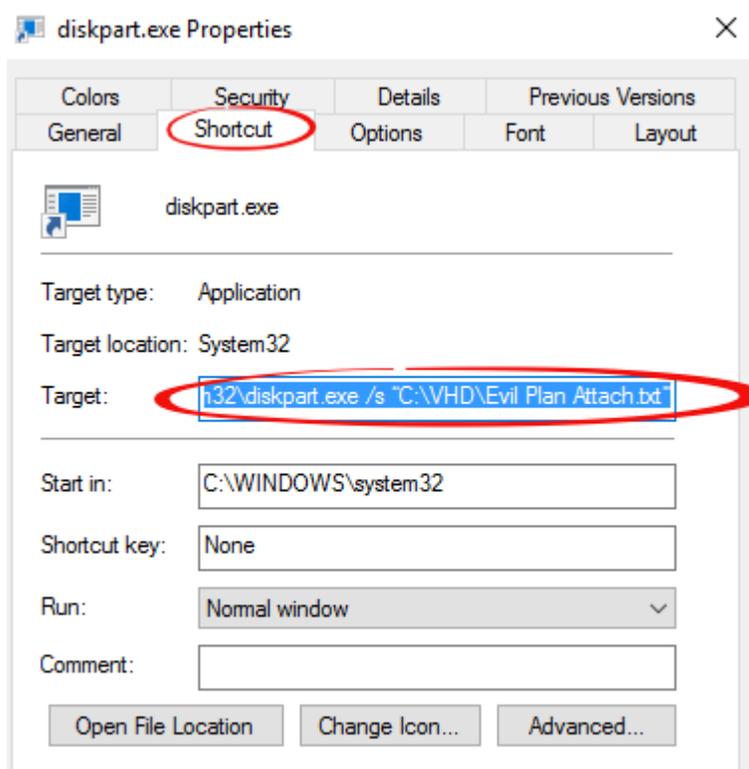
Diskpart.exe /s "C:\VHD\Evil Plan Attach.txt"

Browse...

Click Next to continue.

Click Next then create the shortcut.

Double-click to test it. To change the command, right click on the shortcut, choose Properties and look at the Target line.



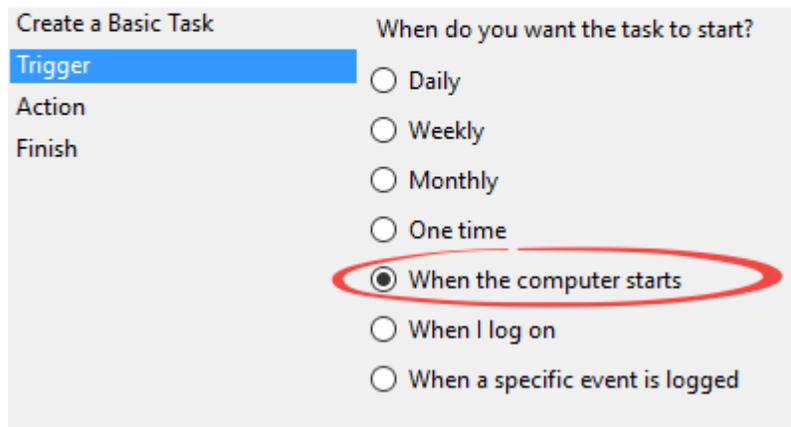
Now you have a shortcut, you can add it to the Task Scheduler to be run when Windows starts. Go to Control Panel | Administrative Tools | Task Scheduler.

## Windows 10 for Microsoft Office users

### Virtual Hard Drives - Actions

Create a new Basic Task with the trigger 'When the computer starts' or 'When I log on' if it's just for you on a multi-user computer.

Create Basic Task Wizard

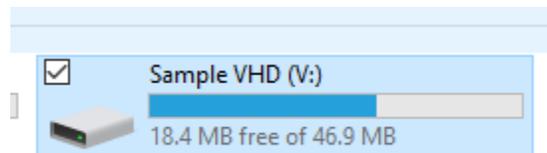


For the Action, start the shortcut you created above.

### WHERE IS IT?

How can you find the location (path) where an attached VHD is located on your physical drives? That's surprisingly difficult.

Let's say you have this virtual drive attached to Windows.

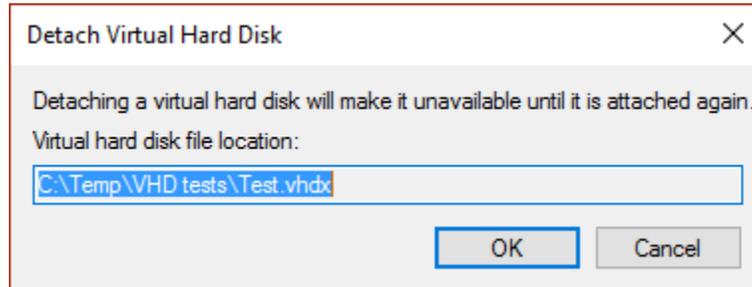


Microsoft has done such a good job of making this virtual drive look like a real drive, there's nowhere obvious to see where the underlying .VHDX file is.

## Windows 10 for Microsoft Office users

### Virtual Hard Drives - Security

But there is a way. Open Disk Management (from the right-click Start Menu), right-click on the virtual drive and choose Detach VHD.



There's the full path and name of the VHDX. Click Cancel to leave the virtual drive attached to Windows.

## FILE HISTORY

### BACKUP OF VHD/VHDX

Don't put VHD/VHDX files into folders that are monitored by File History.

Your File History storage will soon will up. Any change to the virtual drive will cause a copy of the VHD/VHDX to be made by File History and that will create many copies of a large file.

### BACKUP OF VHD CONTENTS

The contents of attached virtual drives can be added to File History (they must be NTFS formatted) so they are monitored and backed up like any other part of your computer.

Go to Settings | Update and Security | Backup | File History | More Options and choose Add Folder.

### USING AS DESTINATION

A virtual drive can be the destination for your File History backups.

This isn't necessary in normal situations because File History itself will offer to move existing backups if you change destinations.

## SECURITY

There are various way to secure a VHD from unwanted access. Two are standard for Windows drives while the other two are old geeky tricks.

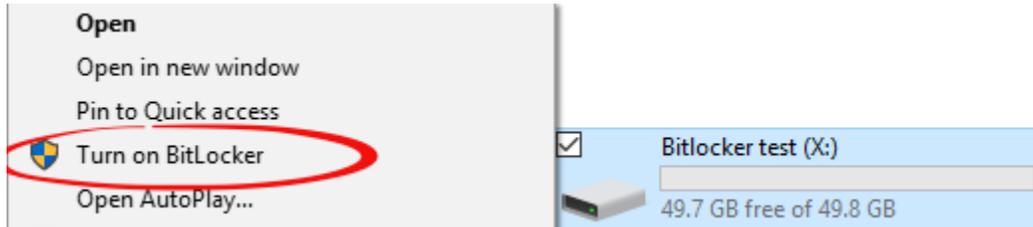
# Windows 10 for Microsoft Office users

## Virtual Hard Drives - Security

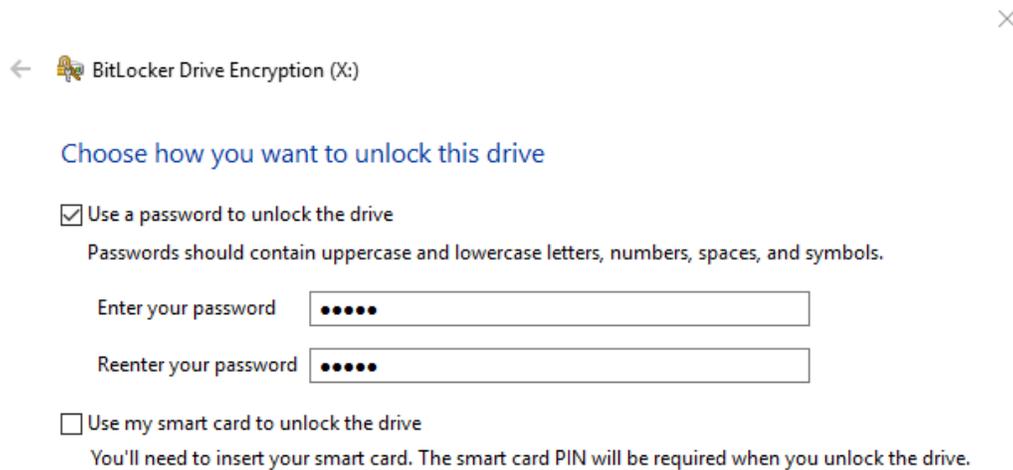
### BITLOCKER

If you want to encrypt and secure the VHD, Bitlocker is the best choice. We'll go through the Bitlocker setup briefly here, for more info see the extensive chapter on [Bitlocker](#) in this book.

Right-click on the attached virtual drive and choose 'Turn on Bitlocker'.



Then choose a password or smart card option.



---

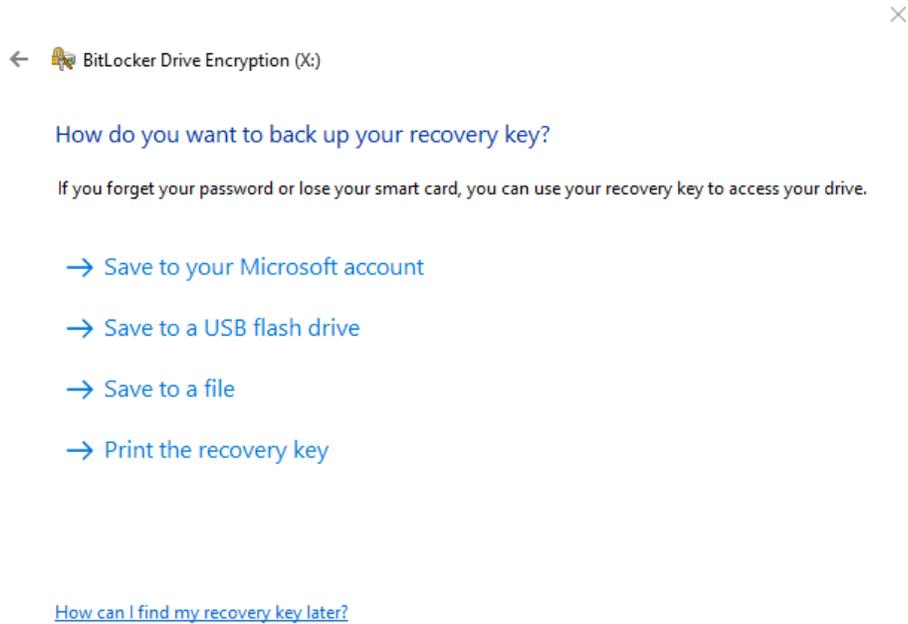
*DON'T lose the password or smart card plus PIN. Yes, there is a recovery key too, but it's a pain to use.*

---

## Windows 10 for Microsoft Office users

### Virtual Hard Drives - Security

Next, save the recovery key, preferably in multiple locations.



In recent versions of Windows 10 you'll see this:



If in doubt, choose 'Compatible mode'.

Choose Next and let Bitlocker encrypt the virtual drive. It won't take long if the VHD is new or mostly empty.

OPENING

Now you have a Bitlockered VHD, using it only requires an extra step.

## Windows 10 for Microsoft Office users

### Virtual Hard Drives - Security

When you attach an encrypted virtual drive it will show in Explorer with a lock icon.



Right-click on the drive and choose 'Unlock drive ...' or just double-click and you'll be prompted for a password.

### BitLocker (X:)

Enter password to unlock this drive.

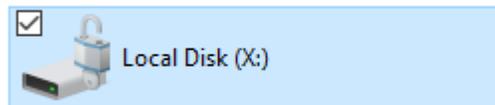
A password input field with a black border. Inside the field, there are ten black dots representing masked characters. A small eye icon is visible on the right side of the field, used to toggle password visibility.

**More options**

**Unlock**

Choose 'More Options' for the recovery key choice.

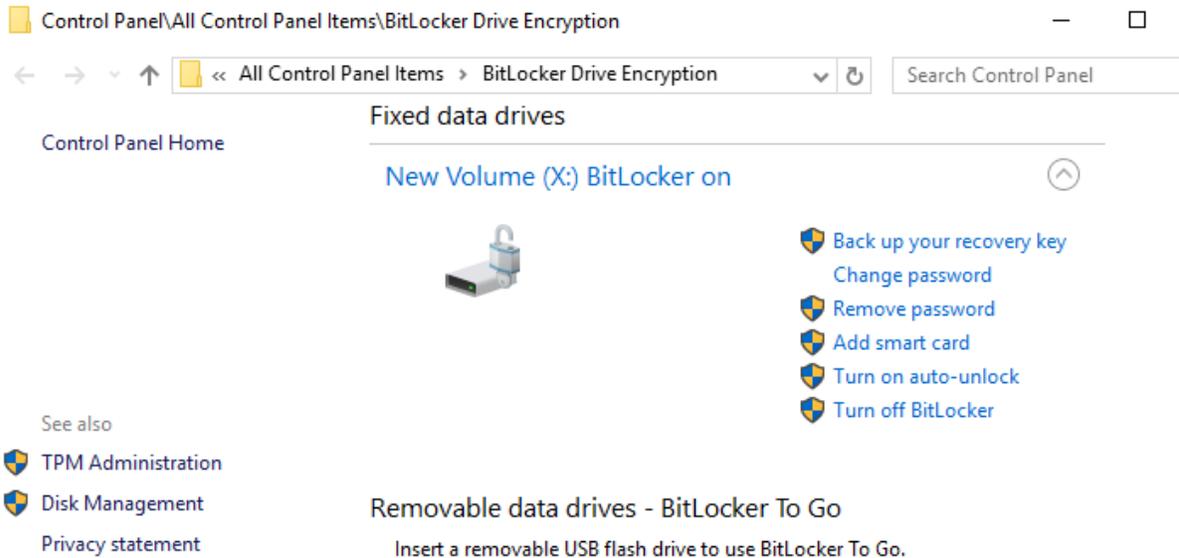
Once unlocked, the drive icon will change.



## Windows 10 for Microsoft Office users

### Virtual Hard Drives - Security

Right-click on the drive icon and choose Manage Bitlocker to open the Control Panel | Bitlocker window.



Here you can backup the recovery key (again), remove the password, add a smart card or turn off Bitlocker for the drive.

**Turn on auto-unlock** is the interesting option here. You can set Windows to automatically unlock the VHD when attached but only if the physical drive (where the VHD is saved) also has Bitlocker protection.

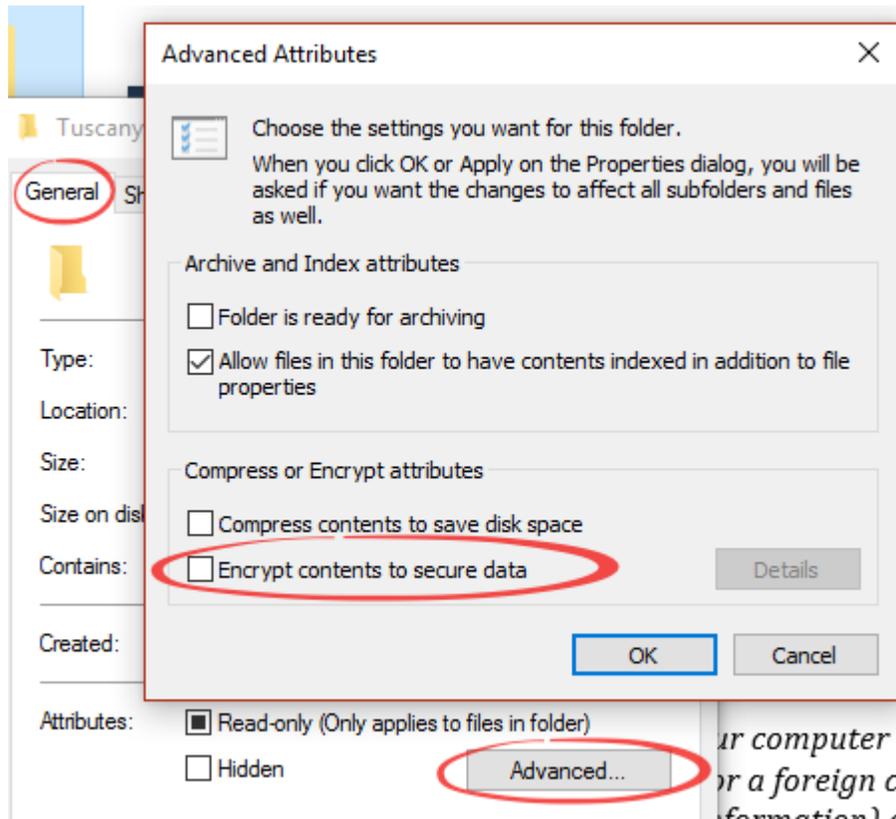
### ENCRYPTED FILE SYSTEM

Encrypted File System is an older method of protecting folders in Windows.

## Windows 10 for Microsoft Office users

### Virtual Hard Drives - Security

It's available in file and folder Advanced Properties as 'Encrypt contents to secure data'.



It's still available in Windows and in VHD's but it's not used much because it's less secure than Bitlocker.

### RENAMING

There's no hard rule that says a virtual hard drive needs a .VHD or .VHDX extension. If you want to hide a virtual hard drive on your physical drive, you can rename the unattached file.

---

*Why do this? If your computer is being checked by someone – for example incoming Customs officials for a foreign country. You might want to hide the presence of data (e.g. commercial information) on your computer.*

---

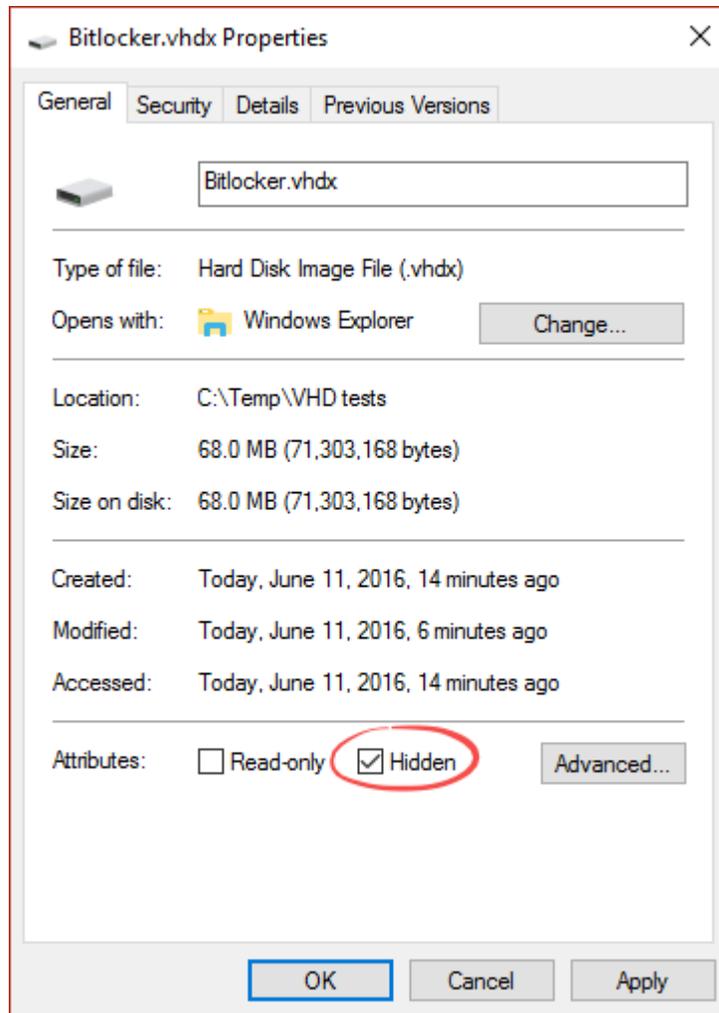
Rename the virtual drive from say 'Contracts.VHDX' to '3sder4vklw.tmp' or some other obscure name. The usual VHD shortcuts won't work unless you put the .vhdx extension back into the file name or attach the VHD directly via Disk Management.

## Windows 10 for Microsoft Office users

### Virtual Hard Drives - Security

#### HIDING

Another old trick is to mark the VHD as hidden. This should hide the file from any quick look at the computer.



If the VHD is big, a careful check will notice that a large amount of space is being used but unaccounted for. A giveaway that something is hiding on the drive.

# STORAGE SPACES

Windows 8 introduced a new and powerful way to arrange your hard drive storage – Storage Spaces. In Windows 10 there's been a few very important improvements that make Storage Spaces a lot more acceptable:

- **Prepare for removal** will move all data from a physical drive so you can remove it from the pool without data loss.
- **Optimize** will balance use across the physical drives.
- **Support for REFS** is, surprisingly, added in Windows 10 though it's probably not necessary for most people. Stick with NTFS for drive formatting.

The main benefit for Office users is more reliable storage. With 'two-way mirroring' all your files are automatically saved twice, on two different drives. If one drive fails, the other continues working automatically. Other resiliency options require more physical drives but offer far greater protection from drive failure.

Another benefit is expandability, you can add more physical drives to a storage space and Windows will handle the details of where to store files. No more moving files between drives as needs and capacity changes.

The Storage Spaces is included in all Intel chip based versions of Windows including Professional and Enterprise. It's also available in Windows Server 2012 and was based on a similar feature in the now defunct Windows Home Server range.

It's good but takes a bit of getting used to some concepts that, until now, have been kept from us mere humans, so that's how we'll start this chapter.

Your hardware needs will change if you make best use of the Storage Spaces feature so we've added some suggestions and money saving tips.

We'll work step-by-step through a common scenario with two storage spaces. A two-way mirror for Office documents, databases etc. plus a parity space for less frequency changed files like music, photos and videos.

Switching between different types of resiliency isn't easy so we'll also look at that in detail as well as removing a drive and using an existing hard in Storage Spaces.

Finally, we'll have a brief look at other Windows features that can be used with Storage Spaces to extend their usefulness.

## SPACES VS. DRIVES

Most important is the idea of separating the 'place' where you save files in Windows from the actual physical drives.

# Windows 10 for Microsoft Office users

## Storage Spaces - Definitions

Most of us now save files to a drive – Drive C: Drive D: and so on. The place we save a file to is a physical drive on our computer.

With Storage Spaces that changes; a Storage Space isn't a physical drive but a virtual location created by Windows that you see in Explorer. Behind that storage space are two or more physical drives. The drives can be different types – internal or externally connected – it doesn't matter to the user because they see only the storage space.

That should make things easier for you. When you rearrange physical drives on a computer you should not have to also rearrange where files are stored, your Office favorites or recent files. All those save details are unchanged because they can point to a Storage Space not specific physical drives.

It also means the available space can be expanded or shrunk (by adding/removing physical drives) without changing the locations you save files or moving files between drives.

This isn't an entirely new concept. If you've ever saved to a network location it's a similar thing. When you save to a location like `\\DAGG\Fred` you don't know what physical drive or drives the file is stored on. The server can be changed entirely but the path you use remains unchanged.

Cloud storage is another example. When you save files to OneDrive, Dropbox or other online services, you have no idea where the files are stored. They could be on a computer down the road or half a world away. It doesn't matter where the files are stored, as long as you know the computer address to locate them.

Want to switch out that old 1TB drive for a 3TB one? If you've used Storage Spaces with resiliency you can simply remove the old drive, add the new one, change some Windows settings and your work is done. Little or no moving of files needed. In Windows 10 this is made a lot easier with the 'Prepare for removal' option.

## DEFINITIONS

Storage Spaces has a lot of special terminology you need to know. Some of the terms are Microsoft's effort to give 'human' names to computer terminology that's been around for years.

### PHYSICAL DRIVES

The actual hardware connected to your computer – either internal or external drives. USB, SAS (Serial Attached SCSI), SATA and eSATA drives are all supported.

Storage Spaces can't be used with network attached storage nor can it be linked to the boot drive (usually Drive C:)

# Windows 10 for Microsoft Office users

## Storage Spaces - Definitions

### POOL

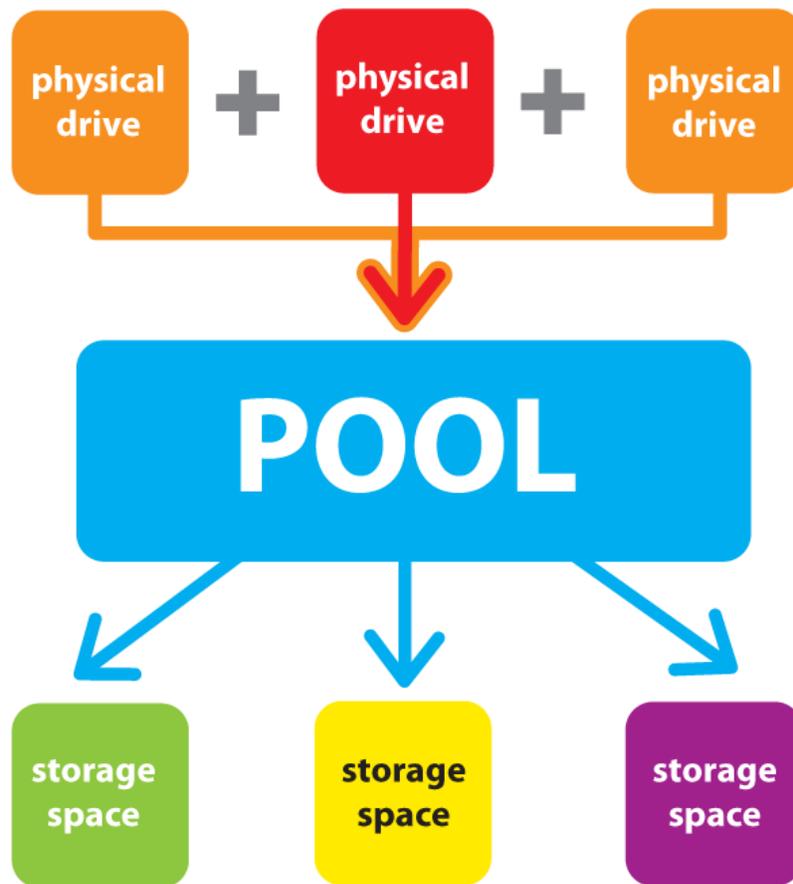
This is the collection of physical drives. Each pool is then separated into one or more spaces.

### POOL CAPACITY

Pool Capacity is the total available disk space across physical drives in the pool. This is shown on the Manage Storage Spaces dialog but is misleading because it doesn't take into account the overhead required for the resiliency setting.

### SPACES OR STORAGE SPACES

These are the 'virtual drives' that you see in Explorer. Each space has a name, a drive letter and a maximum possible size (which can and should be much larger than available disk space to allow for future expansion).



That sounds unnecessarily complicated – it would be easier to understand if the physical drives were directly linked to the storage spaces. However, the concept of a 'pool' let's

# Windows 10 for Microsoft Office users

## Storage Spaces - Definitions

physical drive space be automatically applied to storage spaces (i.e. virtual drives) as required.

It also means that free space can be automatically applied to whichever storage space needs it without changing the physical drive setup.

### THINLY PROVISIONED

A particularly geeky term which means that the supposed size of the Storage Space isn't fully supported by the physical drives currently available. You can (and should) define a large storage space knowing that the current physical drives don't add up to the total. That might seem strange but it gives you expansion room for the future.

### RESILIENCY

Storage Spaces save files with different types of what Microsoft calls 'resiliency'. These are different ways to save files to prevent loss due to a drive failure.

You might be familiar with resiliency using different terms, in particular the RAID numbering. Other companies, including Microsoft, have the same options but with different names.

Windows itself, even in Windows 10, have resiliency options with different names in Administrative Tools | Disk Management.

Microsoft's version of Resiliency is made up of two concepts:

#### MIRRORING

Mirroring is where each file is saved more than once – each copy is saved to a different physical drive. If a drive fails, the others continue without interruption.

#### PARITY

When you save a file, redundancy information is saved to another physical drive. If the original drive fails, the file can be reconstructed using the redundancy data.

Parity uses less disk space than mirroring but mirroring is better for files that are saved or updated regularly. A common setup would be mirroring for documents and databases and parity for pictures, videos and music which are updated less often.

#### RAID

What about RAID? Microsoft is firm that Storage Spaces are different from the industry standard for mirroring and parity called RAID. While there are differences in implementation, for most people they are irrelevant. If you're familiar with RAID we've included the equivalent levels in the list below.

# Windows 10 for Microsoft Office users

## Storage Spaces - Hardware

Here's an explanation of the Storage Spaces naming for resiliency with the equivalent names in RAID and other parts of Windows.

### SIMPLE

This is a straight-forward saving of files – once only - with no copying or redundancy of any kind.

### TWO-WAY MIRROR

Mirroring with all data saved twice to separate physical drives. This protects you from losing data if one of the drives fails.

RAID level 1

Windows Disk Management: Mirrored Volume

### THREE-WAY MIRROR

Mirroring with all data saved three times across FIVE physical drives. This protects you data loss if two of the drives fail at the same time.

RAID level 1 across three disks

Windows Disk Management: Mirrored Volume across three disks

### PARITY

Files are saved with redundancy/parity information saved to other physical drives in the pool. This needs at least three drives but more can be used to give greater redundancy.

RAID level 5

Windows Disk Management: RAID-5 volume

## HARDWARE

Storage Spaces will get greater use over time as drives becomes more available and less costly. Until recently the fastest hard drive options were internal drives which are harder to install. Now we have eSata and USB 3.0 external connections which make it easier to plug-in an external drive with speeds as good as or even better than internal drives.

eSata connections are external connections to the SATA system used by most modern hard drives. Speeds up to 3 Gbit/s or sometimes 6 Gbit/s are possible.

USB 3.0 is usually faster with speeds up to 5 Gbit/s theoretically possible. USB 3.0 sockets will accept older USB devices but only get the faster speeds when connected to a USB 3.0 device. Similarly, USB 3.0 devices can plug into USB 2 sockets just with the v2.0 speed limits. Windows 8 was the first Windows to support USB 3.0 natively.

## Windows 10 for Microsoft Office users

### Storage Spaces - Hardware

SAS means Serial Attached SCSI. These drives are rarer in consumer machines but are compatible with Storage Spaces.

**Note:** Firewire drives are NOT listed as compatible with Storage Spaces. They aren't explicitly named as not compatible either, but it's best to stick with the known compatible drives.

Storage Spaces can 'mix and match' drives in ways that traditional RAID systems can't. You can mix internal and external drives, mix connection types and mix drives of different capacities.

### BUYING TIPS

Here are some tips on how to get the best value from your new drive purchases.

Remember that resiliency needs more disk space to do its magic. If you have 400GB of documents and want two-way mirroring then, in theory, you'll need at least two 400GB drives. Three-way mirroring needs theoretically 5 x 400GB drives. Parity needs at least three drives.

In practice you should get drives with plenty of space for expansion. In the above example you'd get, as minimum, 500GB drives because that's the next largest size commonly available. Given the price per GB for drives these days, you're better off buying at least 1TB (1024GB) drives or larger.

Most of us are collecting more and more space hungry data, some pictures and music but also the hard drive gobbling video files. These can all be handled efficiently by Storage Spaces using the parity option.

A very rough calculation is:

1. Work out how much space you use now.
  - Remember to include anything you have in existing external storage or CD/DVD/Blu-ray disks that you'd like to include in Storage Spaces for easier or centralized access.
2. Double it to allow for future needs – triple or more if you think that's necessary.
  - In our experience, most people grossly UNDERestimate the amount of disk space they need.
    - Office documents take up less space these days because the 'new' Office 2007 formats are compressed.
    - On the other hand, pictures and videos are more numerous and take up a lot more space as the resolution improves.
3. Work out the physical drives needed:

## Windows 10 for Microsoft Office users

### Storage Spaces - Hardware

- For Mirroring, the size you arrived at in step 2 is the minimum size for each drive to buy. Two drives larger than the space in step 2 for two-way mirroring, five for three-way mirroring.
  - For Parity the size in step 2 it depends on the number of drives allocated.
    - For the default 3 disk parity you need at least 50% more space than the data saved. 5 disk parity means you need 25% more space on the drives.
    - In other words, the more drives in parity use means less loss of disk space to redundancy.
4. When buying remember that with the low cost of drives (on a per GB or per TB basis) it's hard to go wrong by buying larger capacity drives.

Since Storage Spaces can handle different capacity drives you can use existing drives in conjunction with new drives. Over time you can replace the older drives with newer ones in the same pool.

### Know what you have

It sounds silly but it's amazing the number of people who go shopping for new drives without knowing what connection ports their computer has! Get out the manual, look at the back and front of the computer or ask your local computer nerd for advice.

### USB v2 sockets



### USB v3 sockets

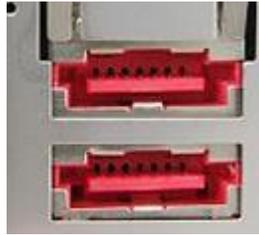


USB 3 sockets usually have a blue plastic piece in the center.

# Windows 10 for Microsoft Office users

## Storage Spaces - Hardware

### eSata sockets



We strongly recommend you buy drives with USB 3.0 support even if your current computer only has USB 2 sockets. Your next computer will almost certainly have USB 3 sockets and then you'll benefit from the faster speed. In the meantime, the USB 3 drive will work (albeit slower) on the USB 2 connection. The cost difference between USB 2 and USB 3 drives is now very small, if any.

There are plenty of external drives available for sale. These come in a shell with a separate power supply and can be found in any computer store.

Storage Spaces let you 'mix and match' drives more easily than in the past so it might be worth considering a hard drive dock instead. A dock lets you plug-in a regular 'bare' hard drive without covers or screws. You can more easily switch drives, in particular replace a drive with a larger one as your needs expand.



Until now hard drive docks are mostly used for backups which can be removed and stored elsewhere. Storage Spaces in Windows expands that use, especially with docks that can hold two or more drives at once.

## Windows 10 for Microsoft Office users

### Storage Spaces - Step by Step



Docks with more than two slots are comparatively more expensive than 1 or 2 slot devices at the moment, but that will change over time. We hope that multi-slot docks will become more common as suppliers realize the potential market has increased a lot with the arrival of Storage Spaces.

Get a hard drive dock with both USB 3.0 and eSata support so you have multiple connection options going forward. Some docks also serve as a USB hub or have slots for memory sticks as well.

'Bare' or internal hard drives for docks are usually cheaper than the same capacity in a fully-enclosed external drive. Therefore, docks can work out to be cheaper as well as more flexible. Shop around online for the best deal on bare drives using reputable retailers.

Whatever type of drive you buy, 'bare' or enclosed, try to compare on a per Terabyte basis. Divide the price by the number of TB to get a dollar figure to compare with other offerings. Most likely you'll find that the larger drives are better value per TB except perhaps for the newest and largest drives that might be sold as a premium.

Of course, there are other factors like the speed of the drive, the connection type, the number of available connections on your machine and the type of resiliency you want (which is controlled by the number of drives available).

## STEP BY STEP

Here are some step-by-step examples of Storage Spaces in action.

# Windows 10 for Microsoft Office users

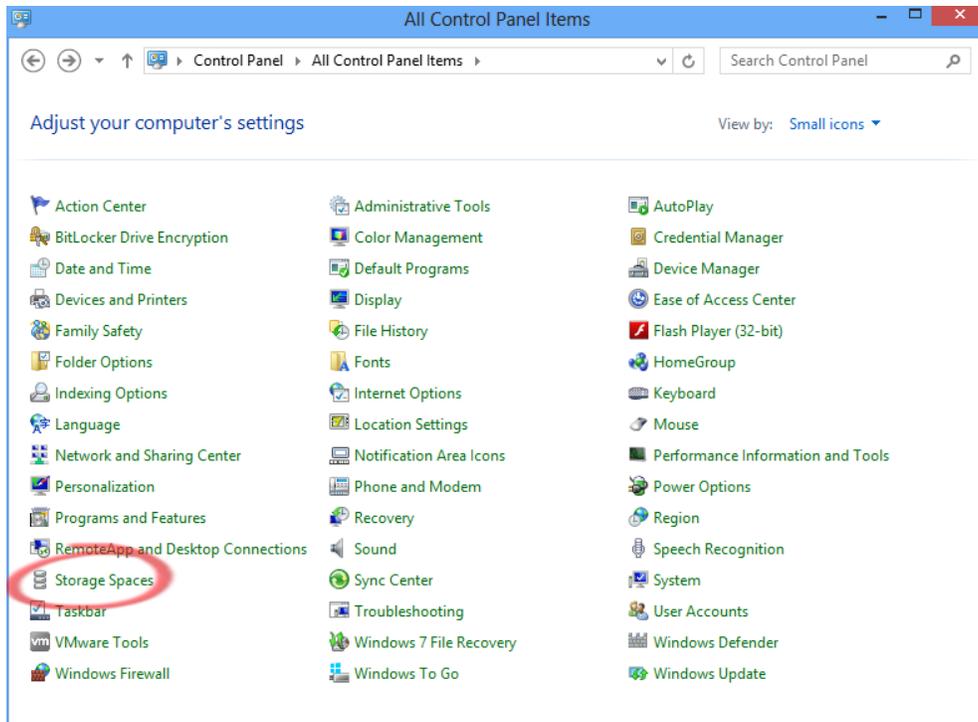
## Storage Spaces - Step by Step

### MAKE A POOL

Let's dive into Storage Spaces with a simple but common situation. You have two drives that you want to save files with extra reliability in case one fails. That's called 'two-way mirroring' in Windows Storage Spaces. Mirroring (two or three way) is the best choice for documents, databases and any other files that are saved and changed on a regular basis.

Attach the two drives to the computer (it can be internal or external connection).

Go to Control Panel | Storage Spaces.



Click on 'Create a new pool and storage space'.

## Windows 10 for Microsoft Office users

### Storage Spaces - Step by Step

Storage Spaces will handle most types of drive and they don't have to be formatted. In fact, it's better if the drives have no data on them.

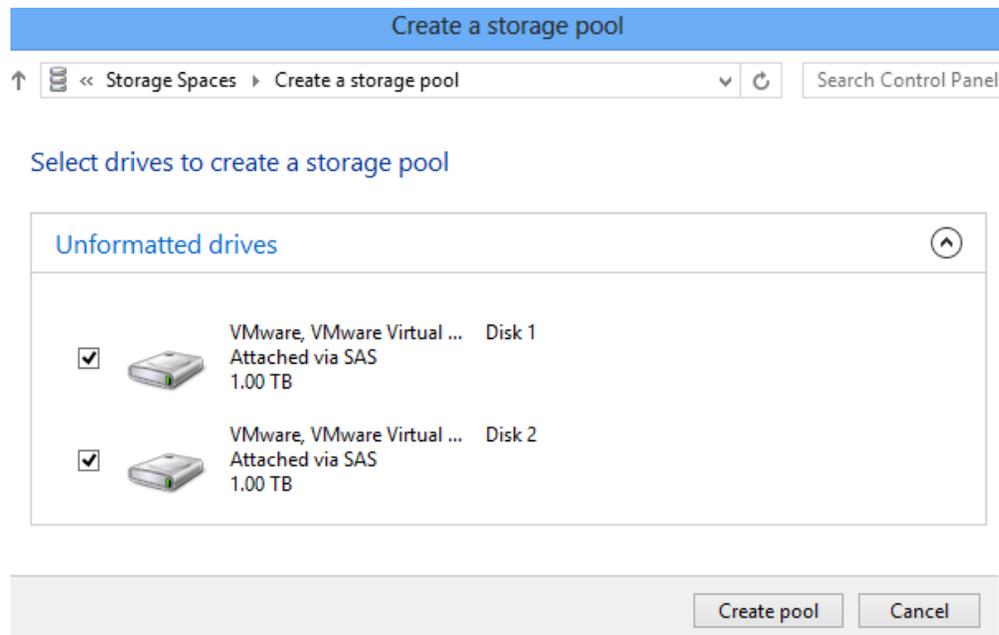
---

#### **WARNING**

*Storage Spaces will totally erase ALL data on the drives when you add them to a pool.*

---

In this case Windows detects two unformatted drives – each 1TB.



(You'll see that we're using virtual drives (VHD or VHDX) drives in all these examples. That's the easiest way for us to demonstrate the variety of Storage Space options. In the real world you'd use larger and physical drives but it's possible to use virtual drives too).

Storage Spaces take over an entire physical drive. If you don't want that, make a virtual drive on the physical drive and add the virtual drive to the pool. See the chapter on [Virtual Drives](#) for more information.

The drives are pre-selected with 'ticks' on the left. If you have formatted drives they are listed in a separate section below the unformatted ones. Most consumer external drives are pre-formatted so even a brand new model will show up as 'formatted'.

---

#### **LAST CHANCE!**

*Remember that Storage Spaces will totally erase a drive, even a formatted one. Check any formatted drive for anything you might want before creating a pool. New drives might have supplied utilities that you should copy before erasure.*

---

# Windows 10 for Microsoft Office users

## Storage Spaces - Step by Step

Click on 'Create pool' to continue.

### ADD A TWO-WAY MIRROR

After creating a new pool, you'll be taken the Create Storage Space dialog for the next step.

If you're creating a new space in an existing pool choose 'Create a Storage Space' from Control Panel | Storage Spaces.

Here's the defaults for the next, important screen:

Control Panel\All Control Panel Items\Storage Spaces\Create a storage space

Enter a name, resiliency type, and size for the storage space

Name and drive letter

Name: Storage space

Drive letter: J:

File system: NTFS

Resiliency

Resiliency type: Two-way mirror

**i** A two-way mirror storage space writes two copies of your data, helping to protect you from a single drive failure. A two-way mirror storage space requires at least two drives.

Size

Total pool capacity:	21.2	GB
Available pool capacity:	17.2	GB
Size (maximum):	6.00	GB
Including resiliency:	12.0	GB

**i** A storage space can be larger than the amount of available capacity in the storage pool. When you run

Create storage space Cancel

#### NAME

The name for the Storage Space. Change this to something that makes sense to you.

#### DRIVE LETTER

Each Storage Space has a drive letter connected to it. Windows has chosen the next available drive letter but you can change that.

#### FILE SYSTEM

Choose either NTFS (the default) or the next generation Windows file system REFS.

## Windows 10 for Microsoft Office users

### Storage Spaces - Step by Step

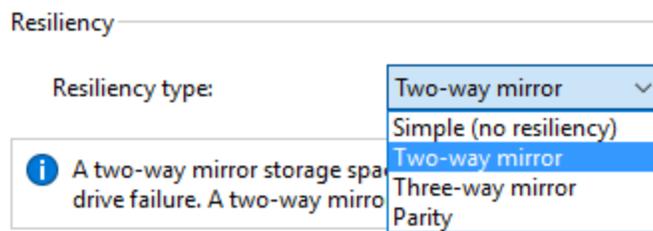


Unless you have a specific reason and know what you're doing, stick with NTFS.

#### RESILIENCY

This is the type of storage used across the physical drives.

- Simple
- Two-way mirror
- Three-way mirror
- Parity



We've covered these options in detail [above](#). You can't change the resiliency type for a storage space once it's created.

For this example, we've chosen 'Two-way mirror' which saves all data twice – once on each physical drive.

#### SIZE

What you choose might defy logic a little; keep in mind that the Storage Space size is only loosely related to the physical drives now available.

The maximum size should allow for future expansion both expected and unexpected.

For this example, we've chosen a deliberately large maximum size of 63 TERAbytes. To fully provision that storage space you'd need 126TB of physical drive space (because all of the 63TB of data is saved twice with two-way mirroring).

You probably won't go to such extremes but keep in mind that a large Storage Space maximum does no harm and is better than running out of space later.

The Windows defaults allow for future expansion but not shrinking a storage space size.

# Windows 10 for Microsoft Office users

## Storage Spaces - Step by Step

Here's the settings we'll go with:

The screenshot shows the 'Create a storage space' window in Windows 10. The title bar is blue and says 'Create a storage space'. Below the title bar is a breadcrumb navigation: '<< Storage Spaces >> Create a storage space'. There is a search box for the Control Panel. The main heading is 'Enter a name, resiliency type, and size for the storage space'. Under 'Name and drive letter', the 'Name' field contains 'Documents' and the 'Drive letter' dropdown is set to 'S:'. Under 'Resiliency', the 'Resiliency type' dropdown is set to 'Two-way mirror'. An information box explains: 'A two-way mirror storage space writes two copies of your data, helping to protect you from a single drive failure. A two-way mirror storage space requires at least two drives.' Under 'Size', the 'Total pool capacity' is 1.99 TB, 'Available pool capacity' is 1.99 TB, 'Size (maximum)' is 63 TB, and 'Including resiliency' is 126 TB. Another information box states: 'A storage space can be larger than the amount of available capacity in the storage pool. When you run low on capacity in the pool, you can add more drives.' At the bottom are 'Create storage space' and 'Cancel' buttons.

When you're happy with the settings, click on 'Create storage space'.

Windows will create the storage space and format the physical drives (the latter is what takes up most of the time). When it's done the drive will appear new to Windows and the pop-up will appear top right:

The new drive appears in Explorer:



Note that the Storage Space drive shows as having the maximum size specified even though the available physical space is considerably less than that.

# Windows 10 for Microsoft Office users

## Storage Spaces - Step by Step

And, of course, the Manage Storage Spaces page for the new space. Here you can see the Storage Space setup and change settings.

### Manage Storage Spaces

Use Storage Spaces to save files to two or more drives to help protect you from a drive failure. Storage Spaces also lets you easily add more drives if you run low on capacity. If you don't see task links, click Change settings.

[Change settings](#)

Storage pool Okay

Using 3.50 GB of 1.99 TB pool capacity Create a storage space  
Add drives  
Rename pool

Storage spaces

Documents (S:) ✓ Okay View files  
Change  
Delete  
Two-way mirror  
63.0 TB  
Using 2.50 GB pool capacity

Physical drives

eSata 1TB ✓ Okay Rename  
Attached via SAS  
0.17 % used  
Providing 0.99 TB pool capacity

USB 3 1TB ✓ Okay Rename  
Attached via SAS  
0.17 % used  
Providing 0.99 TB pool capacity

*Keep in mind that the 'free space' on this dialog is deceptive. It does NOT calculate the capacity really available with the physical drives and chosen resilience. If the physical drives are of different sizes the available capacity might not be what is shown.*

Now you can copy / move files to the Storage Space.

### ADD A PARITY SPACE

Parity storage works best for files that don't get changed as often as Office documents and databases. That usually means photos, videos and music files but could include long term archive files too.

# Windows 10 for Microsoft Office users

## Storage Spaces - Step by Step

Adding a parity storage space needs at least three drives in the pool.

From Control Panel | Storage Spaces click Create a Storage Space.

Enter a name, resiliency type, and size for the storage space

Name and drive letter

Name:

Drive letter:

Resiliency

Resiliency type:

**i** A parity storage space writes your data with parity information, helping to protect you from a single drive failure. A parity storage space requires at least three drives.

Size

Total pool capacity:	3.98	TB
Available pool capacity:	3.98	TB
Size (maximum):	<input type="text" value="63"/>	<input type="text" value="TB"/>
Including resiliency:	94.5	TB

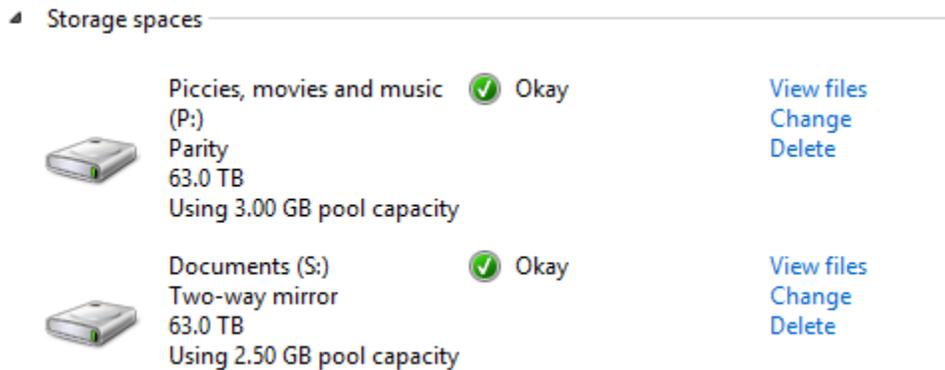
**i** A storage space can be larger than the amount of available capacity in the storage pool. When you run low on capacity in the pool, you can add more drives.

Choose a name and drive letter that suit you. Select 'Parity' as the resiliency type. The maximum size, as always, should be larger than you expect the space to need for the foreseeable future. Click on 'Create storage space' to end.

# Windows 10 for Microsoft Office users

## Storage Spaces - Step by Step

Once the space is created you'll see in the Manage Storage Spaces dialog and it'll appear as a new drive in Explorer.



### SWITCH TO PARITY

Say you decide that parity resiliency is more appropriate than two-way mirroring. That's possible with Storage Spaces but you have to create a new storage space to do it.

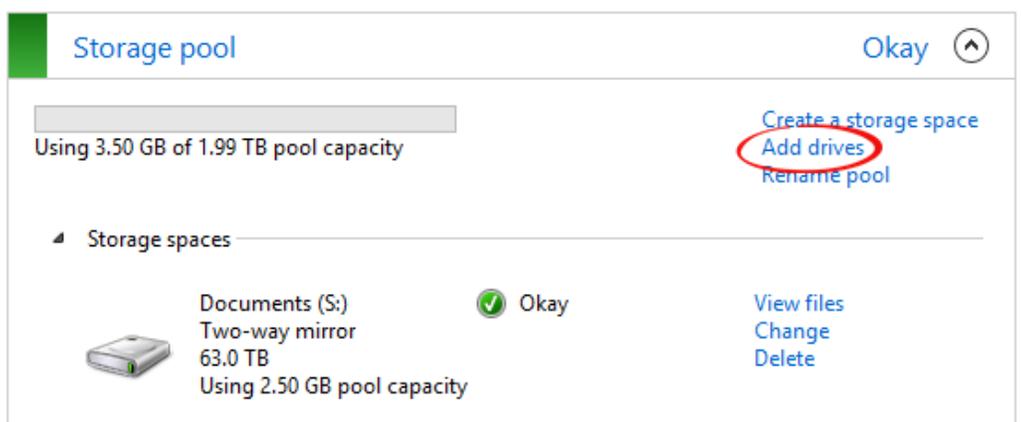
---

*You can't change an existing spaces resiliency type. The workaround is to make a new space with a different type of resiliency then move all the data across.*

---

Parity needs at least three drives so get another physical drive, at least as large as the two current drives used for mirroring. Plug it into the computer.

From Control Panel | Storage Spaces click 'Add Drives' to add the drive to the pool.

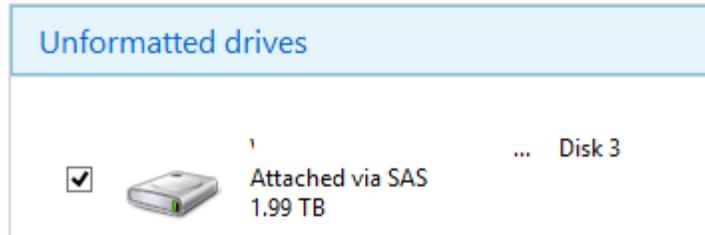


Windows should detect the additional drive and automatically offer it as the new drive to be added.

# Windows 10 for Microsoft Office users

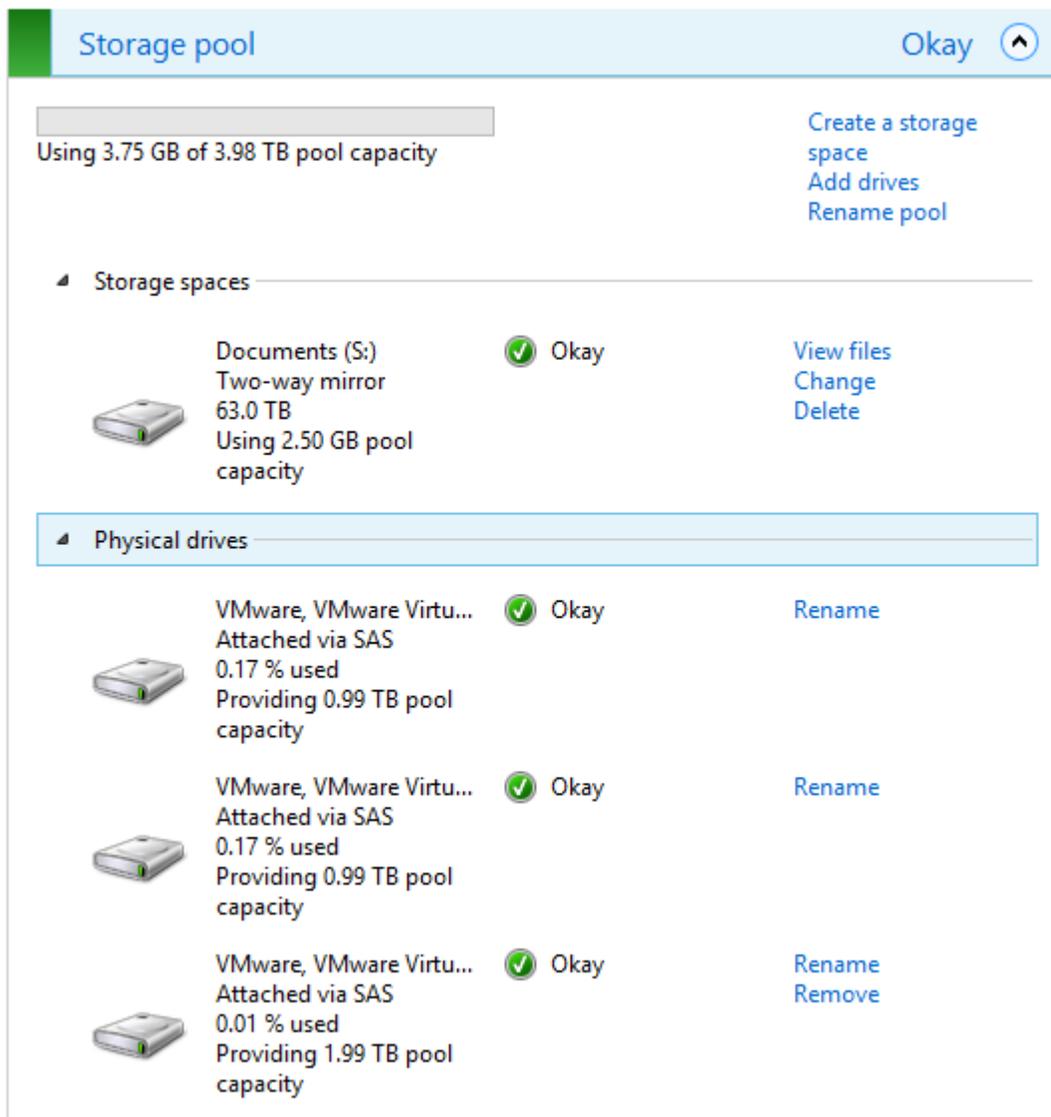
Storage Spaces - Step by Step

## Select drives to add to the storage pool



If not, you might have to select from the formatted drives available.

Click on 'Add Drives' to continue. Once added to the pool you'll have the same storage space but another drive in the pool.



The next step is tricky and depends on the percentage of physical disk space available. You don't want to lose data during the switch to a parity setup.

# Windows 10 for Microsoft Office users

## Storage Spaces - Step by Step

*It's highly recommended that you make a separate copy of the existing storage space to a location NOT used by the Storage Spaces feature ... just in case.*

Click on 'Create a Storage Space' and setup a new space with parity:

Enter a name, resiliency type, and size for the storage space

Name and drive letter

Name:

Drive letter:

Resiliency

Resiliency type:

**i** A parity storage space writes your data with parity information, helping to protect you from a single drive failure. A parity storage space requires at least three drives.

Size

Total pool capacity: 3.98 TB

Available pool capacity: 3.98 TB

Size (maximum):

Including resiliency: 75.0 TB

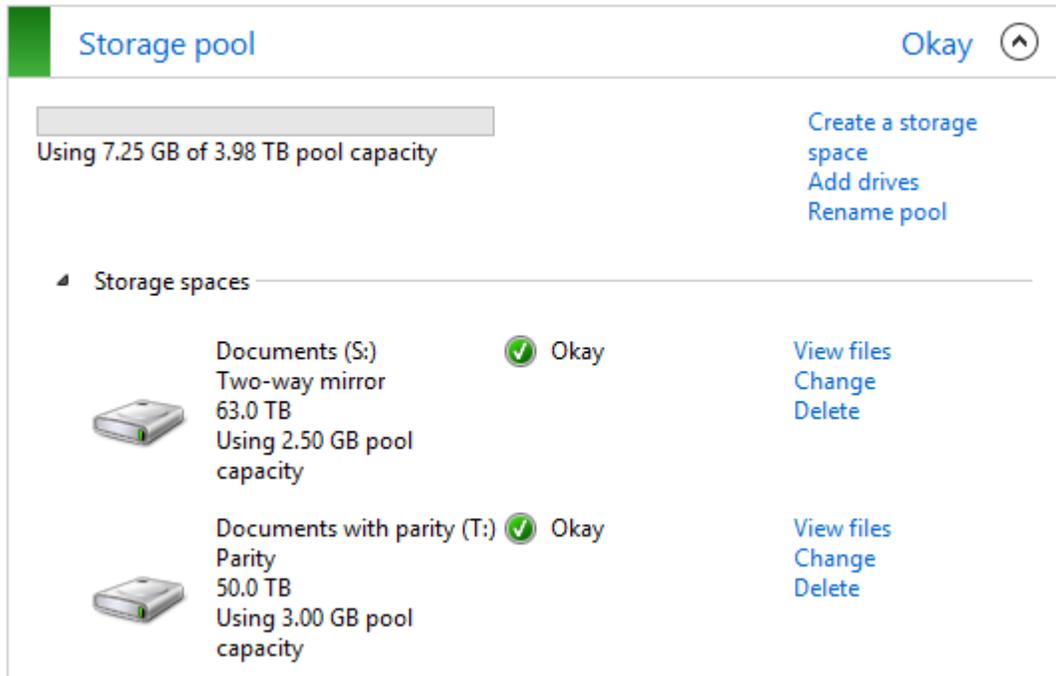
**i** A storage space can be larger than the amount of available capacity in the storage pool. When you run low on capacity in the pool, you can add more drives.

The drive letter can be a temporary one. You can restore the drive letter used for the files at a later stage.

Click 'Create Storage Space' when you're done. Now you have two storage spaces sharing a pool of three physical drives.

# Windows 10 for Microsoft Office users

## Storage Spaces - Step by Step



That's the flexibility of Storage Spaces; it can reallocate available drives to new purposes.

(We could add the parity space partly because there was so much unused space in the pool. If the existing storage spaces were using up too much of the physical drives, there'd not be enough left to accommodate the new parity space. That's why, in some cases, you'll have to offload data from the storage spaces then put it back on when the new spaces are in place.)

Next move all the data from the old two-way mirror to the new parity space. If you haven't already, take a backup copy just in case something goes wrong.

Finally, delete the old storage space. Only do this when you're sure, absolutely sure, absolutely sure with sugar on top that all the data is safe and complete on the new storage space.

Once deleted, you can go into the parity storage space settings and switch the drive letter to the one used by the old space. This will retain compatibility with the paths and folders saved in Office.

### SWITCH TO THREE-WAY MIRROR

Changing from two-way mirror or parity to three-way mirror is much the same as [Switch to Parity](#) except that you need at least five physical drives in the pool.

# Windows 10 for Microsoft Office users

## Storage Spaces - Step by Step

### DELETE A STORAGE SPACE

Deleting a storage space is easy but remember that ...

---

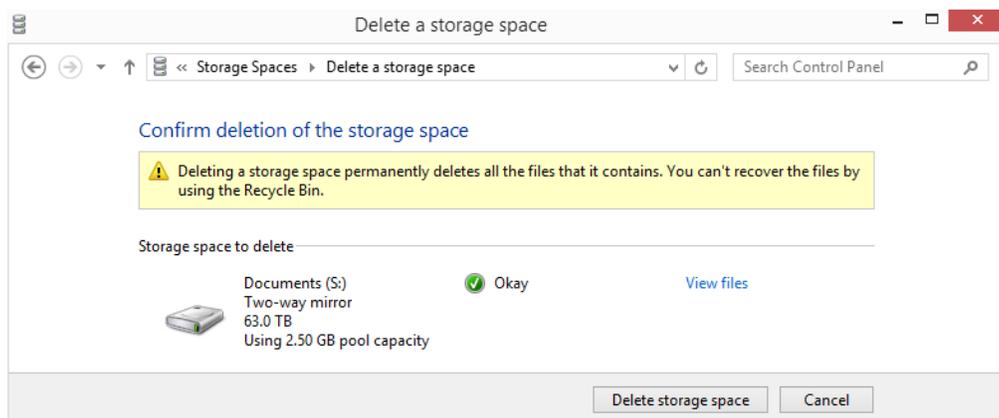
*Deleting a storage space will delete all the data saved on it.*

---

From Control Panel | Storage Spaces choose Delete next to the storage space to be removed.

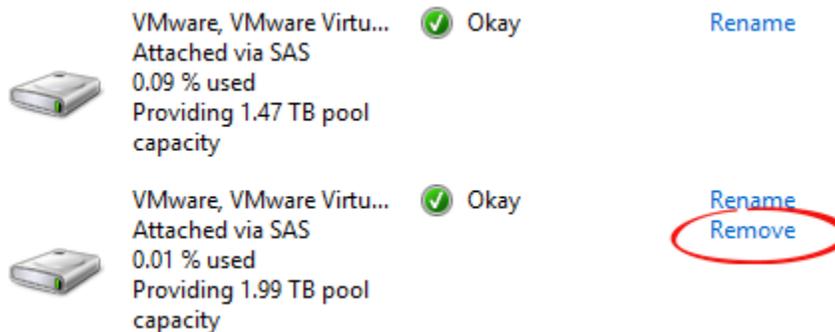


Then, if you're really sure about the deletion, click on Delete Storage Space



### REMOVING A DISK

In the list of physical disks, only disks not essential for redundancy have a 'Remove' link next to them.



# Windows 10 for Microsoft Office users

## Storage Spaces - Step by Step

Here's what happens when we physically remove one drive from the two storage space scenario we created above without 'telling' Windows first.

The screenshot shows the Windows Storage Spaces management console. It is divided into two sections: 'Storage spaces' and 'Physical drives'.

**Storage spaces section:**

- Piccies, movies and music (P:):** Parity, 63.0 TB, Using 3.00 GB pool capacity. Status: Warning (Yellow triangle icon). Message: Reduced resiliency; reconnect drives. Actions: View files, Change, Delete.
- Documents (S:):** Two-way mirror, 63.0 TB, Using 2.50 GB pool capacity. Status: Warning (Yellow triangle icon). Message: Reduced resiliency; reconnect drives. Actions: View files, Change, Delete.

**Physical drives section:**

- VMware, VMware Virtu...:** 0.21 % used, Providing 0.99 TB pool capacity. Status: Warning (Yellow triangle icon). Message: Disconnected; reconnect drive. Actions: Rename, Remove.
- VMware, VMware Virtu...:** Attached via SAS, 0.24 % used, Providing 0.99 TB pool capacity. Status: Okay (Green checkmark icon). Action: Rename.
- VMware, VMware Virtu...:** Attached via SAS, 0.12 % used, Providing 1.99 TB pool capacity. Status: Okay (Green checkmark icon). Action: Rename.

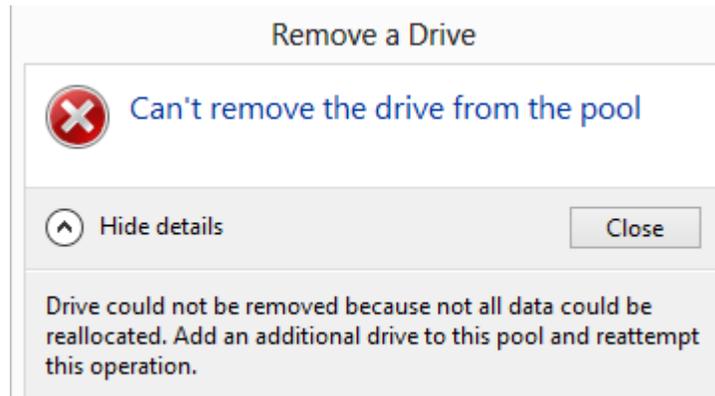
Storage Spaces isn't happy and gives warnings because one of the storage spaces using parity resiliency which needs a minimum of three physical drives and now there's only two.

Plugging the same drive (unchanged) back into the computer is detected by Windows. It will check the drive and ensure all the data is present and correct.

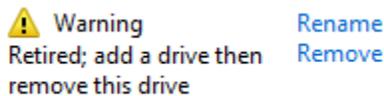
## Windows 10 for Microsoft Office users

### Storage Spaces - Step by Step

If the physical drive has information that Storage Spaces needs to preserve data, you'll see this option if you try to Remove a disconnected drive.



And the Manage storage spaces list of physical drives will mark the drive as 'retired'.



Add a new drive to the same pool then try clicking 'Remove' again.

#### PREPARE FOR REMOVAL

An important addition to Windows 10 is 'Prepare for removal'. This avoids all the unpleasantness that comes from just removing a drive.

---

*'Prepare for removal' gives notice to Windows that a physical drive will be disconnected soon and gives the system time to offload necessary data.*

---

Use this option before removing a physical drive from a pool.

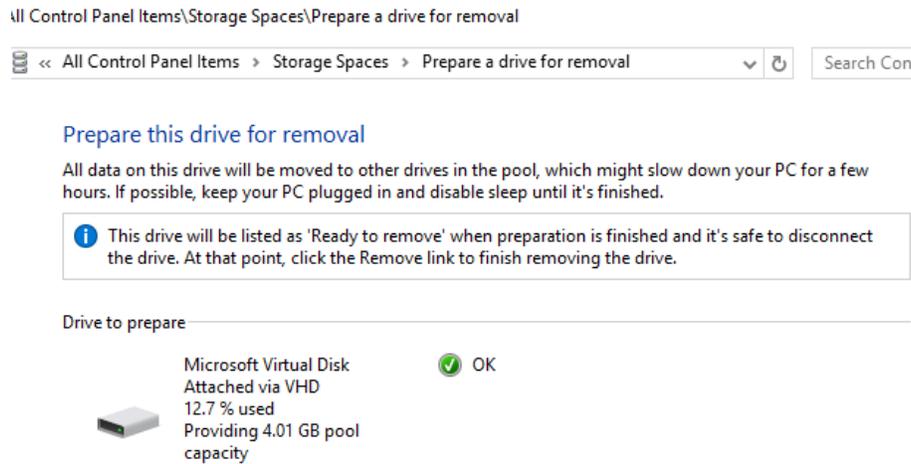
# Windows 10 for Microsoft Office users

## Storage Spaces - Step by Step

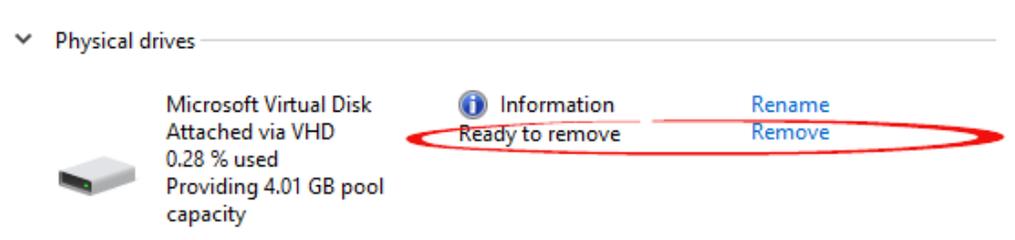
In the physical drive list for a Storage Space there will be a 'Prepare for Removal' link next to each drive.



Click on that link then confirm the action:



Once the work is done the physical drive is marked as 'Ready to Remove' and there's a Remove link.



If adding a new physical disk, add the new disk to the pool first. Then 'Prepare for removal' the old drive. Windows can then use the new drive to take data from the old drive. Finally remove the old drive once Windows gives the all clear.

It also very handy for hard drives that are starting to fail. Use 'Prepare for Removal' on the failing drive to get all the information off it before the drive falls over completely.

# Windows 10 for Microsoft Office users

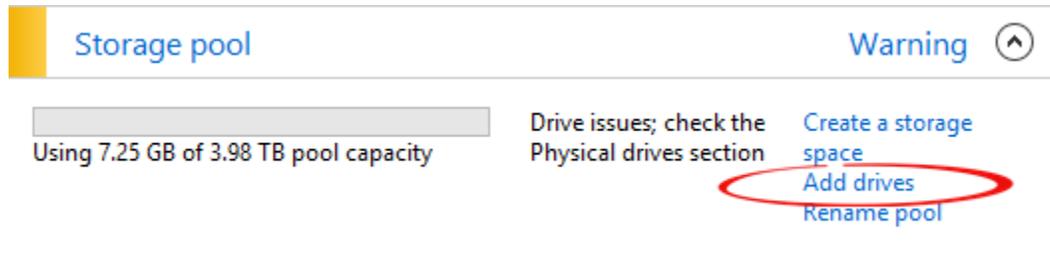
## Storage Spaces - Step by Step

### ADDING ANOTHER DISK

Now we'll plug in a new drive into the pool, to replace the one we just removed. A 'measly' 1TB drive is replaced with a 1.5TB drive.

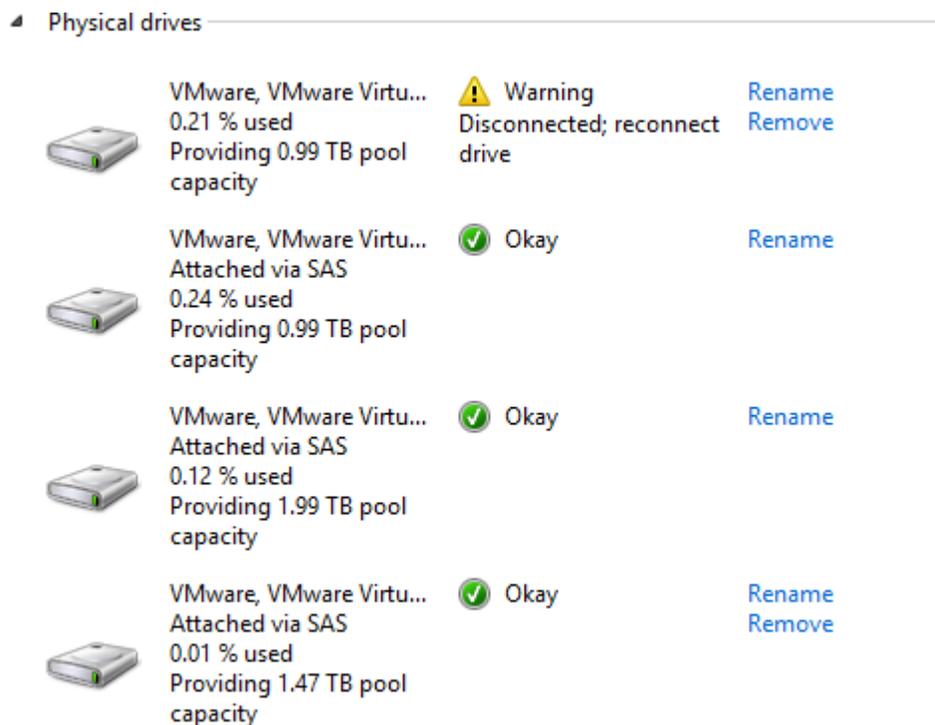
You should plug in the new drive then remove the old one but, in this example, we'll remove the old drive first so you can see resiliency and data redundancy at work.

Plug in the drive then click 'Add Drives' in the storage pool section.



Windows will detect an unformatted new drive or you can select a formatted new drive from the Add Drives dialog. Click on 'Add Drives' to continue.

The new drive is added to the pool but notice that it's not fixed the Warnings.



That's because there's still data on the removed drive that Storage Spaces expects to be available. (We didn't use 'Prepare for removal' in this example).

Let's see what happens if we assume that the removed drive is never coming back (i.e. it's been lost or is faulty). Click on 'Remove' next to the missing drive then confirm removal of the drive.

# Windows 10 for Microsoft Office users

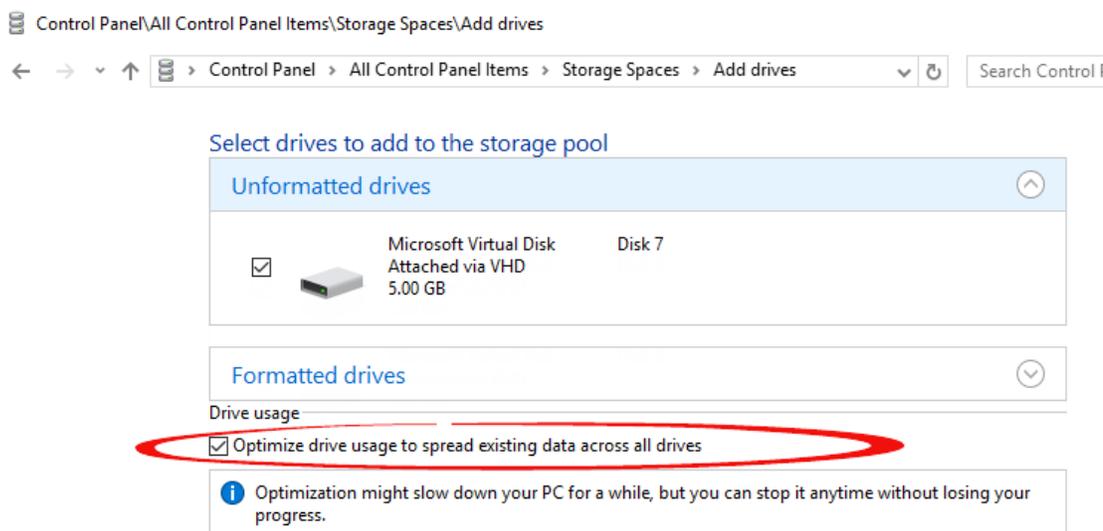
## Storage Spaces - Step by Step

Storage Spaces will repair itself using the available drives and the resiliency available. You'll see the spaces go through a 'Repairing' cycle to do this – how long it takes depends on the amount of damage.

### OPTIMIZATION

One problem with Storage Spaces in Windows is that the drives can become unbalanced. That means storage is more heavily used on some drives than others in the pool. It can happen when drives are being added and switched over time.

Windows 10 can remedy that with the optimize option. It's available when adding drives and is recommended.



It's also available from the Manage Storage Spaces page:



It's also available via PowerShell:

```
Optimize-StoragePool -FriendlyName "[NameOfYourStoragePool]"
```

Optimization is currently only available for Simple and Mirrored spaces. It may be available for Parity spaces in the future or when you read this.

## Windows 10 for Microsoft Office users

### Storage Spaces - Performance

Optimization is only available for Storage Spaces created with Windows 10. If you had a Storage Space in Windows 8 it will work in Windows 10 but optimization isn't available. To fix that go to PowerShell and use the command

```
Update-StoragePool -FriendlyName "[NameOfYourStoragePool]"
```

That will update the Storage Space metadata to the Windows 10 standard and allow optimization.

## USING AN EXISTING DRIVE IN A POOL

Because Storage Spaces erases new drives added to the pool you can't just add an existing physical drive with data to the pool.

You have to copy all the data off the physical drive and then add it to the pool.

That's easy if there's enough free space in the pool already to handle the used space on the physical drive. Just copy the data into the existing Storage Spaces before adding the drive to the pool.

If the existing pool doesn't have enough free space you'll need to find some temporary location to store files before you add the physical drive to pool:

1. Copy all data from the physical drive to a temporary location, perhaps another external drive, network storage etc. that isn't part of Storage Spaces. Make sure the copied data is safe and complete.
2. Add the physical drive to the pool, see Adding another disk
3. Copy / Move the data from the temporary storage into Storage Spaces.

If there is enough free space on the new drive, consider adding a virtual drive to the physical drive then adding the VHDX to the pool. This will preserve the existing files on the physical drive.

## PERFORMANCE

You'd expect a small, tiny, drop in performance using Storage Spaces. That's understandable since Windows has to co-ordinate two or more drives instead of simply saving/reading to a single physical drive.

The main performance limitation is the connection speed to the drives, especially external ones. Storage Spaces lets you connect a mixture of drives but the speed (especially when mirroring) will depend on the slowest connection. For example, if you have two-way mirroring with an internal drive and USB 2 drive in the pool, it's the much slower USB 2 drive that will (if anything) slow down Windows.

## Windows 10 for Microsoft Office users

### Storage Spaces - Out of space?

However, any degrade in performance from Windows itself will be unnoticeable and there are a lot of advantages.

## OUT OF SPACE?

Storage Spaces will start to warn you if the pool is running out of free space. The warnings start when there's less than 30% free space in the pool capacity.

That's different from the free space in a single Storage Space for which there's only the usual Windows warning when a drive is utterly full or you try to copy excess files to it.

There is a fleeting Low Disk Space warning in the taskbar which shows for any drive (normal or Storage Space). We've found that this warning is slow and often the drive is already full before the belated warning appears.

If a pool is full, Windows will take it offline to preserve the files. To fix this either add a drive to the pool or try Optimize which might rebalance the drive use. At worst, mark all the files/folders on the full storage space as 'read only' using PowerShell.

You can run out of space faster than you might expect if you have physical drives of mismatching sizes. For example a two-way mirror with 500GB and 2TB physical drives is limited to 500GB of space because that's the largest amount of data that can be saved twice (once to each drive).

### MISLEADING FREE SPACE MEASURES

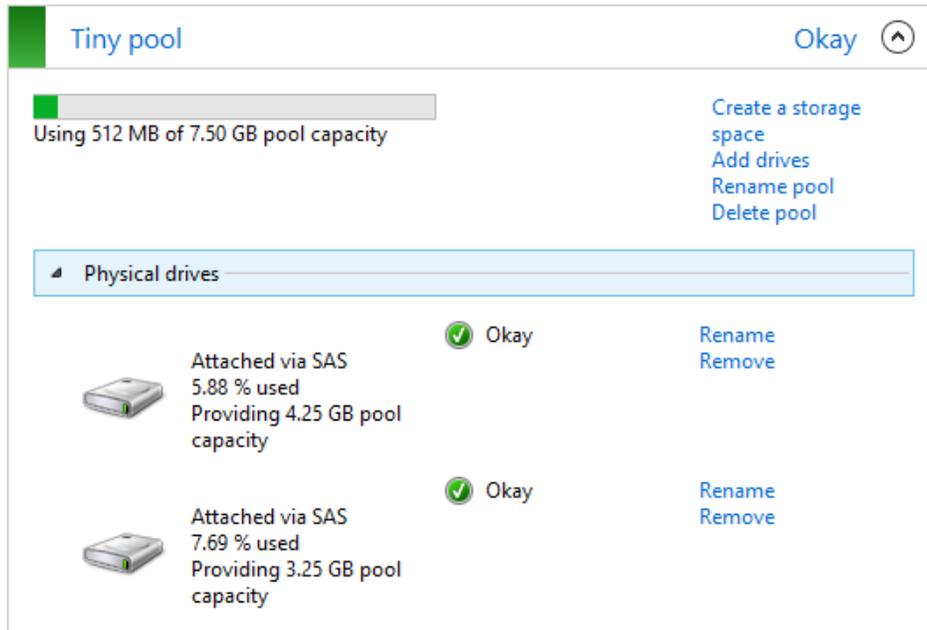
Here's an example of how Storage Spaces can show misleading amounts of 'free' space and leave you wondering what's gone wrong.

(For this example we attached incredibly small physical drives to make the point. Normally you would not have 3GB and 4GB physical drives and the overhead used by Storage Spaces on each drive is a far smaller proportion of the drive size.)

Here's a Storage Space with the two tiny physical drives attached of different sizes:

# Windows 10 for Microsoft Office users

## Storage Spaces - Out of space?



There's two mismatched physical drives attached with 7.5GB pool capacity of which 0.5GB is overhead leaving 7GB really available.

Clicking on 'Create a Storage Space' shows these defaults:

Enter a name, resiliency type, and size for the storage space

Name and drive letter

Name:

Drive letter:

Resiliency

Resiliency type:

**i** A two-way mirror storage space writes two copies of your data, helping to protect you from a single drive failure. A two-way mirror storage space requires at least two drives.

Size

Total pool capacity: 7.50 GB

Available pool capacity: 7.00 GB

Size (maximum):

Including resiliency: 7.49 GB

**i** A storage space can be larger than the amount of available capacity in the storage pool. When you run low on capacity in the pool, you can add more drives.

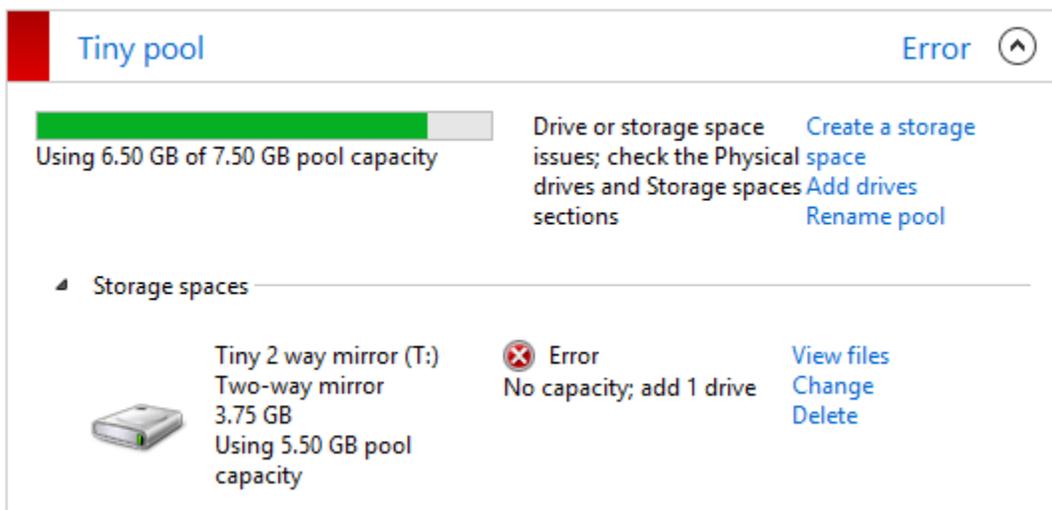
## Windows 10 for Microsoft Office users

### Storage Spaces - Out of space?

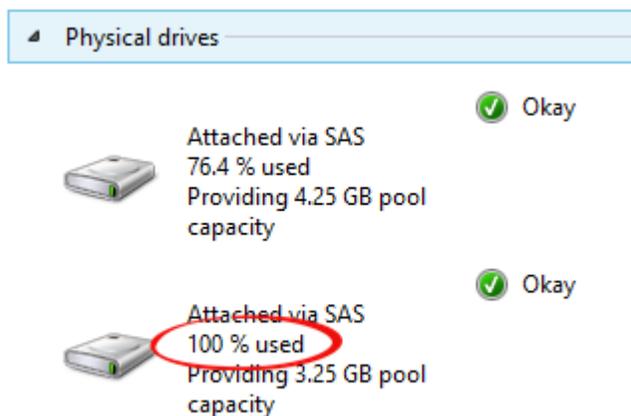
Notice the default and supposedly maximum size given. A 3.75GB storage space isn't possible with the current pool and two-way mirroring. Storage Space has merely divided the total pool capacity (7.5GB) by two to propose 3.75GB for the space. But that's not possible because one of the physical drives has only 3.25GB available (see above). In this scenario the maximum size should be 3.25GB being the smaller of the two mirrored drives.

Of course, adding another drive will fix this. The problem is that Windows isn't showing the real available free space nor proposing a practical space maximum with the existing physical drives.

There's no warning of the obvious trouble to come. Let's see what happens when we try to overfill the storage space.



The only Storage Space in the pool is showing 'No Capacity' but the according to the pool capacity there's a gigabyte still left. A close look at the physical drives shows the problem:

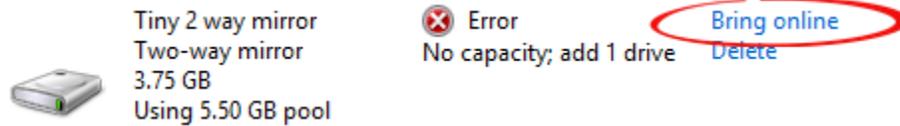


We've highlighted the 100% full drive but Windows has not – strangely there's no warning against the 'full to the brim' drive to the extent that it's marked 'OK' which it certainly is not.

## Windows 10 for Microsoft Office users

### Storage Spaces - More features for a Storage Space

Windows will let you continue to fill the storage space even it's showing 'no capacity'. Windows Explorer doesn't know the drive is full. If you keep putting files onto the drive, you'll eventually get nasty messages from Explorer as the storage space is yanked away from it. As you can see the storage space has been taken offline and the 'Bring online' link appears.



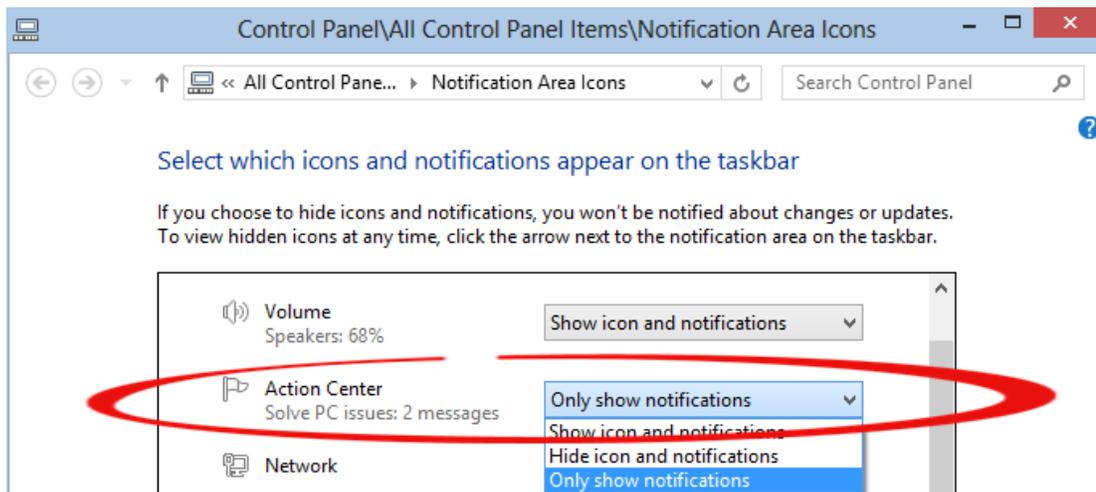
If you click 'Bring online' the drive should reappear in Explorer but might go away again quickly if some program tries to write to the space. Best to move some files off the space pronto before it goes offline again.

Adding another drive of sufficient size to the pool will also fix the problem.

## ALERTS

If there's a problem with Storage Spaces it will show up in the Action Center on the taskbar.

Make sure that the taskbar notification icons are set to allow Windows Action Center is set to show notifications or icons and notifications.



## MORE FEATURES FOR A STORAGE SPACE

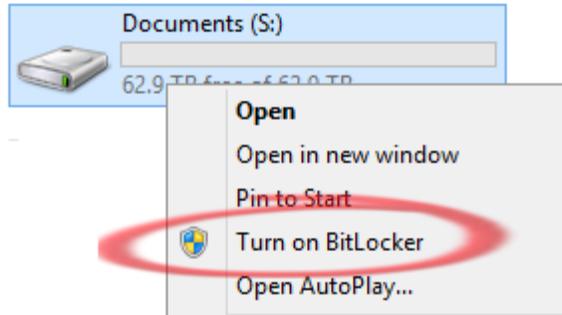
Once you've made a storage space, most of the usual Windows options for a 'drive' are available.

### BITLOCKER

You can encrypt a storage space in the usual way, right-click on the drive in Explorer and choose 'Turn on BitLocker'.

## Windows 10 for Microsoft Office users

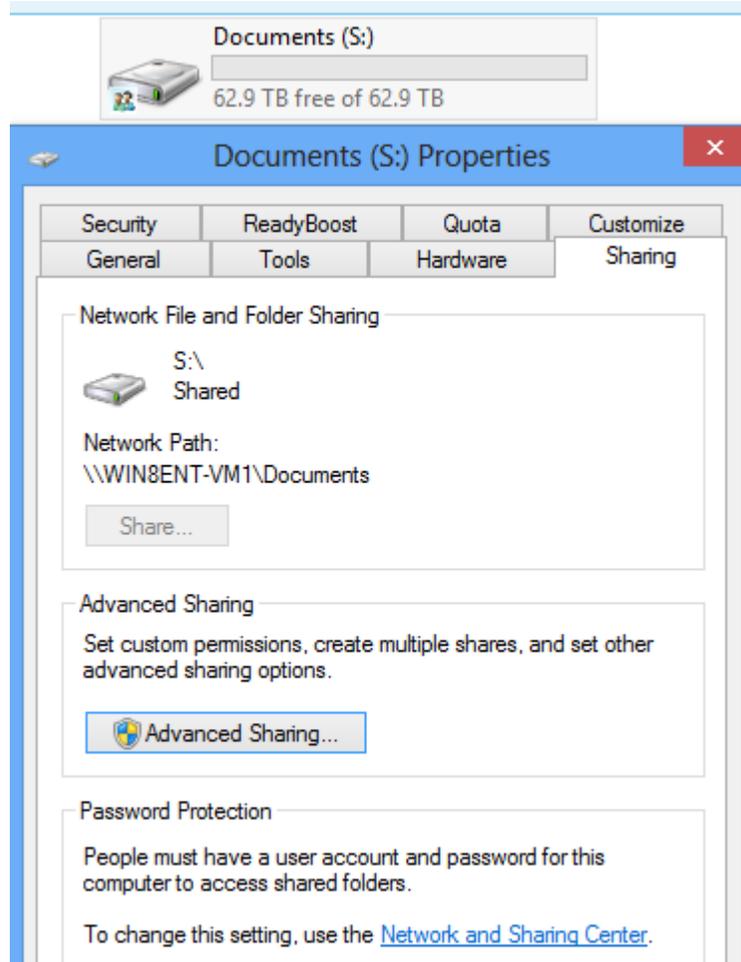
Storage Spaces - More features for a Storage Space



See the chapter on BitLocker for more details.

### SHARING

Similarly, you can share the Storage Space, or folders within a Space across your network. Right-click on the drive, choose Share with | Advanced Sharing or Properties | Sharing which take you to the same place.



## Windows 10 for Microsoft Office users

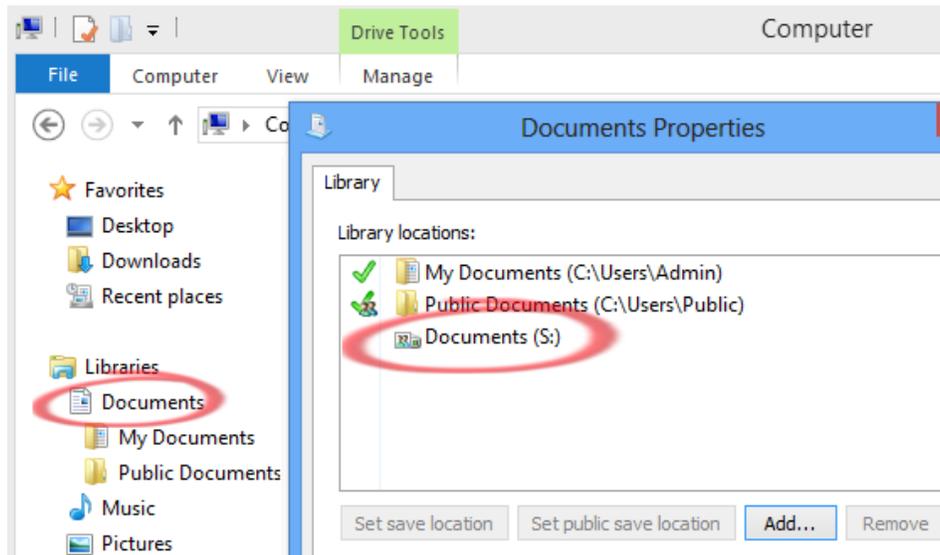
### Storage Spaces - More features for a Storage Space

With Sharing enabled, Storage Spaces become a poor-man's network attached storage. Unlike standard NAS boxes, you have to keep the computer on to let the share be available to other computers. On the other hand, a shared Storage Space has the expandability and resiliency benefits that most NAS don't have.

### LIBRARIES

Any Storage Space will work better if you combine it into a Windows Library.

A [library](#) combines files from different locations into a single view. Those locations can include folders on storage spaces.



### INDEXING

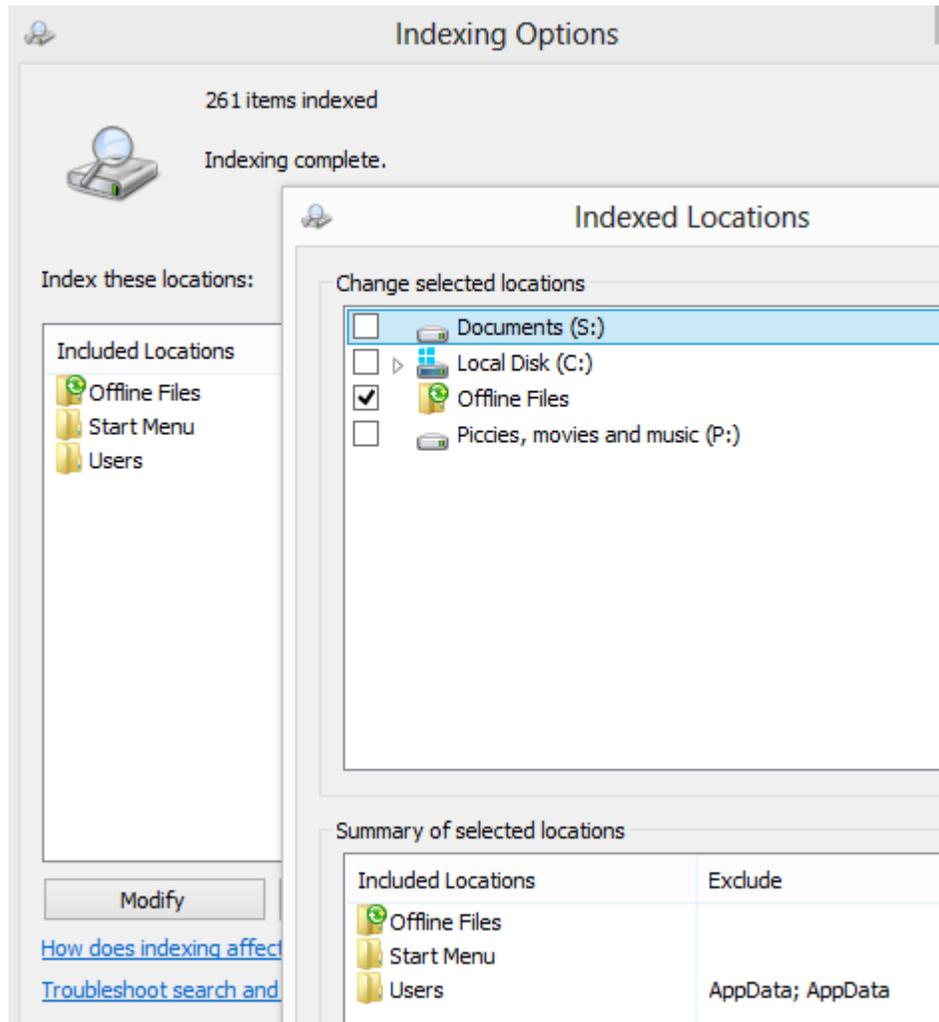
Storage Spaces may be automatically indexed by Windows – our results were mixed during testing. Sometimes the new drive/storage space was added to the indexed locations, sometimes not.

You should ensure indexing is happening by going to Control Panel | Indexing Options | Modify.

## Windows 10 for Microsoft Office users

Storage Spaces - More features for a Storage Space

Ensure the drives are selected for indexing as they are notably NOT in this example:



Check the drives you want indexed, or select the folders within them.

### FILE HISTORY

The [File History](#) feature is applied to Storage Space files if they are included in a Library or added as a folder. The default for File History is the copy file versions from 'libraries, desktop, contacts and favorites'.

A storage space can be nominated as the destination for file history storage. If you do this, it's best to create a separate pool (ie separate physical drives) for file versions for maximum safety. If you save file history to the same pool as the source files you may lose both originals and history if too many drives fail at once.

Whatever you choose, make sure there's enough space in the file history storage for the files and all their revisions.

# Windows 10 for Microsoft Office users

## Storage Spaces - Limitations

### STILL NEED BACKUPS

Storage Spaces might have mirroring and parity but that's not a replacement for backups.

When you delete a file stored on a three-way mirrored storage space Windows will efficiently delete all three copies in a flash!

Backups or File History are still needed to get older versions of files, recover from damage to your whole computer and other disasters such as theft or fire.

### LIMITATIONS

Storage Spaces have some limitations worth considering.

The major one is that it won't work with the boot drive usually Drive C.

---

*You can 'Two-way mirror' a boot drive using the Mirrored Volume feature in Windows Disk Management.*

---

Storage Spaces only works with entire physical drives. You can't allocate only part of a physical drive to a pool – it's all the drive or nothing.

The workaround for this limitation is to make a [virtual hard drive](#) (VHDX) on the physical drive then attach the virtual drive to Storage Spaces. The virtual drive will be a single file on the physical drive and let you use the rest of the drive for other purposes. A VHD/VHDX could also be moved to another location and reattached to a Storage Space.

---

*If you allocate a drive to a pool, all existing data on the drive is erased. If you want data on a drive to be added to a storage space you have to copy all the files to another place, then add the drive to the pool and lastly move the data into a storage space (that's assuming there wasn't sufficient free space beforehand).*

---

In our tests, Storage Spaces would not recognize a physical drive smaller than 4GB as able to be added to a pool. Not really a problem, but worth keeping in the back of your mind.

## Windows 10 for Microsoft Office users

### Storage Spaces - Limitations

The maximum Storage Space size is stated as 50TB in the currently available Windows documentation however you can set a maximum of 63TB in the software:

Size

Total pool capacity:	1.99	TB
Available pool capacity:	1.99	TB
Size (maximum):	<input type="text" value="63"/>	TB ▾
Including resiliency:	189	TB

**i** A storage space can be larger than the amount of available capacity in the pool, you can add more drives.

Go beyond 63TB and there's a warning:

Size

Total pool capacity:	1.99	TB
Available pool capacity:	1.99	TB
Size (maximum):	<input type="text" value="64"/>	TB ▾
Including resiliency:	192	TB

**i** The specified maximum size is not valid.

Let's face it; 63TB should be more than enough space for most people and organizations!

The type of resiliency for a storage space can't be changed even if there's the physical drives and free space to support it.

The type of resiliency chosen does not change the notional 'pool capacity' shown in the Storage Space control panel dialog. That, combined with problems from mismatched disk sizes, can result in a storage space becoming full without warning. See [Misleading free space](#) above for an example.

'[Prepare for Removal](#)' in Windows 10 removes the previous problem of being unable to 'deprecate' a physical drive. It lets you tell Storage Spaces the drive is going to be removed soon and allow time for Windows to move data to other drives in the pool (assuming there are sufficient drives available). Then the drive can be removed with less difficulty or warn you that there will be a problem.

According to Microsoft there's no software limitation on the number of physical drives connected to a pool. In practice you'd have performance problems if you try to connect too many drives through connections not intended to handle that much traffic.

## Windows 10 for Microsoft Office users

### Storage Spaces - Limitations

Storage Spaces aren't really suitable for laptop computers. Almost all laptops have a single drive which is needed to start the machine. Since Storage spaces needs dedicated drives and can't use a boot drives, laptops are out. You could use Storage Spaces on a laptop via external drives but they would be unavailable when unplugged and that could cause trouble if a program tries to access them.

Saving to drive letters is a little disappointing in the 21<sup>st</sup> century. Drive letters have been around for a long time and are very familiar to everyone but have limitations. It would have been nicer if Storage Spaces allowed connection by name (similar to network naming) with the option drive letters (just like Windows NTFS). After all it would be more understandable if you could save to locations called 'Documents' 'Photos' 'Music' instead of Drive E: Drive F: and Drive G:.

# BITLOCKER

## WHAT IS BITLOCKER?

BitLocker is an extra feature in Windows which encrypts all data as it is written to the hard drive.

Information on a stolen hard drive 'locked' with BitLocker can't be retrieved.

If your computer is stolen with a standard Windows drive, anyone can access the drive and read the contents, regardless of whether you used a Windows login and password. It doesn't take much to do that, just remove the stolen drive and connect it to another computer as second drive. Because the drive isn't protected, most of the contents are open for inspection.

A drive encrypted with BitLocker blocks any such intrusion because the entire drive appears as a random mess to anyone without the proper authority. Yet, when you start your computer it's not obvious that BitLocker is running unless you have extra unlocking (ie PIN or Password) in place. For most people their Windows login is also the key to unlocking the BitLocker protected drive.

For extra protection, it can be possible to stop Windows even booting until a special BitLocker code is entered.

BitLocker also checks your computer at startup to make sure it hasn't been changed. This protects against rootkit and other attacks that try to infiltrate before or while Windows starts. Booting up the computer from another device (like a USB memory stick) won't let you access a BitLocker drive.

Because the entire drive is encrypted even system or temporary files are protected, not just the files you are directly working on.

The main advantage of drive encryption systems, like BitLocker, is they are invisible to you when normally using the computer. Once you have verified your access at the start of a Windows session, BitLocker will operate in the background.

## WHO HAS IT?

BitLocker comes with Windows 10 Pro and Enterprise editions only.

Originally BitLocker only worked on fixed hard drives however Windows 7, 8 and 10 allow BitLocker encryption on removable drives (BitLocker to Go)

# Windows 10 for Microsoft Office users

BitLocker - What's New?

## DEVICE ENCRYPTION

Until Windows 8.1, BitLocker was enabled on a per-drive basis and enabled by the user.

Now there's the general availability of what Microsoft calls 'Device Encryption' where the entire computer and all fixed drives are encrypted by default.

To do this requires a newer computer with certain BIOS hardware specifications like TPM 2.0 (Trusted Platform Module) and InstantGo that supports connected stand-by. Not all computers support this standard currently, but you can expect they will. The Windows recommended hardware configuration requires TPM 2.0 on new computers from 1 January 2015.

With the right hardware, you can enable Device Encryption from Settings. Search for 'Device Encryption'. If there's no result shown, your computer doesn't support that feature.

On a clean install of Windows with the appropriate hardware, Device Encryption with BitLocker is enabled by default. That's a great idea but it also means that hard drives are encrypted without users fully understanding the consequences.

It's vital that you know if your drives are encrypted with BitLocker because you need to backup the recovery key in case of computer failure.

---

*Device Encryption makes a copy of the vital BitLocker recovery key and saves to it OneDrive!*

---

You can turn off device encryption in Settings.

## WHAT'S NEW?

If you're familiar with BitLocker from Windows 8, then it won't be a big change. In fact, we could not find any documentation from Microsoft listing any changes to BitLocker in Windows 10.

## Windows 10 for Microsoft Office users

### BitLocker - What's New?

Windows 10 release 1511 and later includes a new encryption option called XTS-AES. It is not compatible with earlier versions of Windows so it's an option to choose when enabling Bitlocker.



There are some differences from BitLocker in Windows 7 and Server 2012 that are still worth keeping in mind.

- Administrators can enable BitLocker during a Windows installation.
- Used Disk Space only encryption. To implement BitLocker faster, Microsoft has added an option to only encrypt the used portions of the drive. This is faster than waiting while the entire drive is encrypted but is only suitable for new computers where the majority of the hard drive hasn't been used. Encrypting a whole drive typically takes 4-8 hours depending on the size of the drive.
- Changing PIN and password. In Windows standard users can change the BitLocker PIN and password without administrator level access. IT administrators can disable this option via the [Group Policy Editor](#) in the section:  
`\Computer Configuration\Administrative Templates\Windows Components\BitLocker Drive Encryption\Operating System Drives`  
Administrative access is still required to set PIN or password in the first place.
- Network Unlock. This allows IT admins to access a BitLocker protected drive when booted up on a trusted wired network.
- Encrypted Hard Drive support. Most new Solid State Drives include encryption at the hardware level for each physical section of the drive. This will speed up Bitlocker because your computer doesn't have to encrypt data, the drive does it. Windows and BitLocker support this

# Windows 10 for Microsoft Office users

## BitLocker - System Requirements

Full Disk Encryption (FDE) system natively. When getting a new SSD look for BitLocker support and hardware encryption features.

## SYSTEM REQUIREMENTS

Your computer should ideally have a TPM (Trusted Platform Module) v1.2 or preferably v2 module installed. Most modern *portable* computers have TPM included.

TPM is normally required however it is possible to use BitLocker without a TPM module and authenticate on every boot-up using a USB key. We have a special section on [BitLocker without TPM](#).

The computer must be able to read a USB drive from the BIOS (i.e. before Windows starts). Many recent computers have this facility.

The computer BIOS has to either Trusted Computing Group (TPG) or UEFI compliant. Most modern computers will have UEFI.

Other than that, officially any hardware (CPU. Memory etc.) that runs Windows will run BitLocker.

BitLocker works at the system level, and any software running on your computer (including Office) is unaware that the files are being encrypted.

You can also password protect Office documents on a BitLocker drive. In fact, you should password lock documents that are going to be copied or sent elsewhere.

Because BitLocker only encrypts data saved to the hard drive, you'll get better performance if there's plenty of memory (RAM) installed. Additional memory can be used for drive caching and therefore reducing slightly the need for encryption as you use the computer.

## TRUSTED PLATFORM MODULE

The TPM (Trusted Platform Module) module is a small smart card on your motherboard which stores the unlock key for your encrypted hard drive and detects changes in startup files

You can find TPM at Control Panel | Device Manager | Security devices:

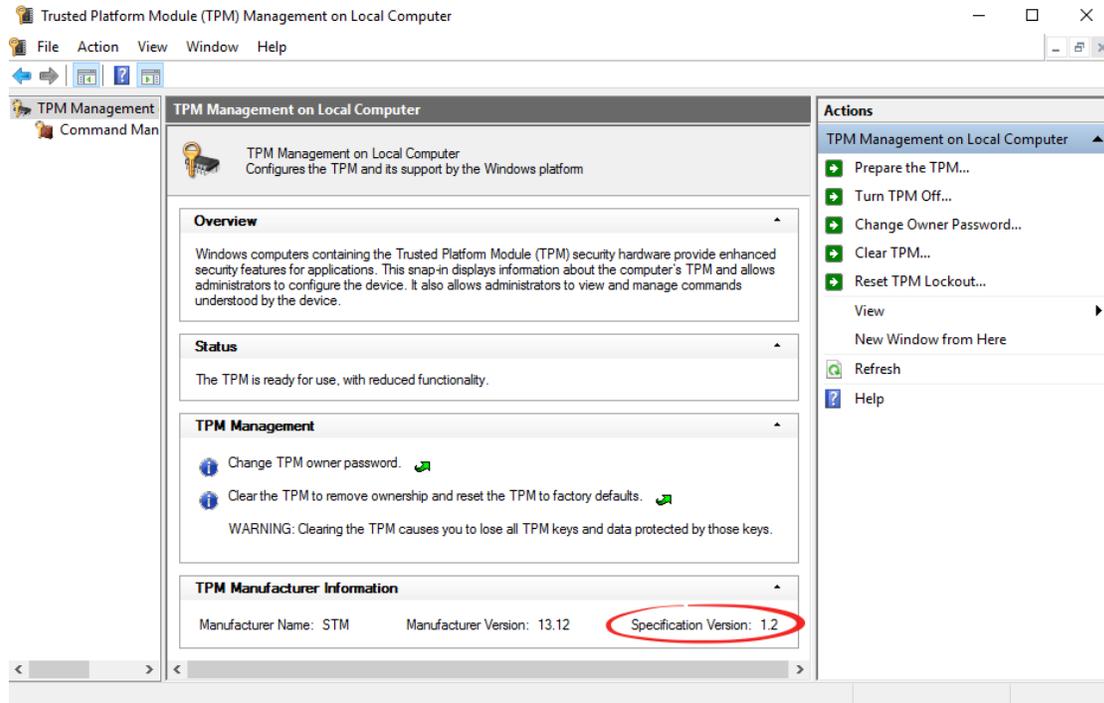


# Windows 10 for Microsoft Office users

## BitLocker - System Requirements

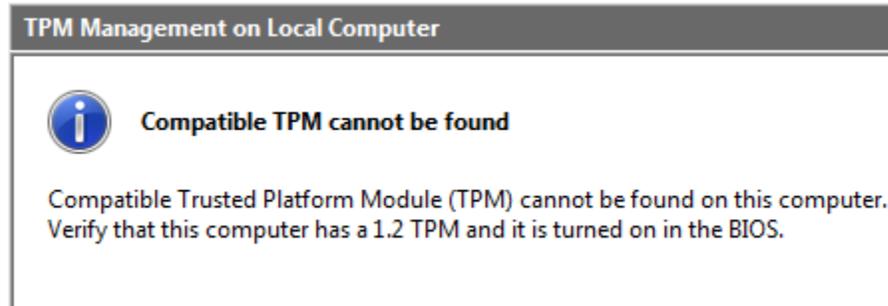
Or go to the Start menu and type `tpm.msc` into the Search box – this starts the Trusted Platform Module management component.

If you have TPM on the computer you'll see something like this:



With the TPM version at bottom right.

If TPM isn't available:



As the message says, you can go into the BIOS of your computer to see if there's a TPM module option that needs to be enabled. Check the computer or motherboard manual to see if TPM is available and how to enable it.

With a TPM module your computer can start up, get the key from TPM storage and boot from the encrypted hard drive without any additional work from you. Having TPM available also gives you options to startup without a USB key or PIN code

Without a TPM you have to insert a USB startup key with the key data stored on it or type a password.

# Windows 10 for Microsoft Office users

## BitLocker - System Requirements

### SOLID STATE DRIVES

Any Solid State Drive (SSD) should be compatible with Windows 10 and Bitlocker but it's worth making sure that drive has compatible hardware encryption.

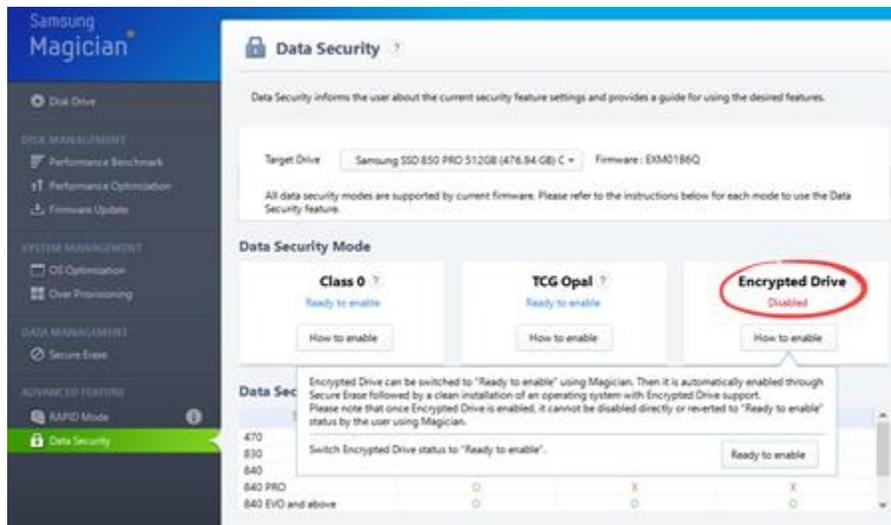
Normally, Windows and Bitlocker has to encrypt/decrypt data that's being saved/read to the hard drive. That takes some time and computer resources away from other tasks.

Some modern SSD's have hardware encryption that compatible with Bitlocker. That means the task of scrambling/unscrambling data for the hard drive is handled by the drive itself, instead of Windows. That means a performance improvement for your computer.

This is possible because of Microsoft's eDrive specification and another standard called Opal.

Enabling Hardware Encryption isn't easy and can only be done from a totally blank drive. You can't convert an existing Bitlocker drive to hardware encryption without wiping it and reinstalling Windows.

Before doing any of that, run the disk management software for your SSD drive. Samsung SSD's have [Magician](#) software. Under Data Security there's an option to prepare a drive for hard drive encryption.



Check your SSD maker for the appropriate software. Always download the latest utility software from the makers web site (no other place) and ignore anything supplied on CD/DVD with the drive.

To enable hardware encryption on a new Windows install, look up the instructions on the web that apply to your specific make and model of SSD.

## BITLOCKER AUTHENTICATION OPTIONS

There are various ways you can unlock a BitLocker drive. All but one needs a TPM (Trusted Platform Module) on the computer.

- TPM only
- TPM plus PIN
- TPM plus USB Key
- TPM plus PIN and USB Key
- USB key only
- Password only

The PIN is a 4 to 20 digit code that you type in using the 'top row' number keys on your keyboard.

The USB startup key is a long complex string of characters – it is stored on a USB device to be read on startup.

Many people will choose TPM only because it allows a smooth computer start with no additional user input. However, TPM only means there is no BitLocker protection when returning from hibernation mode.

TPM plus PIN needs you to type in a few numbers which isn't a big problem, unless you forget the PIN.

Any USB key option means you need to keep that memory stick with you at all times. If you lose it or the key is faulty, you can't access your computer. That would be a major hassle when travelling. **You can and should save the startup key on multiple USB devices.**

On balance, TPM plus PIN would seem a good compromise between ease of use and security. We'll show you how to do that 'step by step' in this chapter.

If your computer is part of a Windows server domain with Active Directory there is an option for 'key escrow'. This lets you store the BitLocker key offsite in Active Directory as a backup. Check with your network administrator about this option.

## THE RECOVERY KEY

The BitLocker recovery key is another vital part of the process.

If BitLocker detects a problem on startup, it will enter recovery mode. You'll need to enter the recovery key before checking your computer and approving any changes.

## Windows 10 for Microsoft Office users

### BitLocker - The recovery key

The recovery key should be safely stored in several ways beyond the computer you're using. Some options for recovery key storage are:

- Save to your Microsoft account online
- Saving to a USB key
- Print out (yes on paper!)
- Burn to a CD/DVD
- Saving to a personal data or info folder in Outlook.
- Copy to an Active directory server, if available.
- Copy to cloud storage.

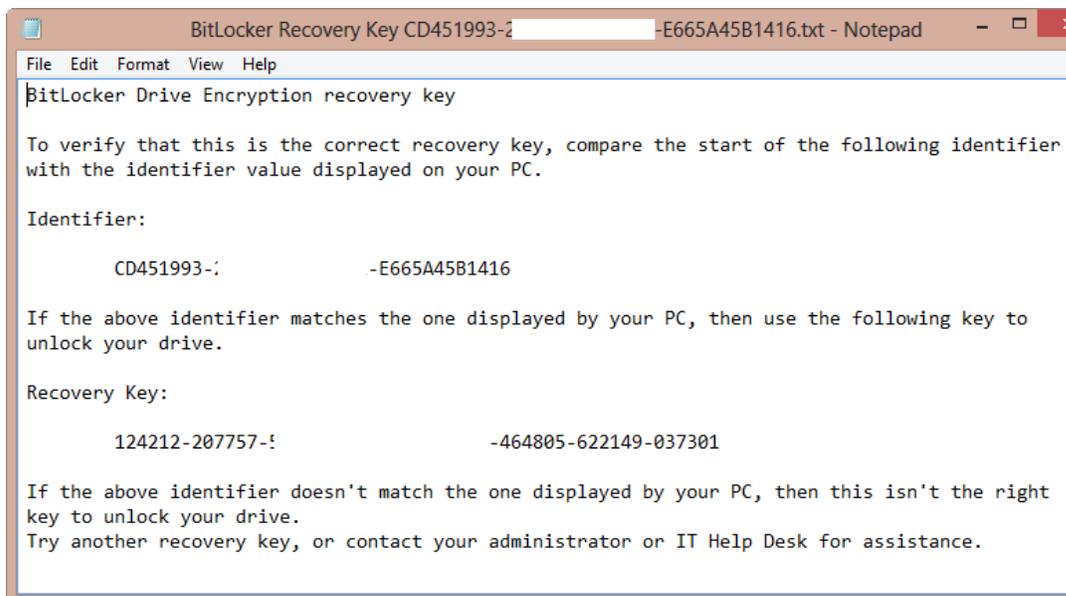
The recovery key is the BitLocker equivalent of 'Open Sesame'. If someone gets the recovery key, they can access and change the entire encrypted drive.

So you need to store the recovery key safely but make sure it's not available to others.

Storing the Recovery Key on the encrypted drive is a bit like Spike Milligan's joke "Open crate with crowbar provided inside'. If you do store the key to the encrypted drive, make sure the file is copied or backed up elsewhere as well.

It's so important but also a point of vulnerability – if someone gets the recovery key they can open up the encrypted drive. Make sure the recovery key is not only *safely* stored but also *securely* stored.

The recovery key isn't magic, it's a long string of numbers. The Recovery Key file is a plain text file you can open in Notepad:



## Windows 10 for Microsoft Office users

### BitLocker - What it won't protect

By default the recovery key file is 'read only' to prevent accidental changes. As a plain text file it is usually indexed by any desktop search program.

## THE DOWNSIDE OF BITLOCKER

### RECOVERY TROUBLES

If anything goes wrong with your computer, recovery will be a lot harder. Most third-party disk recovery tools will be useless since they can only see the encrypted drive not the actual content.

If you forget the PIN or USB key- the drive can't be accessed.

If you lose the recovery key - the drive is lost entirely.

If the TPM module is damaged and you don't have the recovery password - the drive is lost.

### PERFORMANCE

As you might expect, constantly encrypting and decrypting data from the hard drive takes up computer resources. But the performance drop is not as much as you might think. For most people, BitLocker has little or no discernable effect on computer performance.

If you have a drive with Bitlocker compatible hardware encryption then the job of coding/decoding data is delegated to the drive itself. That's reduces the workload on the computer itself.

That said, we suggest only using BitLocker on more modern CPU's (e.g. Intel dual-core or better) with at least 2GB of RAM. This gives BitLocker enough power to operate while letting you get on with your work.

## WHAT IT WON'T PROTECT

BitLocker only covers files saved on the encrypted drive. If a file is copied from the BitLocker drive, the file is 'in the clear' (unless, of course, it is copied to another encrypted drive).

Compare that to a password protected Office document which retains encryption wherever it's copied.

Any security or law enforcement authority will be aware of BitLocker and similar products. Most countries have laws that require people to supply passwords or other authentication required for them to examine the hard drive. They can and will demand the PIN/key or recovery key to gain access

## Windows 10 for Microsoft Office users

### BitLocker - BitLocker step by step

to the hard drive. Some alternative drive encryption systems (eg [TrueCrypt](#)) let you create 'deniable' systems that look like random data but are actually encrypted operating systems.

If you use BitLocker with additional authentication (i.e. not TPM alone) then you'll be prompted for the PIN or startup key. With TPM alone a computer returning from hibernation is available to anyone.

BitLocker doesn't stop the drive or removable drive being entirely re-formatted. In other words, if a thief isn't interested in the content of your hard drive, the drive can simply be re-formatted and used again.

## BITLOCKER STEP BY STEP

BitLocker in Windows 10 is fairly easy to setup and not a lot changed from previous versions of Windows. That said, setting up BitLocker is a delicate process. If you get it wrong, you can lose the entire drive.

---

*A good phrase to keep in mind when switching to BitLocker – “If in doubt, don't”.*

---

### BEFORE YOU START

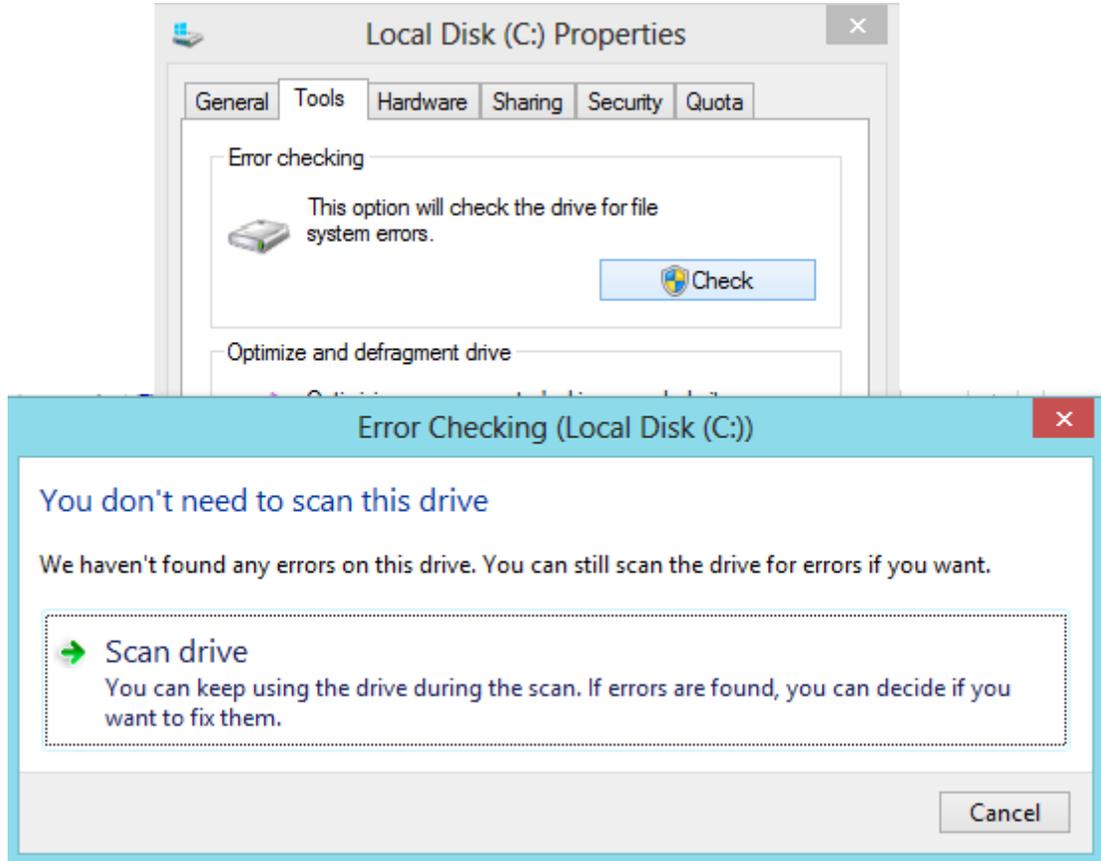
Before encrypting your drive, make sure your system is totally up to date and ready.

- You'll need Administrator access to your computer
- Update the BIOS on the computer
- Install all Windows patches and Service Packs
- Update any system disk tools, anti-virus software etc.
- Error-check and repair problems on the target drive (see below)
- [Check the TPM module](#) is available and the right version.
- If it's a portable computer, plug into AC power.
  - **Don't** rely on battery life.
- **Backup the entire drive and check the backup**
- Backup the entire drive and check the backup
- Backup the entire drive and check the backup (got the message?)
- Allow plenty of time.

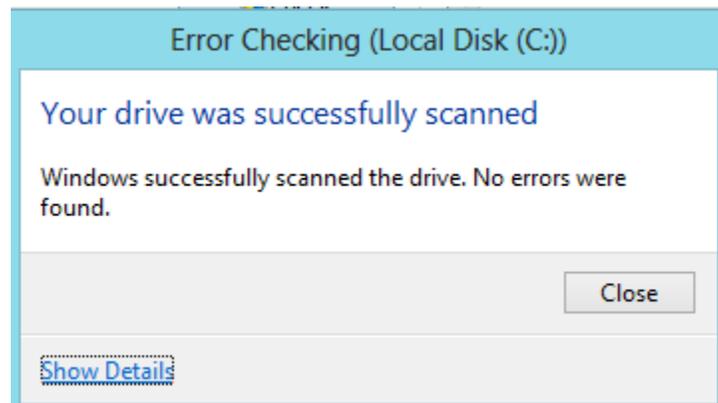
## Windows 10 for Microsoft Office users

BitLocker - BitLocker step by step

Check the drive you want to encrypt. BitLocker will fail if there's an error on the drive, so best to check and fix it first. Right-click on the drive then choose Properties | Tools | Error-checking | Check and make scan the drive even if Windows says there's no errors.



Only proceed with BitLocker if there are no drive errors:



# Windows 10 for Microsoft Office users

## BitLocker - BitLocker step by step

### DYNAMIC DISK

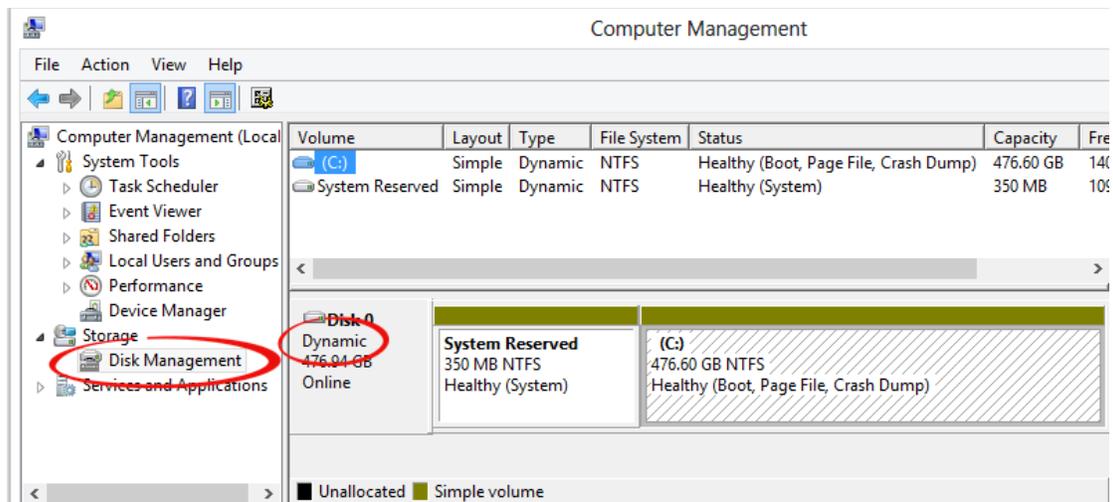
When you start the BitLocker process you might get this error.

BitLocker Drive Encryption (C:)

#### Checking your PC's configuration

BitLocker Setup requires a basic disk. Convert your dynamic disk to a basic disk and run BitLocker Setup again.

To change the disk type go to Control Panel | Administrative Tools | Computer Management | Disk Management



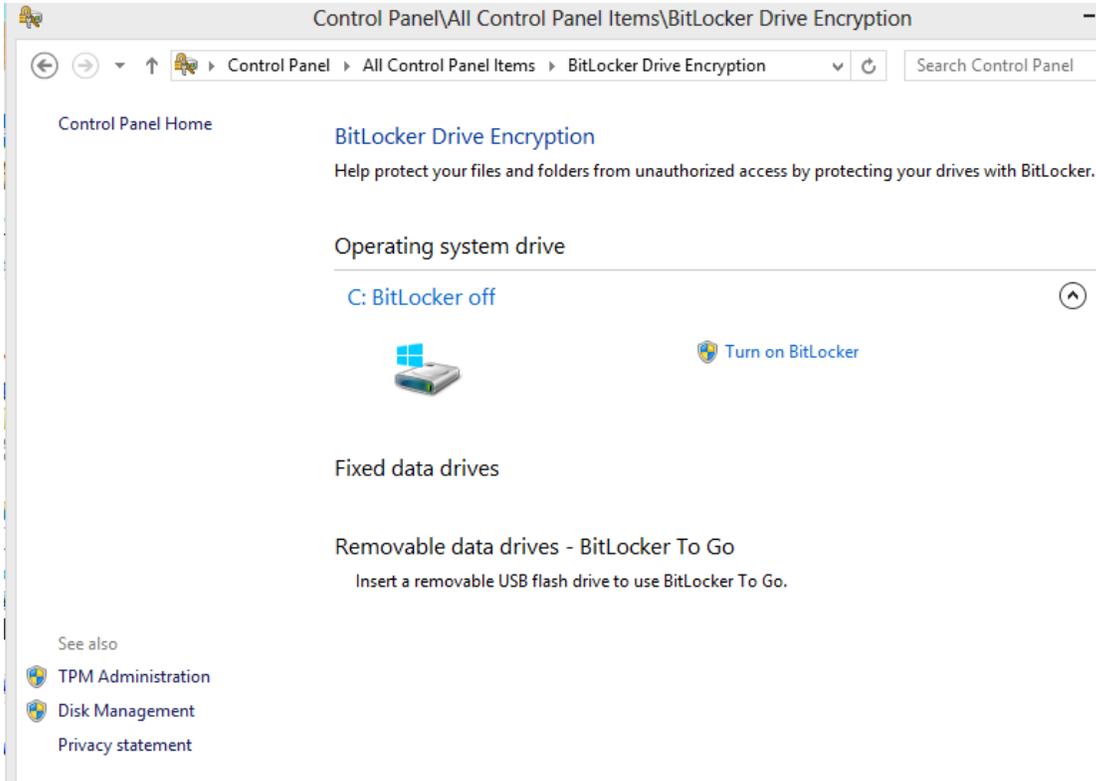
Right-click on the Disk and choose 'Convert to Basic Disk'. If that option is greyed out you might need to try a third-party solution like [EaseUS Partition Master Home](#).

# Windows 10 for Microsoft Office users

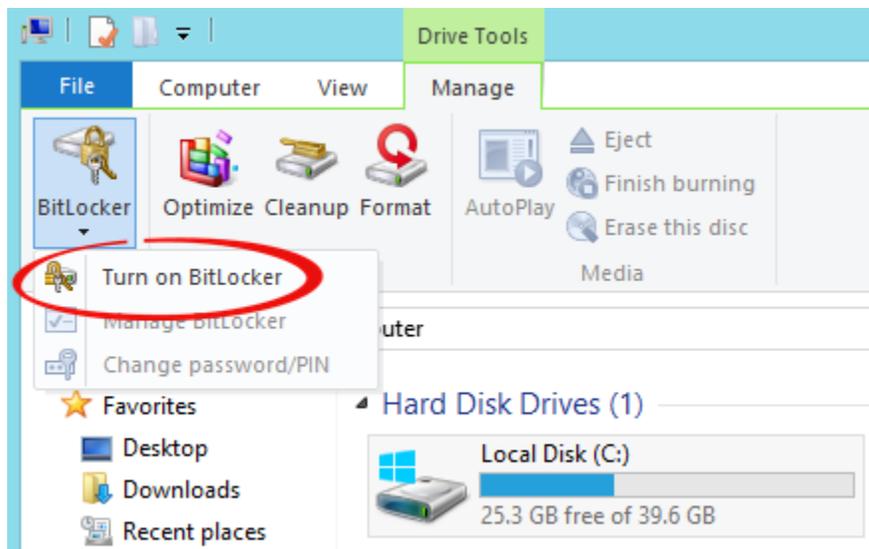
## BitLocker - BitLocker step by step

### WHERE TO BEGIN

Control Panel | BitLocker Drive Encryption is the starting place. The 'See Also' items on bottom left are a good place to start preparation for BitLocker.



Or open Explorer and the Computer list if drives. Click on a drive then the Manage tab on the ribbon | BitLocker | Turn on BitLocker.



# Windows 10 for Microsoft Office users

BitLocker - BitLocker step by step

## RECOVERY KEY

Next you need to carefully record the Recovery Key. The Recovery Key is essential for repairing or recovering data from a BitLocked drive.

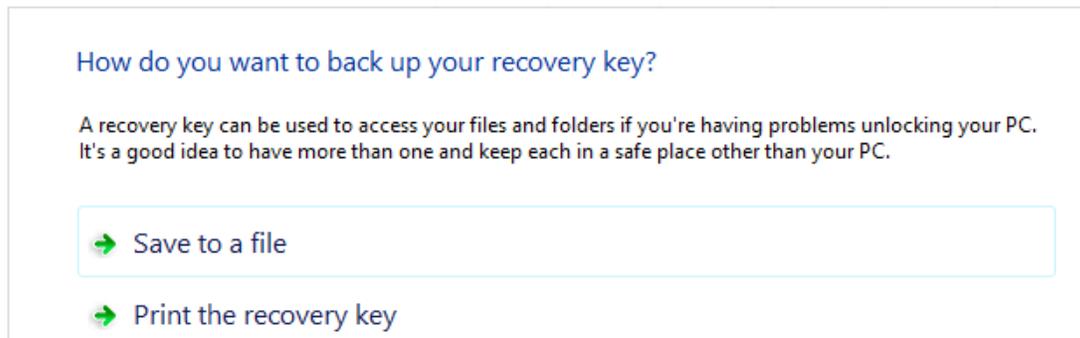
---

*Can't stress enough how important the Recovery Key is, lose it and you will lose everything on the encrypted drive.*

---

For that reason, it's best to store the Recovery Key using at least Save to a file but save to multiple locations.

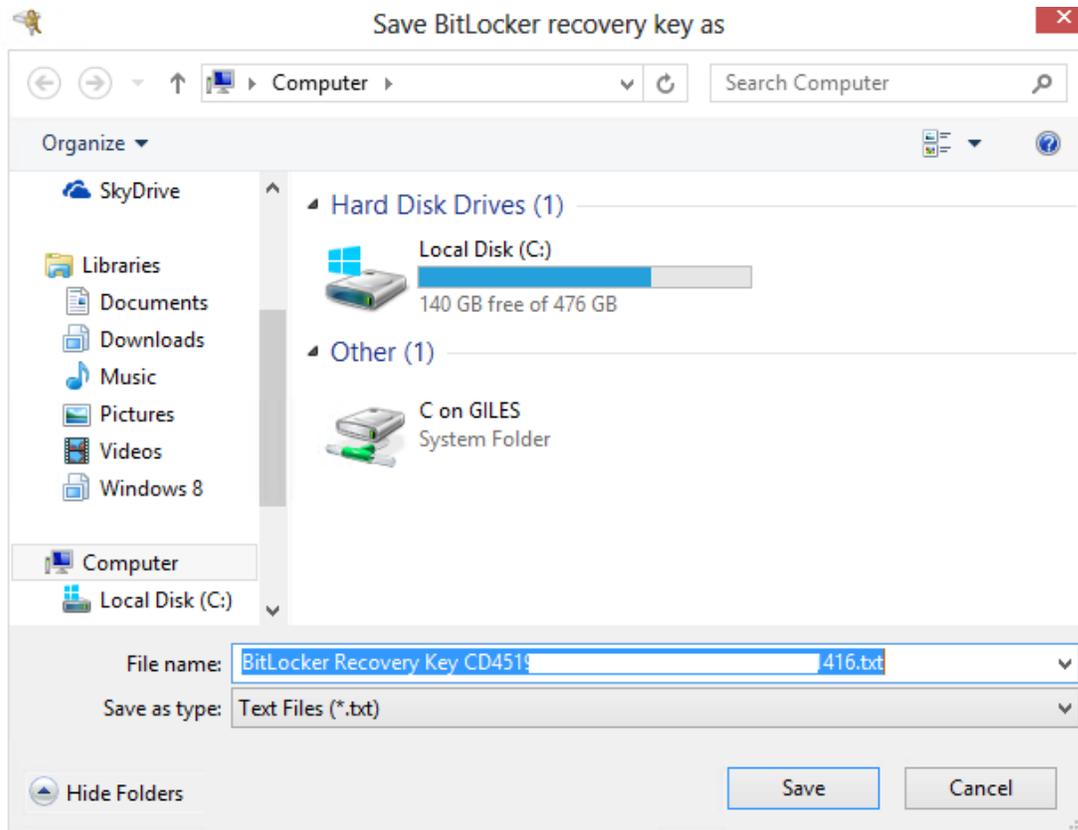
← BitLocker Drive Encryption (C:)



Choose 'Save to a file' and a standard File Save dialog is opened.

## Windows 10 for Microsoft Office users

BitLocker - BitLocker step by step



We suggest changing the file name to include something that clearly identifies which USB key you're encrypting. The string put in the file name by default is the recovery key ID, a unique string that identifies the removable drive. You can match the recovery key ID to the right recovery key.

The recovery key ID is good for computers, but not so useful for humans.

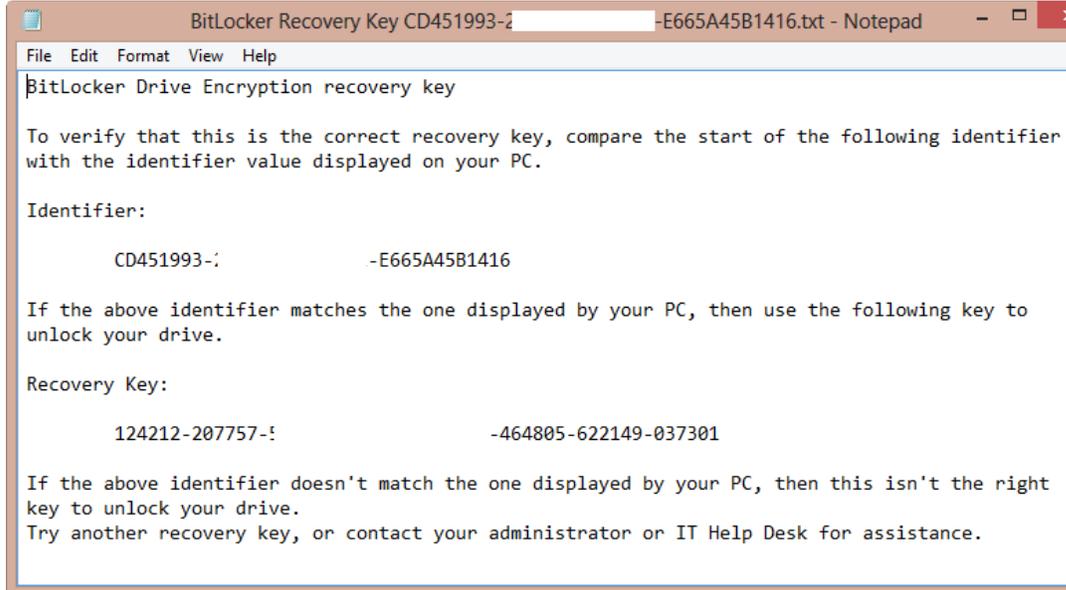
A more helpful file name might be

"BitLocker Recovery Key - Seagate 5GB - 5404B1A3-XXXX-6426057E215D.txt"

## Windows 10 for Microsoft Office users

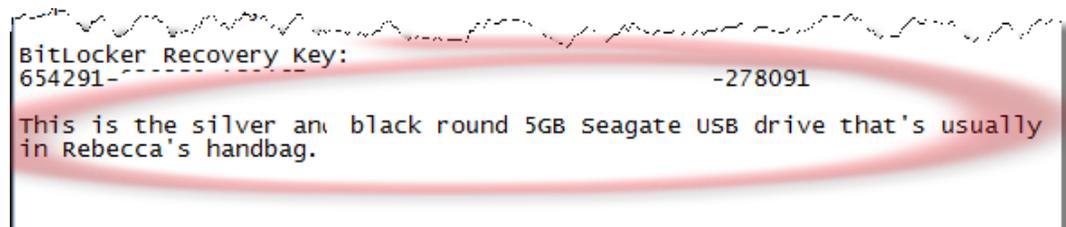
### BitLocker - BitLocker step by step

As you can see, the recovery key is saved as a text file.



That's both a good and a bad thing.

It's good because you could add more information to the text file to help identify it.



Not so good because any text file can be indexed by a desktop search program and exposed elsewhere.

By default, Windows saves the recovery key text file as 'Read Only'. If you edit the text you'll have to either change the file attributes or save the text with a different file name.

---

*Save the Recovery Key details in several locations ... just in case.*

---

If you have to restart the BitLocker process a different recovery key is created each time.

## Windows 10 for Microsoft Office users

BitLocker - BitLocker step by step

SOME OR ALL?

Next is the choice of encrypting the entire drive or only the sections with data written to them.

If you see this option then hardware encryption (by the SSD drive) is NOT enabled.



Follow the Microsoft suggestions in this case.

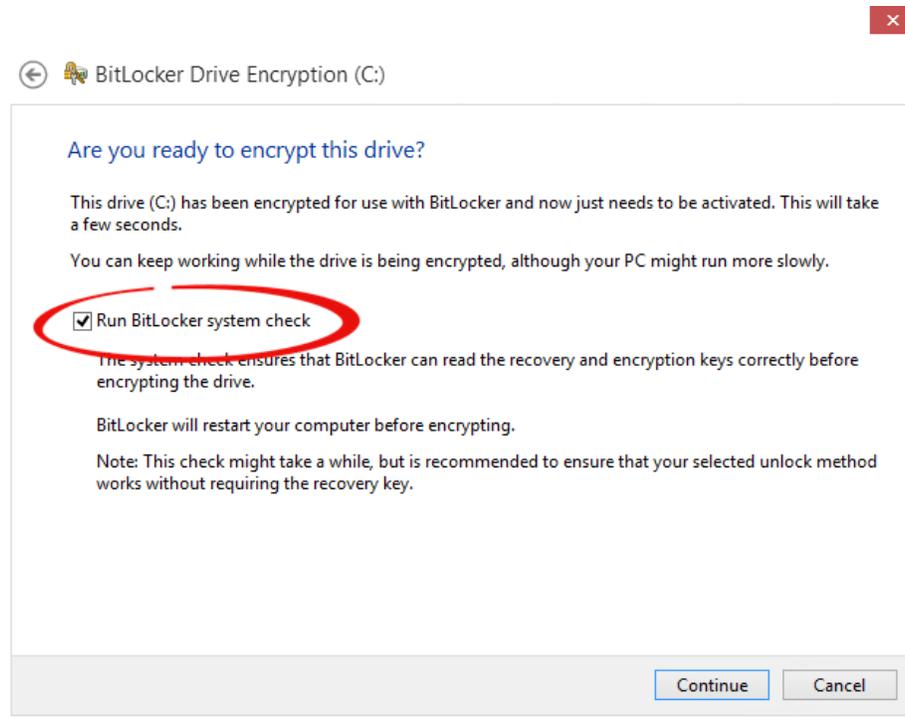
Computers already in use will have data in the 'empty' spaces. That's because 'deleting' a file doesn't usually remove the file data, it just marks the file as available for overwriting in the future. For that reason, it's prudent to encrypt the entire drive when it's been used for a while.

# Windows 10 for Microsoft Office users

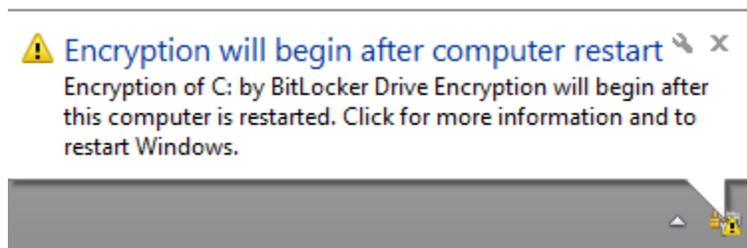
BitLocker - BitLocker step by step

GO!

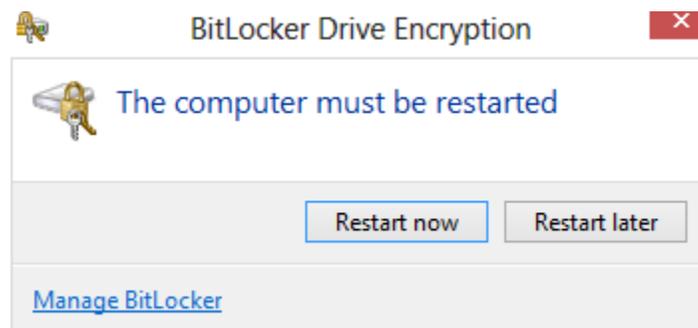
Next is the BitLocker System Check. This includes checking that the recovery key is safely stored on a USB key.



Make sure that the 'Run BitLocker system check' is checked, then click Continue.



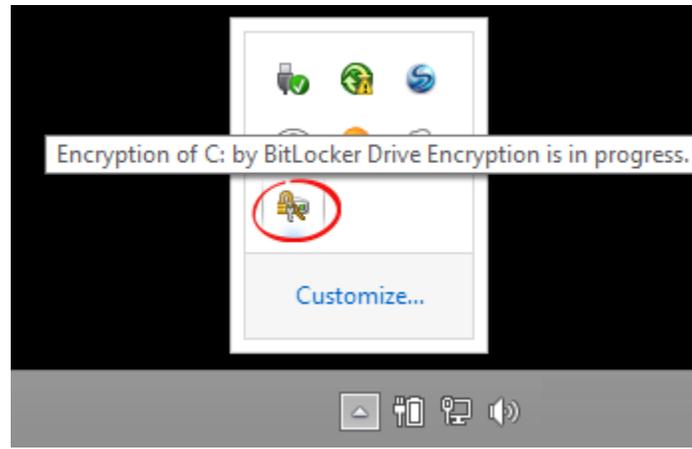
Click on the alert to see your, rather obvious, choices.



## Windows 10 for Microsoft Office users

BitLocker - BitLocker step by step

Windows will restart and you can login as usual. The drive encryption will happen in the background. You can see the progress from the alert in the taskbar.



At this stage, make sure that the computer is plugged into an AC power supply (assuming it's a laptop).

You can continue working while BitLocker is encrypting but most people leave it to run, perhaps overnight, with all applications shut-down. The latter isn't required but seems prudent to reduce the number of open files.

The initial encryption will take many hours. Much depends on the size and speed of the hard drive. The amount of free space on the hard drive doesn't make much or any difference to the time taken. As a guide, in our tests a 500GB standard drive took more than 6 hours to encrypt. An SSD drive of the same size took less than an hour.

---

*Don't sleep, hibernate or shut down your computer while the initial encryption is happening.*

---

## Windows 10 for Microsoft Office users

### BitLocker - Adding a PIN to BitLocker

After what only seems like an eternity, you'll have an encrypted drive:



Finally, reboot your computer to make sure the newly encrypted drive can start up.

You can return to Control Panel | BitLocker Drive Encryption to see the new options and confirm that the drive is protected with BitLocker.

#### Operating system drive

C: BitLocker on



- Suspend protection
- Back up recovery key
- Turn off BitLocker

That's just the start, now you can choose to add additional steps for opening the encrypted drive.

## ADDING A PIN TO BITLOCKER

Amazingly you have to edit group policies and go to an olden times 'DOS Box' to enable the PIN feature. It's amazing because Microsoft's own security recommendation is to use TPM plus PIN with BitLocker yet to follow that recommendation you need a hard-hat, torch and spelunker's license.

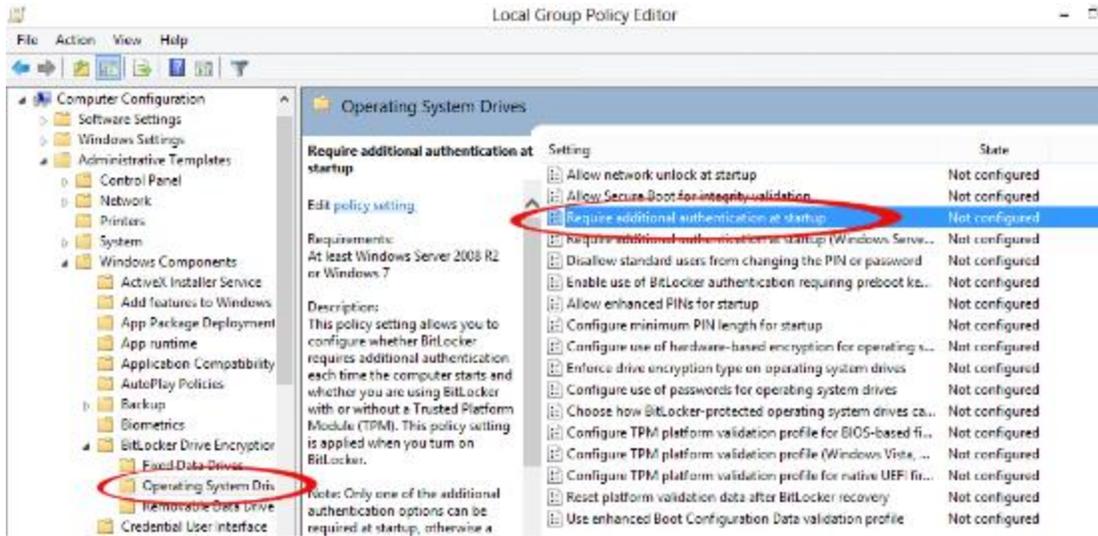
Go to the [Local Group Policy Settings](#). Click down to

Computer Configuration | Administrative Templates | Windows Components | BitLocker Drive Encryption | Operating System Drives

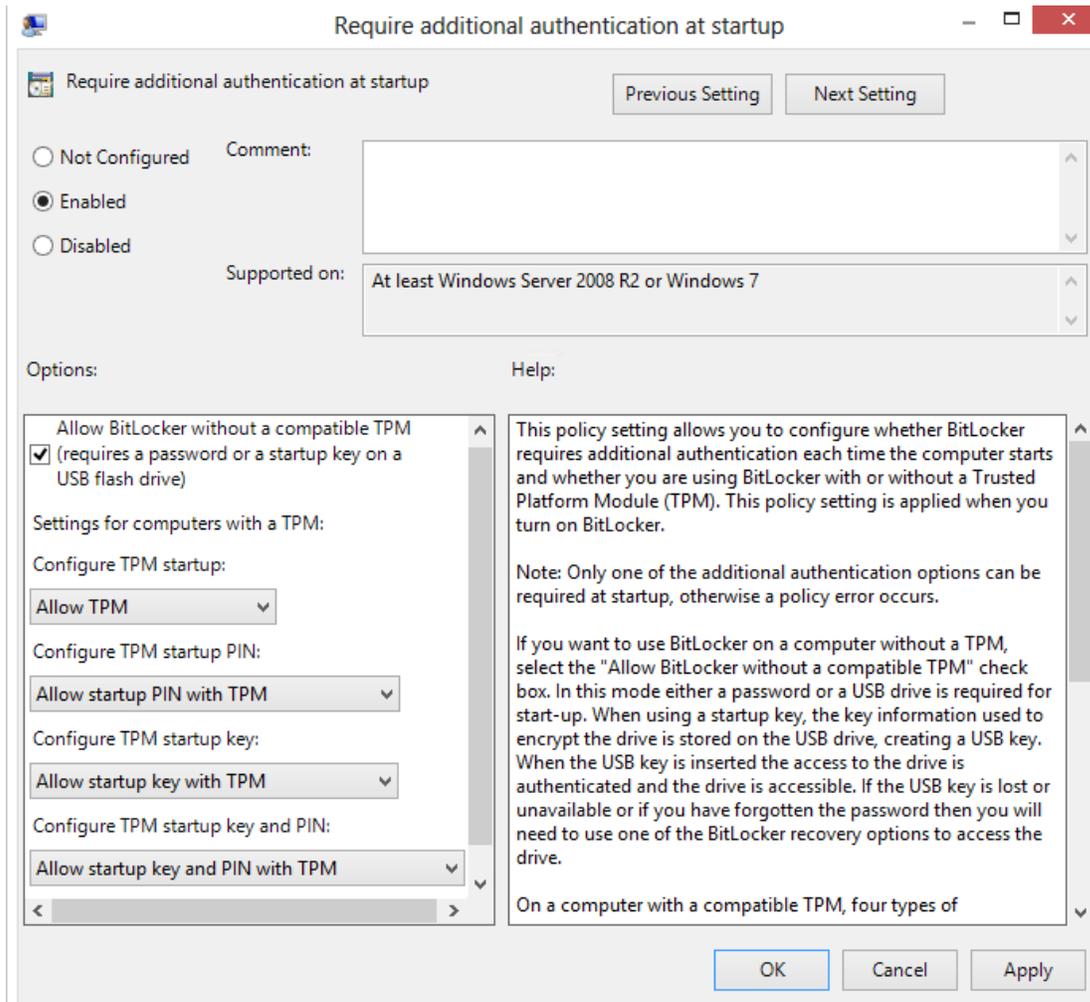
and finally 'Require additional authentication at startup'.

# Windows 10 for Microsoft Office users

## BitLocker - Adding a PIN to BitLocker



Here are the default settings when the policy is enabled:



That setting will let you control the PIN options on startup – note the difference between ‘Allow’ and ‘Require’ in some options. ‘Require’ means

## Windows 10 for Microsoft Office users

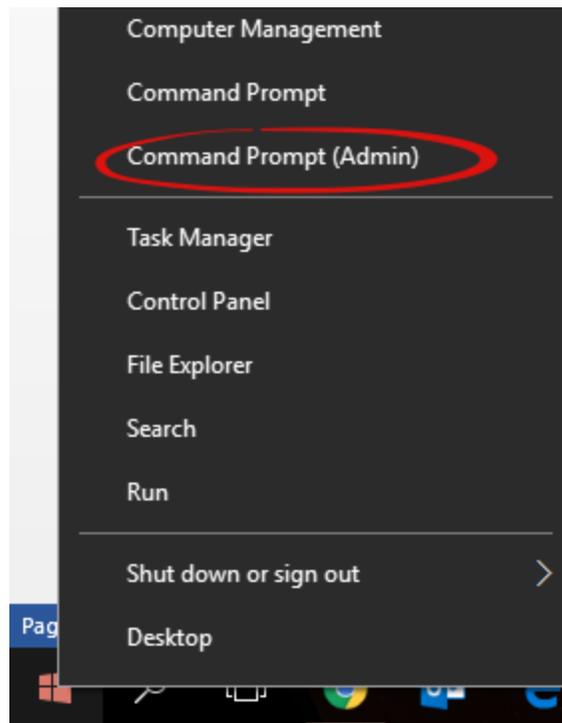
### BitLocker - Adding a PIN to BitLocker

compulsory, 'Allow' means there is an alternative. For example 'Allow startup PIN with TPM' enables that choice 'Require startup PIN with TPM' means you must have a TPM and PIN to unlock the drive.

We suggest you stick with the cautious default settings for this policy, they seem intended to let you access the drive from another computer if necessary.

Unfortunately changing the policy settings isn't enough, you now have to go a command prompt.

From the Start Menu, right-click and choose Command Prompt (Admin)



At the command prompt type the following:

```
manage-bde -protectors -add c: -TPMAndPIN
```

the text has to be precisely correct. Obviously, change the `c:` if you're dealing with another drive letter.

*If you didn't open the command prompt with administrator privileges then you'll get an error.*

## Windows 10 for Microsoft Office users

### BitLocker - Adding a PIN to BitLocker

```
CA: Command Prompt
Microsoft Windows [Version 6.2.9200]
(c) 2012 Microsoft Corporation. All rights reserved.

C:\Users\PeterDeegan>manage-bde -protectors -add c: -TPMAndPIN
BitLocker Drive Encryption: Configuration Tool version 6.2.9200
Copyright (C) 2012 Microsoft Corporation. All rights reserved.

ERROR: An attempt to access a required resource was denied.
Check that you have administrative rights on the computer.
```

You'll be prompted for the PIN to use.

```
CA: Administrator: Command Prompt - manage-bde -protectors -add c: -TPMAndPIN -
C:\WINDOWS\system32>manage-bde -protectors -add c: -TPMAndPIN
BitLocker Drive Encryption: Configuration Tool version 6.2.9200
Copyright (C) 2012 Microsoft Corporation. All rights reserved.

Type the PIN to use to protect the volume: _
```

As you type the PIN there is NO onscreen indication. After typing the PIN press Enter then type it again and press Enter again. If both PIN's match it will be applied to BitLocker.

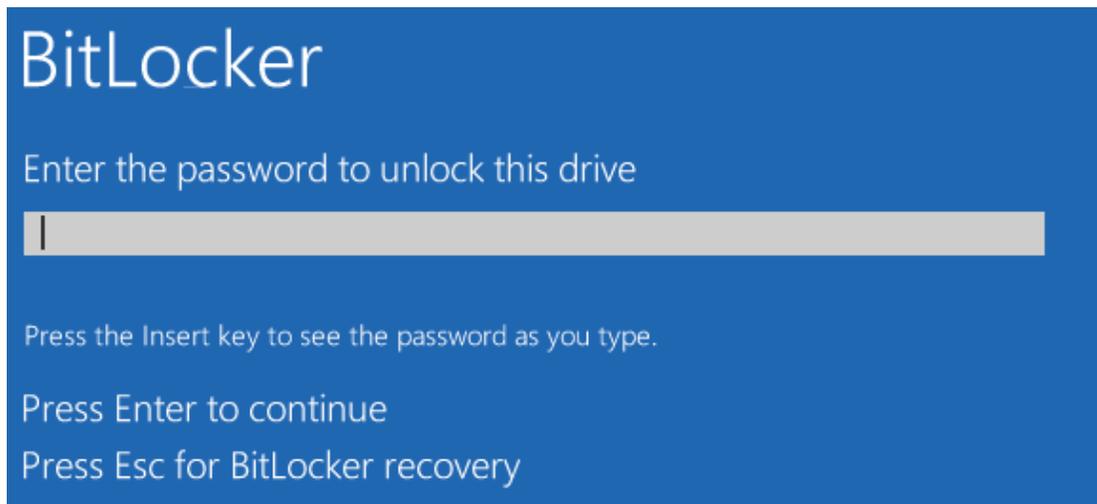
```
C:\WINDOWS\system32>manage-bde -protectors -add c: -TPMAndPIN
BitLocker Drive Encryption: Configuration Tool version 6.2.9200
Copyright (C) 2012 Microsoft Corporation. All rights reserved.

Type the PIN to use to protect the volume:
Confirm the PIN by typing it again:
Key Protectors Added:

TPM And PIN:
ID: {800EBD6E- -6681BF700378}

Key protector with ID "{908B4F14- }C51B}" deleted.
```

Now restart the computer to see the PIN in action.



## Windows 10 for Microsoft Office users

### BitLocker - Adding a PIN to BitLocker

Type in your PIN / password. Press Insert to see the letters as you type (good idea, Microsoft!)

With the correct PIN/password, Windows will start as normal.

### CHANGE PIN

You can change the PIN a lot more easily than creating one in the first place. Go to Control Panel | BitLocker Drive Encryption.

#### BitLocker Drive Encryption

Help protect your files and folders from unauthorized access by protecting your drives with BitLocker.

#### Operating system drive

C: BitLocker on



- Suspend protection
- Back up recovery key
- Change PIN
- Turn off BitLocker

Click on Change PIN

BitLocker Drive Encryption (C:)

### Change startup PIN

Choose a PIN that's 4-20 numbers long.

Old PIN

New PIN

Confirm new PIN

[Reset a forgotten PIN](#)

[What is a BitLocker Drive Encryption PIN?](#)

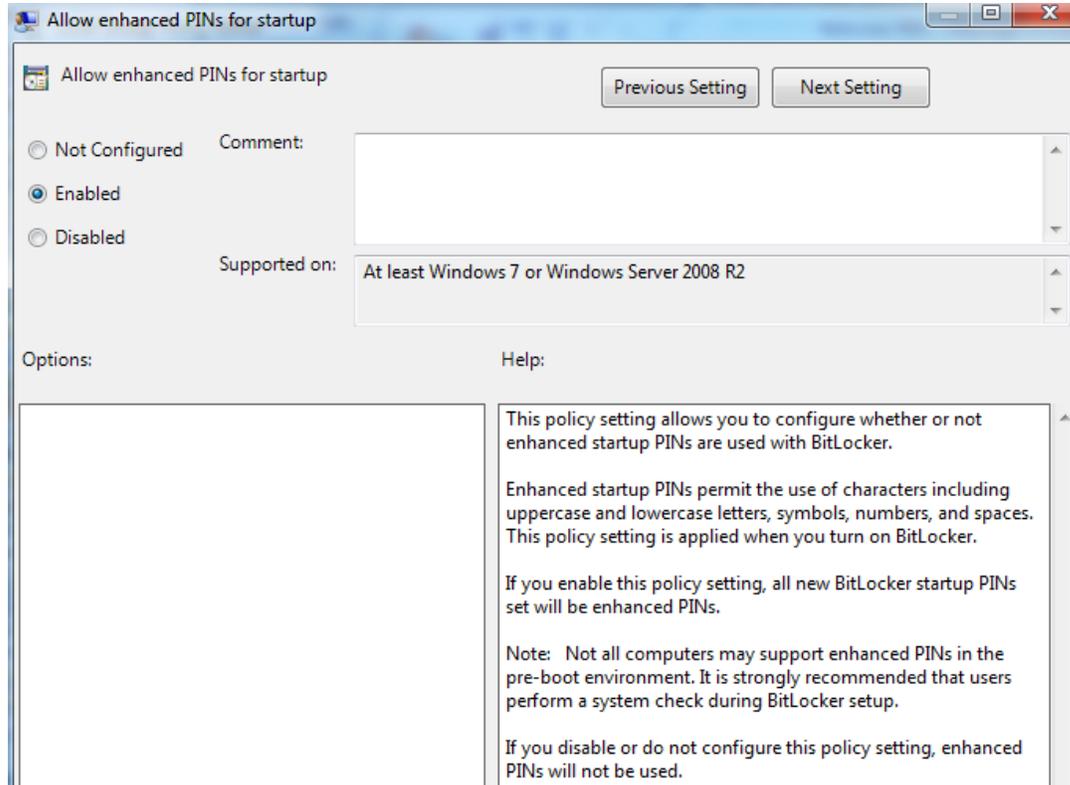
Enter the old PIN then the new PIN twice, then click Change PIN.

# Windows 10 for Microsoft Office users

## BitLocker - Without TPM module

### ENHANCED PIN

In the [Local Group Policy](#) template you can also change the PIN to a standard alphanumeric password ... aka 'enhanced PIN'.



A BitLocker system check should be done to ensure that enhanced PIN's are supported by the computer. If you're at all unsure then do NOT enable enhanced PIN's.

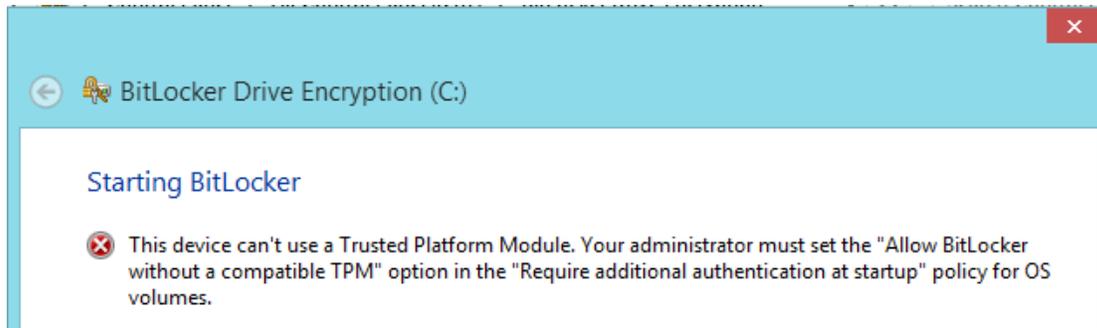
### WITHOUT TPM MODULE

If your computer does not have a TPM module included you can still use BitLocker however it is a lot more difficult and less secure than with a TPM.

Desktop computers and cheaper laptop/netbook computers don't have TPM modules. If you try to start BitLocker without a TPM in Windows it will stop you immediately:

# Windows 10 for Microsoft Office users

## BitLocker - Without TPM module

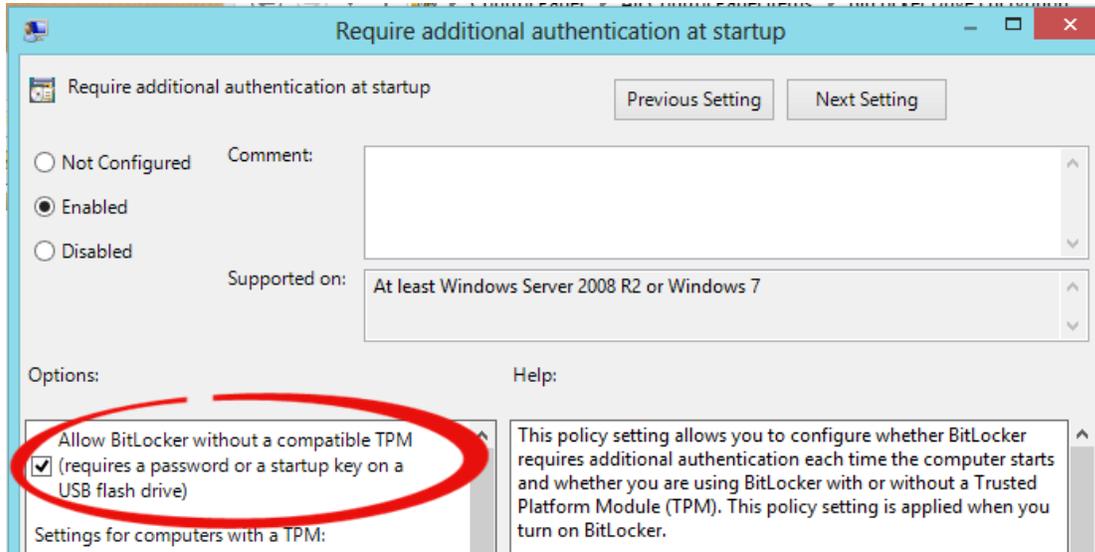


To run BitLocker without a TPM you need either a USB memory stick with you at all times or a password.

The USB key has the startup key stored on it. Lose the memory stick and you've lost the entire drive. If someone steals the computer and memory stick, they have the entire drive.

To begin you need to change the BitLocker default settings in the [Local Policy Editor](#). Click down to Administrative Templates | Windows Components | BitLocker Drive Encryption | Operating

System Drives and finally 'Require additional authentication at startup'. Make sure that 'Allow BitLocker without a compatible TPM' is checked.



---

*Before proceeding, make sure you've done all the preparation and backups recommended [earlier](#).*

---

## Windows 10 for Microsoft Office users

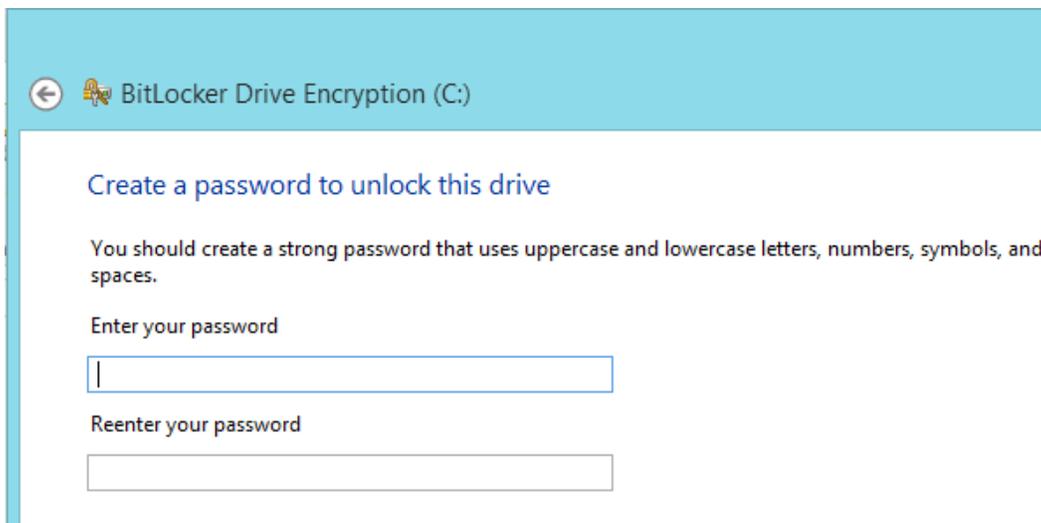
### BitLocker - Without TPM module

Then start the BitLocker system from the Control Panel, this is the first dialog you'll see:



As you can see, the startup options are via a USB Flash drive (it was called a Startup Key in Windows 7) or entering a password. That key is stored on a USB stick you have to insert when starting the computer (BitLocker has checked that USB storage is available before and during the boot sequence).

If you choose the password option, enter the password next.



The password needs to be 'strong' which Microsoft defines as follows:

# Windows 10 for Microsoft Office users

## BitLocker - Without TPM module

What makes a password or passphrase strong?

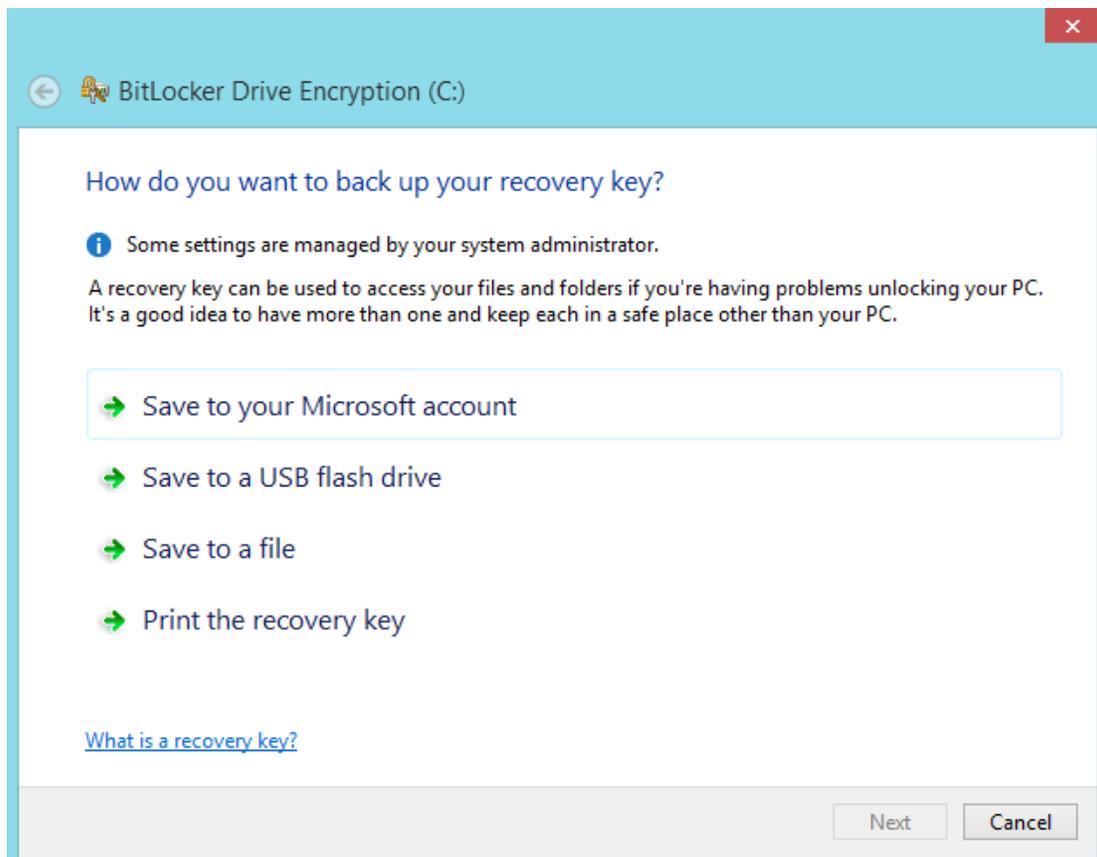
### A strong password:

- Is at least eight characters long.
- Doesn't contain your user name, real name, or company name.
- Doesn't contain a complete word.
- Is significantly different from previous passwords.

### A strong passphrase:

- Is 20 to 30 characters long.
- Is a series of words that create a phrase.
- Doesn't contain common phrases found in literature or music.
- Doesn't contain words found in the dictionary.
- Doesn't contain your user name, real name, or company name.
- Is significantly different from previous passwords or passphrases.

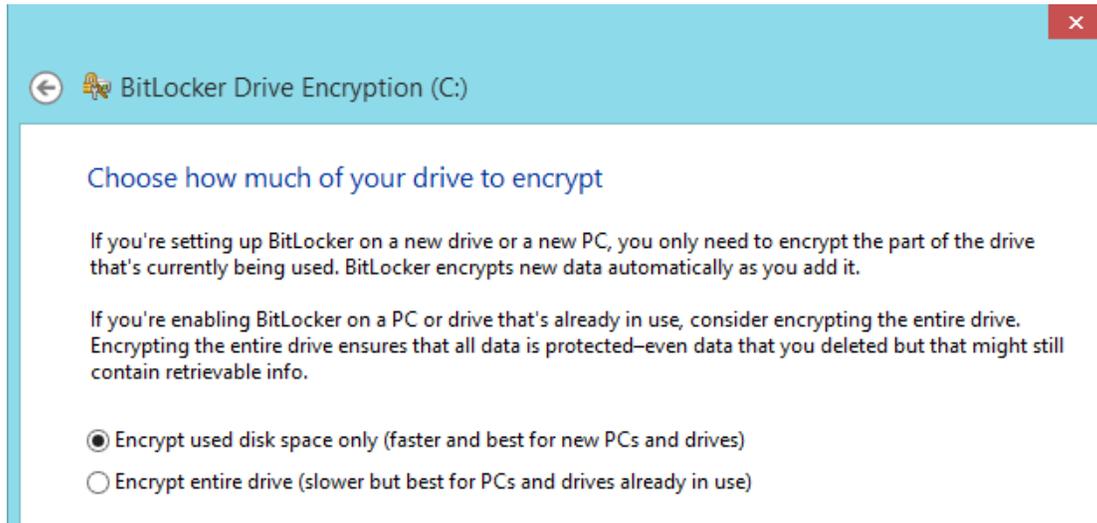
Then you have a chance to backup your recovery key – highly recommended.



## Windows 10 for Microsoft Office users

### BitLocker - Without TPM module

Next is the choice between the faster encryption of used disk space only or the entire drive.



We suggest encrypting the entire drive unless you're in a particular hurry.

Finally, BitLocker is ready to go. Unless you have a good reason, let the BitLocker system check run to ensure the necessary keys are working correctly.



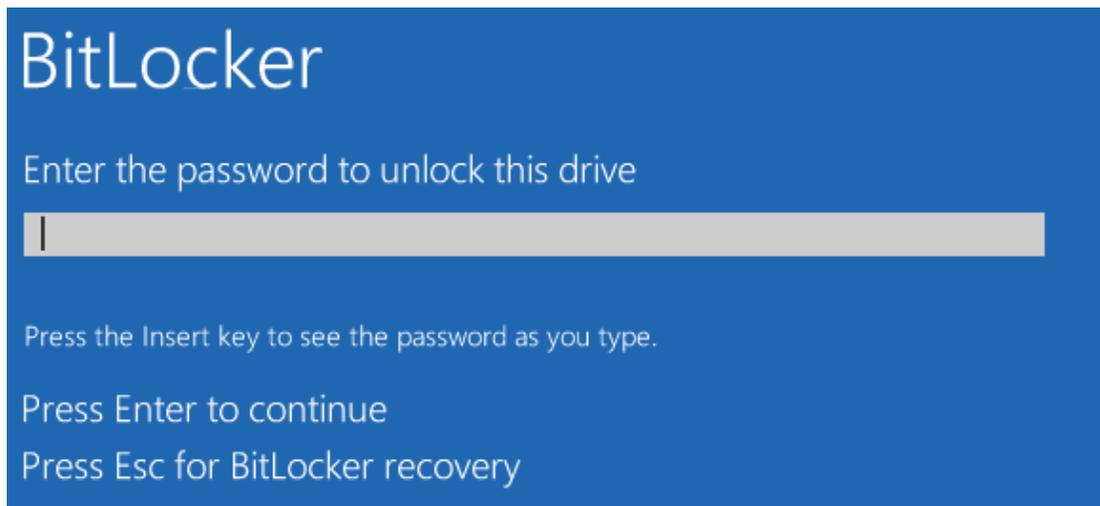
## Windows 10 for Microsoft Office users

BitLocker - Without TPM module

If prompted, restart the computer via Settings | Power | Restart



On restart you'll be asked for the password you entered during the BitLocker setup or the USB Flash Drive that has the key.



A nice touch here is that pressing the Insert key will show the password in plain text.

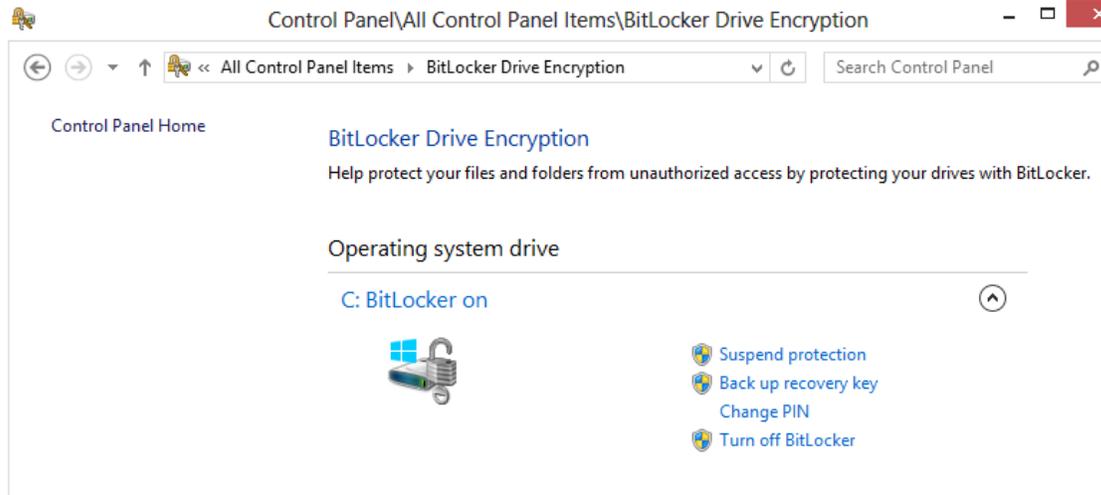
Then the initial encryption will take place, which can take many hours.

# Windows 10 for Microsoft Office users

## BitLocker - Manage BitLocker

### MANAGE BITLOCKER

For an encrypted drive, return to Control Panel | Bitlocker Drive Encryption to see your choices:



**Turn Off Bitlocker:** will decrypt the drive.

**Suspend Protection:** will temporarily stop encryption on the drive. Use this if you need to update the computer BIOS or core startup files.



## Windows 10 for Microsoft Office users

BitLocker - BitLocker ToGo

**Manage Bitlocker:** the options displayed depend on what is available according to the Group or Local Policy (see above). At minimum you'll be able to save or print the recovery key.



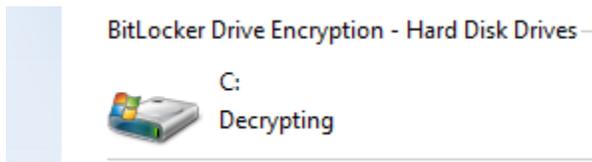
## STOPPING BITLOCKER

To decrypt a BitLocker drive go to Control Panel | BitLocker Drive Encryption and choose 'Turn off BitLocker'.



The decryption process is lengthy, at least as long as the original encryption process.

Once Decryption commences, you'll see the following



However, you do NOT see the progressive percentage of decryption as you do when the same drive was encrypting.

## BITLOCKER TOGO

This lets you encrypt a removable drive, most likely a USB memory 'stick' so it can only be accessed with the right software and password. BitLocker to go is available in Windows 10 Pro and Enterprise editions

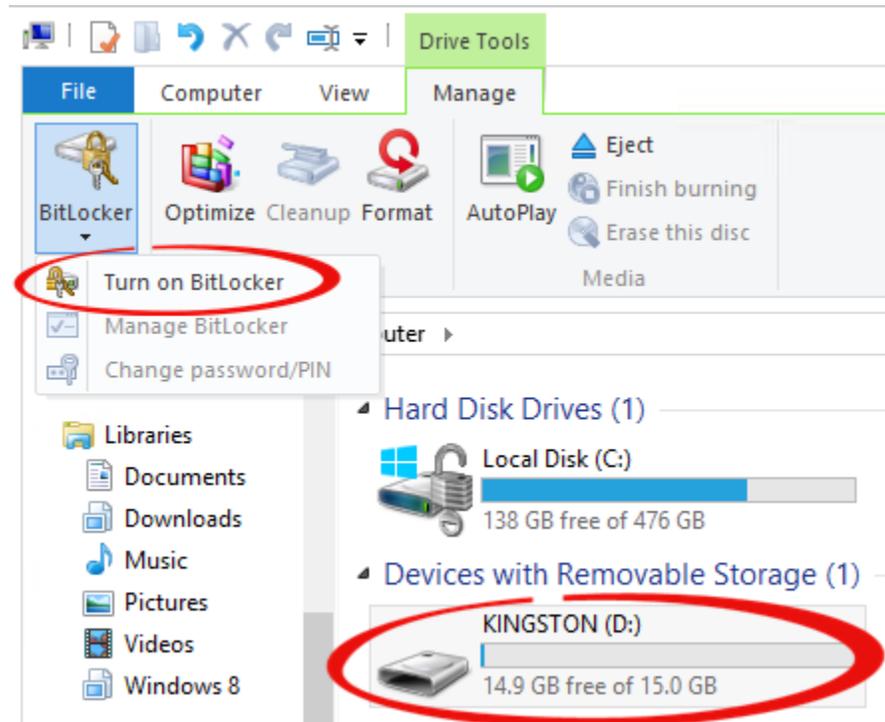
## Windows 10 for Microsoft Office users

BitLocker - BitLocker ToGo

You can apply BitLocker encryption to any removable drive, it does not need to be applied to hard drives on the computer first.

### STEP BY STEP

Select the removable drive in Explorer then Drive Tools | Manager | BitLocker | Turn on BitLocker.



It can take a little time for BitLocker to get ready:



Choose between a password and smart card access:

# Windows 10 for Microsoft Office users

## BitLocker - BitLocker ToGo

Choose how you want to unlock this drive

Use a password to unlock the drive  
Passwords should contain upper and lowercase letters, numbers, spaces, and symbols.

Type your password:

Retype your password:

Use my smart card to unlock the drive  
You will need to insert your smart card. The smart card PIN will be required when you unlock the drive.

How do you want to back up your recovery key?  
If you forget your password or lose your smart card, you can use your recovery key to access your drive.

→ Save to a file

→ Print the recovery key

See [Recovery Key](#) above for details. Once you have saved the recovery key click 'Next' to proceed.

### Choose how much of your drive to encrypt

If you're setting up BitLocker on a new drive or a new PC, you only need to encrypt the part of the drive that's currently being used. BitLocker encrypts new data automatically as you add it.

If you're enabling BitLocker on a PC or drive that's already in use, consider encrypting the entire drive. Encrypting the entire drive ensures that all data is protected—even data that you deleted but that might still contain retrievable info.

- Encrypt used disk space only (faster and best for new PCs and drives)
- Encrypt entire drive (slower but best for PCs and drives already in use)

Again, you have the choice of [Some or All](#) if in doubt choose 'Encrypt entire drive'.

## Windows 10 for Microsoft Office users

BitLocker - BitLocker ToGo

### Are you ready to encrypt this drive?

You'll be able to unlock this drive using a password.

Encryption might take a while depending on the size of the drive.

Until encryption is complete, your files won't be protected.

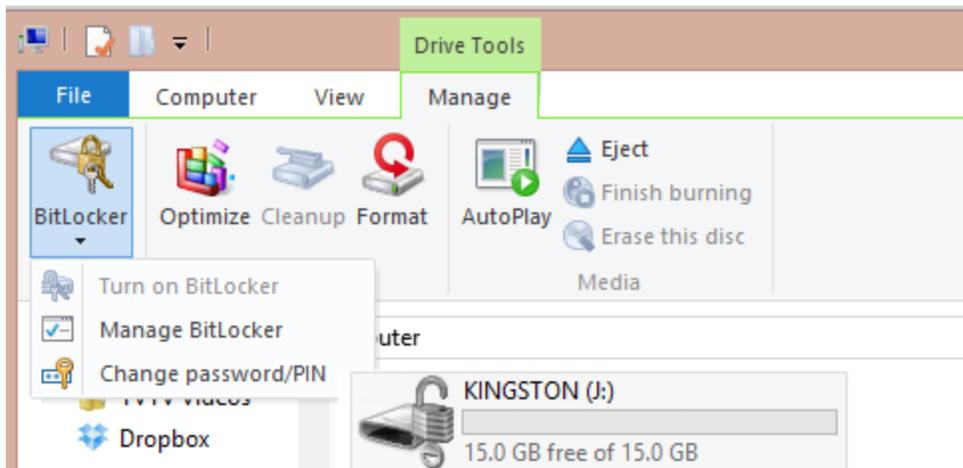
Click 'Start encrypting' and wait.



You can keep working while the initial encrypting is taking place. Don't remove the drive or shut down the computer without pausing and removing the USB drive first.

As a guide: an empty 15GB USB 2 drive took 10 minutes to complete.

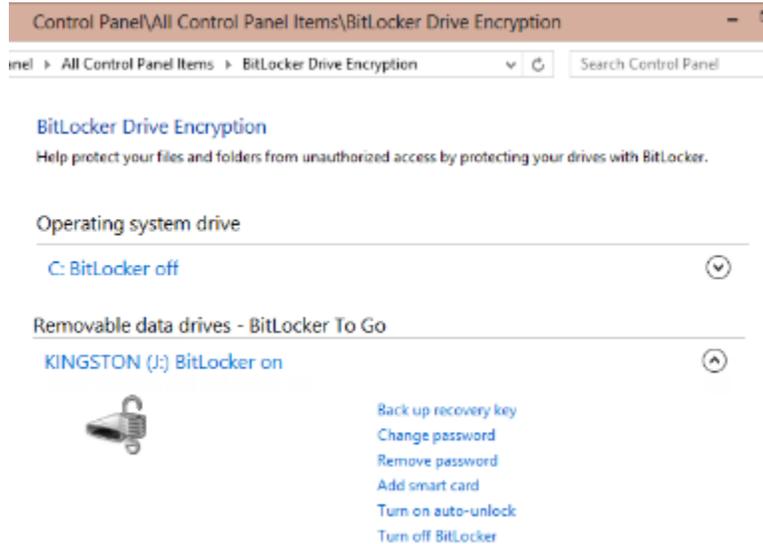
Once completed, return to Explorer and find the removable drive again.



## Windows 10 for Microsoft Office users

### BitLocker - BitLocker ToGo

The drive icon has changed and the BitLocker menu now shows 'Change password/PIN' and 'Manage BitLocker':

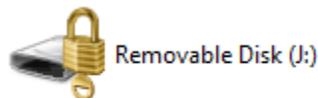


All the options are explained earlier in this chapter except 'Turn on auto-unlock'.

### UNLOCKING

Without the automatic unlock option, you'll be prompted to unlock each time you plug the USB device in.

And in Explorer you can't even see what size the drive is.



Try to access the drive and you're prompted for password.

### AUTO-UNLOCK

'Auto-Unlock' effectively stores the access password on the computer. When you insert the removable drive it will automatically become available.

You can turn on auto-unlock from the Control Panel | BitLocker Drive Encryption while the removable drive is plugged in. Or it's a 'More Option' when unlocking the drive.

# Windows 10 for Microsoft Office users

BitLocker - BitLocker ToGo

## TURN OFF BITLOCKER TO GO

If you decide later to remove Bitlocker from the removable drive, go to the Bitlocker Drive Encryption control panel applet.



Select the removable drive and choose 'Turn off Bitlocker'.

### BitLocker Drive Encryption

Help protect your files and folders from unauthorized access by protecting your drives with BitLocker.

#### Operating system drive

C: BitLocker off



#### Removable data drives - BitLocker To Go

KINGSTON (J:) BitLocker on



- Back up recovery key
- Change password
- Remove password
- Add smart card
- Turn off auto-unlock
- Turn off BitLocker



## Windows 10 for Microsoft Office users

### BitLocker - Extras

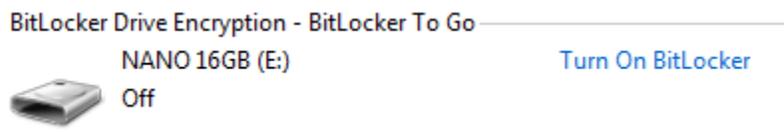
When the dialog box says 'considerable time' they aren't kidding. In our tests the decryption process takes about the same time as the original encryption did.

## EXTRAS

### IPOD AND OTHER DEVICES

In short – don't. Many MP3 players connect via a USB socket and appear in Windows as an external drive.

For example, here's my Apple iPod Nano as it shows up in the BitLocker configuration window:



Just because it shows up in the BitLocker window doesn't mean you should turn the feature on.

In most cases, applying BitLocker to a media device will totally disable the device, possibly permanently.

BitLocker To Go should only be applied to storage only devices like USB memory sticks and portable drives.

### BITLOCKER STATUS

The standard BitLocker dialog in Control Panel is enough for most people but if you want more detail about the encrypted drive open a Command Prompt with administrator privileges and type

```
manage-bde -status
```

## Windows 10 for Microsoft Office users

BitLocker - Extras

```
Administrator: Command Prompt
C:\WINDOWS\system32>manage-bde -status
BitLocker Drive Encryption: Configuration Tool version 6.2.9200
Copyright (C) 2012 Microsoft Corporation. All rights reserved.

Disk volumes that can be protected with
BitLocker Drive Encryption:
Volume C: [ ]
[OS Volume]

Size: 476.60 GB
BitLocker Version: 2.0
Conversion Status: Fully Encrypted
Percentage Encrypted: 100.0%
Encryption Method: AES 128
Protection Status: Protection On
Lock Status: Unlocked
Identification Field: Unknown
Key Protectors:
    Numerical Password
    TPM And PIN
```

### BITLOCKER TO GO READER FOR VISTA AND XP

Any removable drive with BitLocker encryption can be opened on a Windows 7, 8 or 10 computer (any type of Windows) plus the right password.

For Windows Vista and Windows XP you need extra software to read an encrypted drive.

BitLocker to go Reader is available free from Microsoft [here](#).

BitLocker To Go Reader

Select Language:

The BitLocker To Go Reader is an application that provides users read-only access to BitLocker-protected FAT-formatted drives on computers running Windows XP or Windows Vista.

Unfortunately, the software only lets you read a BitLocker removable drive – there is no write access.

### RECOVERY PASSWORD VIEWER FOR ACTIVE DIRECTORY

If you have your recovery key saved in an organizations Active Directory you can add this tool as a management snap-in to view any saved keys.

Download from Microsoft [here](#).

## Windows 10 for Microsoft Office users

BitLocker - Extras

### BITLOCKER REPAIR TOOL

If a hard drive is damaged or corrupted the standard recovery tools won't work with a BitLocker encrypted drive.

Microsoft provides a BitLocker Repair Tool download [here](#). This tool might help recover data from the damaged drive. The recovery key for the drive is also necessary.

# ENCRYPTING FILE SYSTEM

The Encrypting File System (EFS) lets you encrypt folders and individual files so that anyone who tries to access the hard drive directly (i.e. without a Windows login) cannot read the encrypted locations.

This lets you add a level of protection to your Office documents to prevent them being read if your computer is stolen. Without your Windows login, EFS protected files/folders are much harder to access.

EFS works at the Windows system level; any programs including Microsoft Office work normally and are unaware that files are encrypted on the hard drive.

EFS requires a NTFS formatted drive, which most modern hard drives are by default.

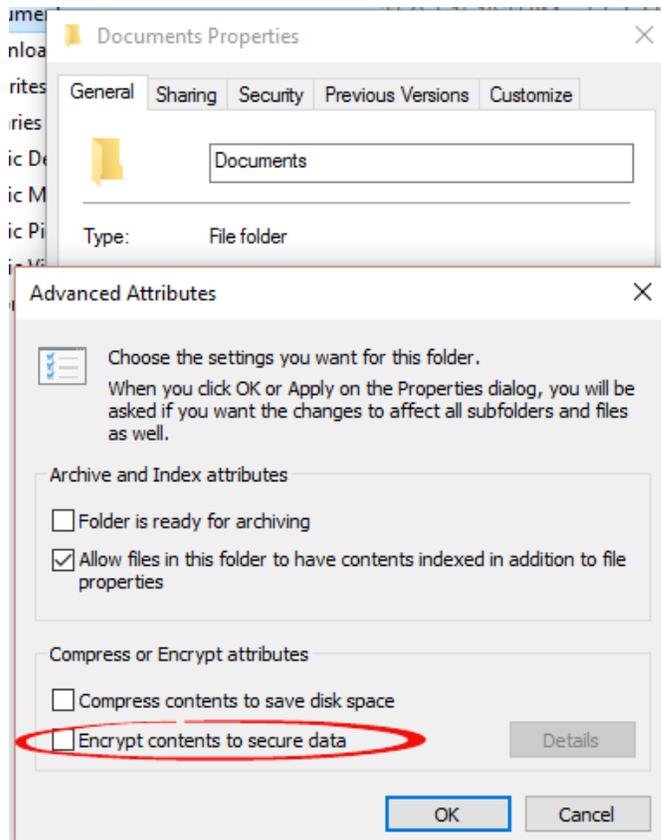
This feature has been in Windows for many years. If you're already familiar with EFS then you're ready to go with Windows 10's implementation.

You may have noticed or even used EFS without realizing it.

## Windows 10 for Microsoft Office users

### Encrypting File System - Enabling EFS

Right-click on any folder or file in Explorer then choose Properties | General | Advanced. There's an option 'Encrypt contents to secure data' which is really EFS:



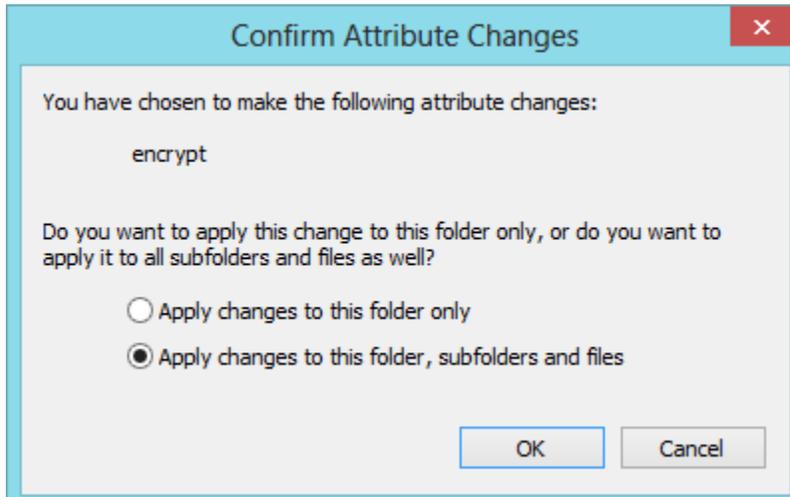
## ENABLING EFS

To enable EFS you simply choose a file or folder in Explorer and right-click then choose Properties, select the 'Encrypt contents to secure data' option (see above image). Click OK then either OK or Apply.

## Windows 10 for Microsoft Office users

### Encrypting File System - Enabling EFS

If you've chosen a folder with sub-folders you're given the choice about what to encrypt:



In most cases you'll want to choose the second option and encrypt everything in that folder tree.

Selecting a single file in a non-EFS folder will generate this warning:



As recommended, it is best to encrypt entire folders.

When you click 'OK' the initial encryption will take place. This may take some time depending on the size of the files and your computer speed. You can continue to work on your computer while this is happening.

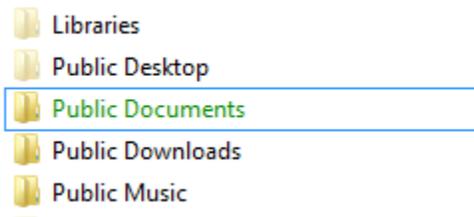
All the files must not be opened by any program during the initial encryption, you'll get an error if EFS can't access a file. Close all Office documents that are open in the folders to be encrypted.

If you've encrypted a folder, then any new files placed in that folder will be encrypted automatically.

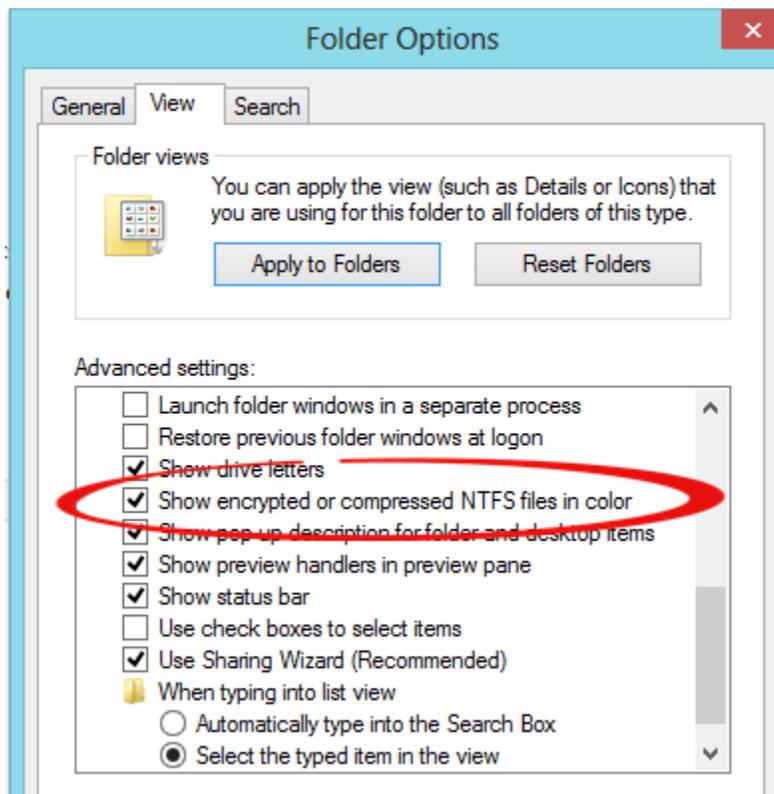
## Windows 10 for Microsoft Office users

Encrypting File System - Encryption Key

Encrypted folders appear in green within Explorer:



You can change this in Explorer View | Options | Change folder and search options | View and UNcheck the option 'Show encrypted or compressed NTFS files in color'.



## ENCRYPTION KEY

When you first use EFS you'll be prompted to back up file encryption key.

This is a better and clearer version of the special EFS certificate that was in past versions of Windows.

Normally you won't need the encryption certificate and key because they are linked to your Windows login. When you start the computer with a correct name/password combo, Windows can access the associated EFS details.

## Windows 10 for Microsoft Office users

### Encrypting File System - Encryption Key

But if you lose the login, then the backup of the EFS certificate/key is essential. For example, the computer is broken and you want to access the hard drive from another machine as an extra drive.

Click on the warning to see the options:



Click on 'Back up now' and you'll be taken to the Certificate Export Wizard.



## Windows 10 for Microsoft Office users

### Encrypting File System - Disabling EFS

Follow the steps and save the details to a safe external location.

## DISABLING EFS

If you want to disable EFS, simply select the file/folder go back to the Advanced Attributes dialog and uncheck the 'Encrypt contents to secure data'.

A better and more effective version of EFS is BitLocker, available in the Pro and Enterprise editions of Windows.

## HYPER-V

Hyper-V is the Windows system for running virtual machines. That sounds scary, but believe us that virtual machines are the very best way to run separate versions of Microsoft Office.

Virtual Machines (VM's) are a 'computer within a computer'. It's clever software that mimics the way hardware (processors, memory etc) work so you can run a separate operating system (like Windows XP) on a computer that's running another operating system (Windows 10).

Virtual machines are a more portable, stable and reliable option than the entanglement of 'side-by-side' Office versions installed on a single computer. They are also great for testing and development because you can 'roll back' the VM to a previous state.

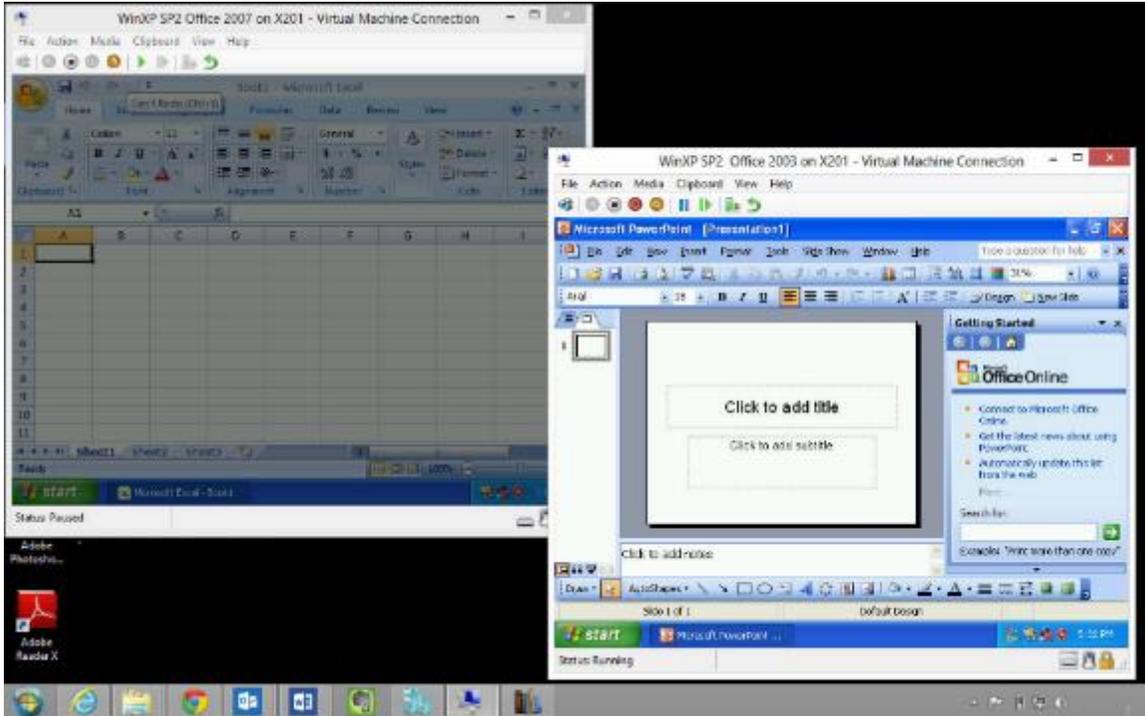
There's a lot that can be involved in Hyper-V or other VM technology. In this book we'll focus on the basics as they apply to individuals, especially anyone wanting to run multiple versions of Microsoft Office.

We'll take you step-by-step how to install, configure and run a new virtual machine with Windows and Office installed.

The screenshot below shows Hyper-V in practice with two versions of Office running in virtual machines on the same machine as well as a third version on the physical computer.

## Windows 10 for Microsoft Office users

### Hyper-V - Disabling EFS



The top left Hyper-V window is a suspended machine with Office 2007. Bottom right is another machine with Office 2003. On the taskbar you can see icons for Outlook 2013 and Word 2013.

All these versions of Office and possibly more can run on a single computer but totally independently of each other.

---

*For anyone who needs to check compatibility across multiple versions of Office, then virtual machines are the way to go. That's why we're devoting an entire chapter to Hyper-V this book.*

---

Earlier versions of Windows had a scaled down and less powerful virtual machine system in the form of Virtual PC and the 'Windows XP mode' in Windows 7 (which was merely a pre-supplied Windows XP virtual machine).

Some of the suggestions we'll make are not in the official Microsoft documentation but instead are based on our years of working with virtual machines. We hope our extra tips will save you time and hassle managing multiple machines.

# Windows 10 for Microsoft Office users

Hyper-V - How Hyper-V can help you

---

*Hyper-V comes with Windows **Pro or Enterprise 64-bit** editions only. If you have a cheaper Windows bundle you can upgrade to Pro or buy VMWare Workstation separately.*

---

## HOW HYPER-V CAN HELP YOU

Virtual machines (VM) give you flexibility and portability that's not available with a physical computer, even if it has multiple boot enabled to let you start several versions of Windows.

In fact, multiple boot computers, once common among IT professionals, has pretty much gone the way of the dinosaur because VM's are so much better. For people needing to run multiple versions of Office then it's a godsend:

**Portability** – a virtual machine can be moved or copied to another computer with Hyper-V and started up just where you left off. You can setup a VM for each version of Office and simply move the VM to another computer without the hassle of reinstalling Office.

**Isolation** – each VM is effectively a separate computer which means you can operate software on a VM that might otherwise conflict with the physical machine's software. The most obvious example of this is Outlook which can only have one version on a computer. Using virtual machines, you can have multiple versions of Outlook on one physical computer – one Outlook on the physical computer and other Outlook's each on a VM.

**Flexibility** – want more memory for the virtual machine? Just change the VM settings and it's yours. Want more processing power? Add a virtual processor or change the priority of existing CPU's. Adding more disk space to a VM is simple; either by adding another virtual disk or increasing the size of the existing virtual disk.

**Suspend** – unlike a physical computer, you can pause or suspend a virtual machine then start it running again exactly where it left off. Somewhat like Sleep or Hibernate on a laptop, but faster.

**Save** – similarly you can Save a VM, in effect 'freezing' it from running and saving the VM to disk. At any later time, you can open the VM and it'll resume right where it left off.

**Flexibility** – the snapshot feature lets you capture or save the VM state at a particular point then revert to that point later, losing any temporary changes you've made. Use this to test Office then revert to 'clean' pre-test settings.

## Windows 10 for Microsoft Office users

### Hyper-V - Need to know

**Isolated Network** – each virtual machine is totally isolated from other VM's, the physical computer and the Internet except as you allow. With a mouse-click you can disconnect a VM from the network.

**Private Networking** – advanced users can create private networks to let two or more VM's link up between them without connecting to the physical local network or the Internet. You can test a link between Office programs or data on separate computers by running separate linked VM's at the same time. A common scenario is a VM with SQL Server and another VM with Access or Excel accessing the SQL data.

**Private computing** - for some sensitive or secret work you could use a virtual machine – at the end of your work the VM can be reverted to a previous snapshot and all record of the recent work is deleted.

**Compatibility** - sometimes you need a program that can't run under modern Windows. Or it is difficult to migrate to a new computer with all its settings and configuration intact. Some of us even have DOS accounting packages that we rely on. All these can be put in a virtual machine. Aside from compatibility you can move the program in its working state on a VM between computers.

**Guest Use Computer** – if you have visitor who wants to do some web browsing etc., one option is to open a prepared virtual machine that they can use without interfering with your regular computer.

Virtual machines are like Office documents in that you can move or copy them to another computer and then open with compatible software.

A basic virtual machine consists of a virtual hard drive (.VHDX file in Hyper-V) and a settings file (.XML) that tells Hyper-V how to configure the virtual machine. There are other working files like snapshots and temporary files.

Hyper-V isn't new technology. It's been available in the last few releases of Windows Server and is heavily used on servers around the world. For Windows it looks like Microsoft has pretty much just copied the server based Hyper-V across. That means the interface and settings are more suitable for server infrastructure than individual users. That's why this chapter will recommend more than usual changes from defaults.

## NEED TO KNOW

Part of learning about virtual machines is getting used to some new terminology which is necessary to distinguish the different computers or machines running on a single computer.

# Windows 10 for Microsoft Office users

Hyper-V - Need to know

## DEFINITIONS

### HOST

The Host machine is the physical computer you're using. Host and physical are usually interchangeable.

For the purposes of this book, the host is a Windows 64-bit physical computer.

### GUEST

A guest machine is a virtual machine.

One host computer can have many guest operating systems running at the same time, the usual limit being available memory.

In this book, the guest operating system can have any version of Windows. We'll use Windows XP for our main demonstration.

Guest machines can have either 32-bit or 64-bit operating systems depending on your need.

### VM

Merely an acronym for Virtual Machine.

### VHD

A Virtual Hard Disk. A VHD is a single physical file or series of files that appear to the virtual machine as a standard hard drive.

Hyper-V once used .VHD as the file extension too but Windows 8 Hyper-V virtual drives use VHDX extension.

## MEMORY

Hyper-V uses up a lot of memory which is why it's only available with 64-bit versions of Windows Professional or Enterprise. 32-bit versions are limited to 4GB of RAM which isn't usually enough for regular Hyper-V use.

When you run a virtual machine you need the entire memory allocation of the VM available in the host machines RAM plus space for any other software running on the host machine (including Hyper-V itself).

For example if you run a VM with 4GB of RAM setting then you need at least 4GB of memory available on the computer in addition to whatever the host uses. That means a physical computer with at least 6GB of RAM.

## Windows 10 for Microsoft Office users

Hyper-V - Need to know

---

*If a virtual machine is running slowly, the first place to look is memory allocation. If the physical computer doesn't have enough RAM it'll use the paging file to handle the excess demand. The Page file works well for regular use but will slow a virtual machine down to a crawl.*

---

You can track the memory usage from the Windows Resource Monitor (Control Panel | All Control Panel Items | Performance Information and Tools | Advanced Tools).

The [Dynamic Memory](#) option for Hyper-V virtual machines can reduce the memory necessary for a VM and is useful especially when available memory is in short supply.

Physical / Host computers will need more than usual memory to fit in virtual machines running with 2GB or more of memory for each one. You can run Windows with a virtual machine or two in 4GB of physical memory but you have to watch the memory closely. Increase the physical memory to 8GB or higher will give your programs and virtual machines plenty of room.

---

*If buying a new computer that will run virtual machines, look for a computer with at least 6GB or 8GB of RAM and perhaps space for more memory to be installed later.*

---

### DYNAMIC MEMORY

As mentioned earlier, Dynamic Memory is a Hyper-V feature to let a virtual machine take up less physical memory. Physical memory is given to the VM depending on need, instead of a fixed allocation of RAM for the entire time the VM is running.

The VM operating system always shows that it has the maximum available RAM. Hyper-V Dynamic Memory runs in the background to share physical memory among the running VM's.

Dynamic Memory is ideal when you have two or more VM's running, though not all guest operating systems can use Dynamic Memory. If it's not compatible the feature will be disabled automatically so you can turn it on and let Hyper-V work it out.

Compatible guest OS for Dynamic Memory (with suggested startup RAM):

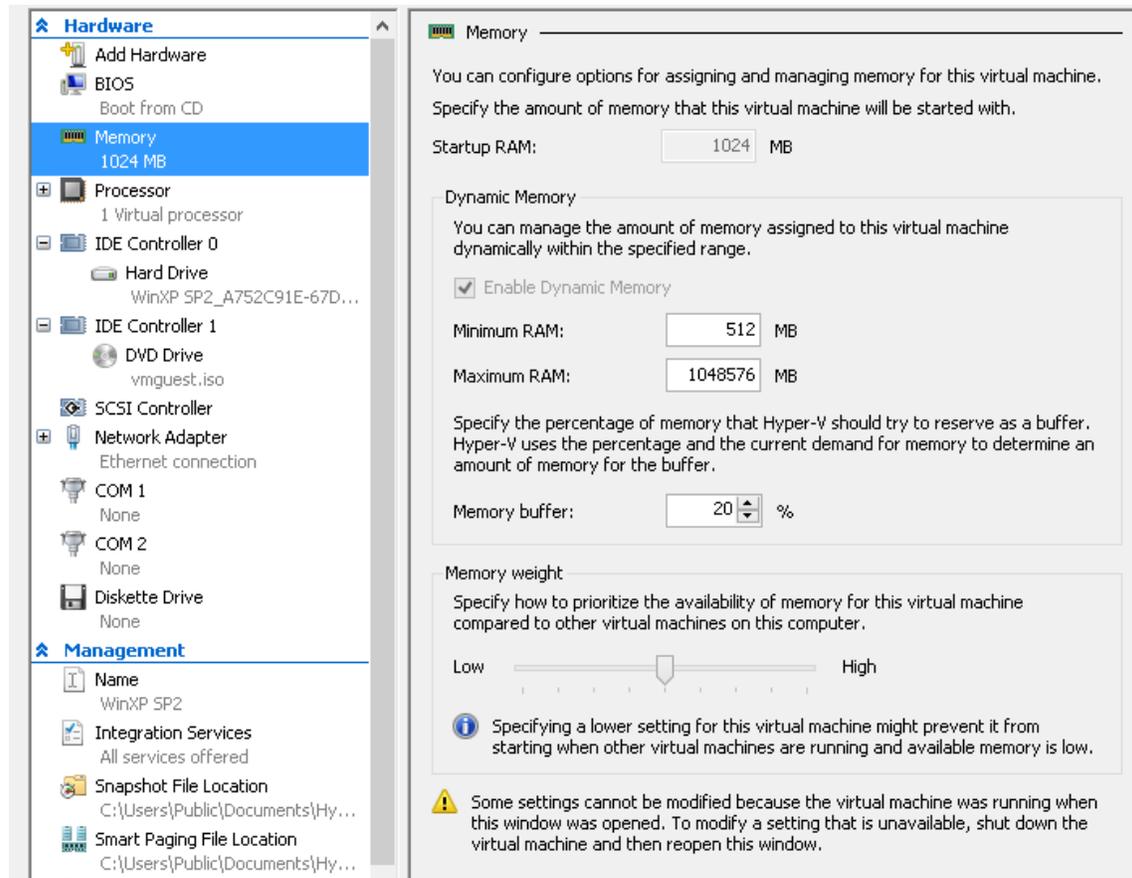
- Windows 7/8 – 512MB

# Windows 10 for Microsoft Office users

## Hyper-V - Need to know

- Windows Vista – 512MB
- Windows Server 2008 R2 (Enterprise or Datacenter) – 512MB
- Windows Server 2003 (regular or R2, Enterprise or Datacenter) – 128MB

Dynamic Memory settings are in the VM's settings and, like all memory settings, can usually only be changed when the VM is shutdown. (Windows 10 now lets you 'hot' change memory setup on compatible VM's)



With Dynamic Memory enabled you can set a minimum and maximum virtual RAM value. The minimum is the least physical memory reserved for the VM even when it's not using a lot of resources.

The 1048576MB maximum value (1,024TB!) is the Hyper-V default and in effect tells Hyper-V to allocate as much memory as necessary. In practice the guest operating system can only use as much memory as the OS can support.

MAXIMUM SUPPORTED MEMORY

Here's the Microsoft confirmed maximum supported RAM:

### Windows XP

## Windows 10 for Microsoft Office users

Hyper-V - Need to know

- 32-bit – 4GB (4096MB)
- 64-bit – 4GB
- Starter – 512MB

### Windows Vista

- 32-bit – 4GB (4096MB)
- 64-bit – 128GB (131072MB)
- Starter – 512MB

### Windows 7/8/10

- 32-bit – 4GB (4096MB)
- 64-bit Ultimate/Enterprise/Professional – 192GB (131072MB)
- 64-bit Home Premium– 16GB (16384MB)
- 64-bit Home Basic– 8GB (8192MB)
- Starter – 2GB (2048MB)

Despite the maximum values, in practice you can allocate a high but not excessive value for each VM. This will give each VM enough memory but not so much that the physical computer can't cope.

We usually allocate between 2GB (2048MB) to 4GB (4096MB) for each Windows VM. That's usually more than enough for reliable and efficient testing.

The last two memory settings are mostly a hangover from Hyper-V's life as a server technology. On a server most virtual machines are running at the same time and these settings to tell Hyper-V which machines to give higher priority when there's too much demand. In testing and development situations the default values are sufficient.

The memory buffer is some 'working space' to let the VM run smoothly despite changing memory demands. The percentage buffer is allocated in addition to the current memory commitment. The default 20% is enough for testing and development VM's.

Memory weight lets you change the priority of physical memory available between different VM's. In a server environment you might give a higher priority to an essential server. For testing/development it's enough to leave this as the default 'middle' setting.

### DISK SPACE

Each virtual machine consists of one or more virtual hard drives.

## Windows 10 for Microsoft Office users

### Hyper-V - Need to know

Think of them as just like a physical drive (ie they can store data be used to boot up an operating system) but with some special characteristics:

**Portability** – you can move or copy a virtual hard disk to another location.

**Connectability** – a virtual hard drive can be opened as an additional drive on another virtual machine or even on the physical/host Windows 8 computer.

**Space used** - a virtual hard disk has two sizes – its maximum possible size and its current physical size on the host. The virtual drive will expand as more disk space is required by the virtual machine rather than taking up the maximum size all the time.

**Size** – a virtual disk can be compacted to remove currently unused physical disk space.

**Expandable** – unlike a physical drive, a virtual hard drive can get bigger or smaller simply by changing its maximum size then making the necessary changes in the guest operating system to ‘see’ the larger drive.

**Multi-use** – advanced users can have a single virtual hard drive operating from different Hyper-V settings (ie changed memory or networking).

Virtual hard drives are dynamic so they start small but can get very large indeed. Add to that space for [snapshots](#). For the host/physical computer you’ll need a lot of disk space. If you needed an excuse for that 3TB or 4TB drive, virtual machines are it.

Remember that your backups will also increase in size!

It’s possible to boot your physical computer from a virtual hard drive. In other words, a VHDX file taking up most of the physical drive and containing the operating system and other files. The idea is that you could copy the virtual drive to another computer and restart with all your software, settings and documents all ready for you.

### CD/DVD DRIVE

Any virtual machine can connect to physical CD/DVD drives which is handy for installing software.

However, there’s an easier way for regular virtual machine users – the .ISO file.

# Windows 10 for Microsoft Office users

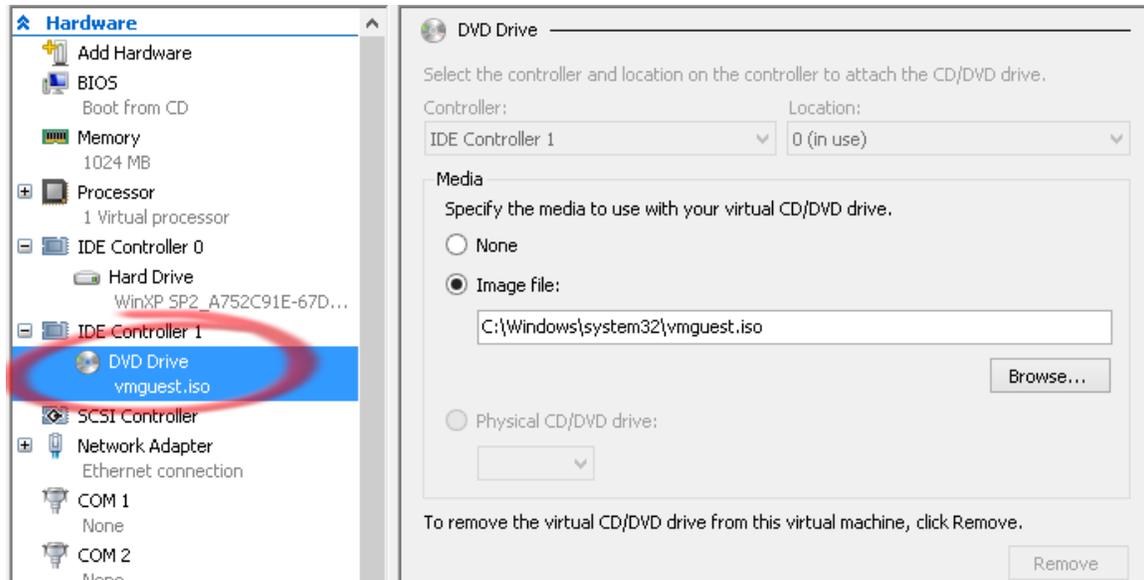
## Hyper-V - Need to know

### ISO FILES

An ISO file is a full disk image of a physical optical disk. If you've ever bought downloadable software from a place like Microsoft's TechNet then you'll have received ISO files in lieu of mailing physical disks.

ISO files can be connected to a virtual machines CD/DVD drive to make the ISO's contents appear as a read-only disk in the VM.

Here's the DVD drive setting for a Hyper-V machine connected to an ISO file



As you can see, there are also options for no media or connect to the host machine's physical drive.

You can make an ISO file from physical disk or collection of files/folders. There are many tools out there but most Windows users try Alex Feinman's [ISO Recorder](#).

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*We suggest you convert your Windows and Office install disks into a collection of ISO files. The ISO's are easier to work with when making virtual machines as well as being faster and easier to backup.*

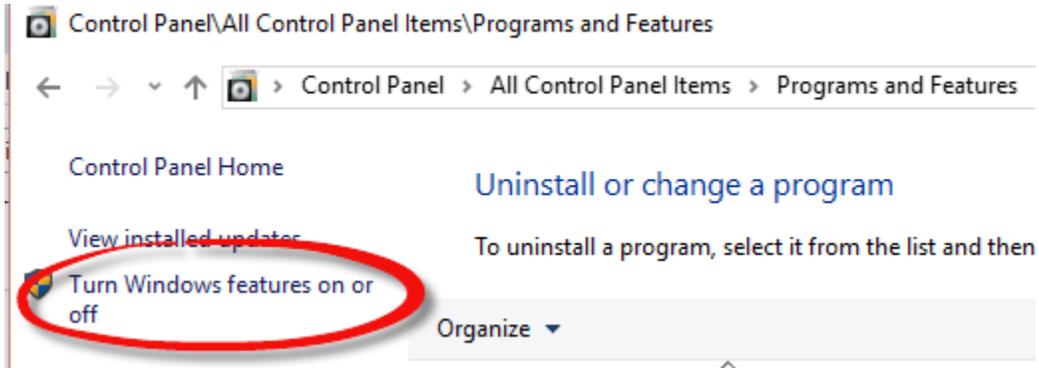
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# Windows 10 for Microsoft Office users

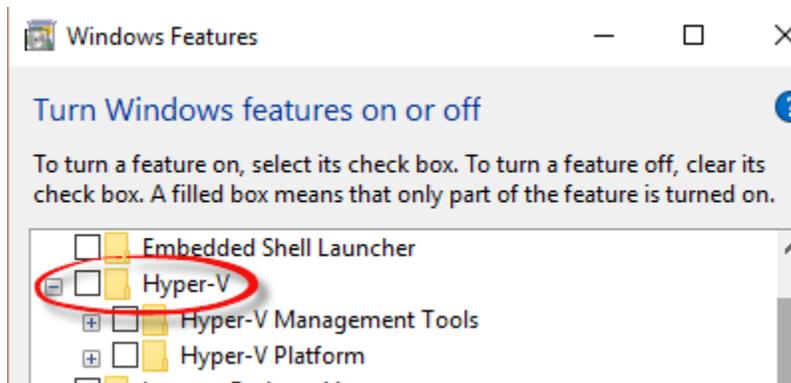
## Hyper-V - Installing Hyper-V

### INSTALLING HYPER-V

Hyper-V isn't included in the default Windows installations. Go to Control Panel | Programs | Turn Windows features on/off.



Scroll down to Hyper-V and turn on all the available options.

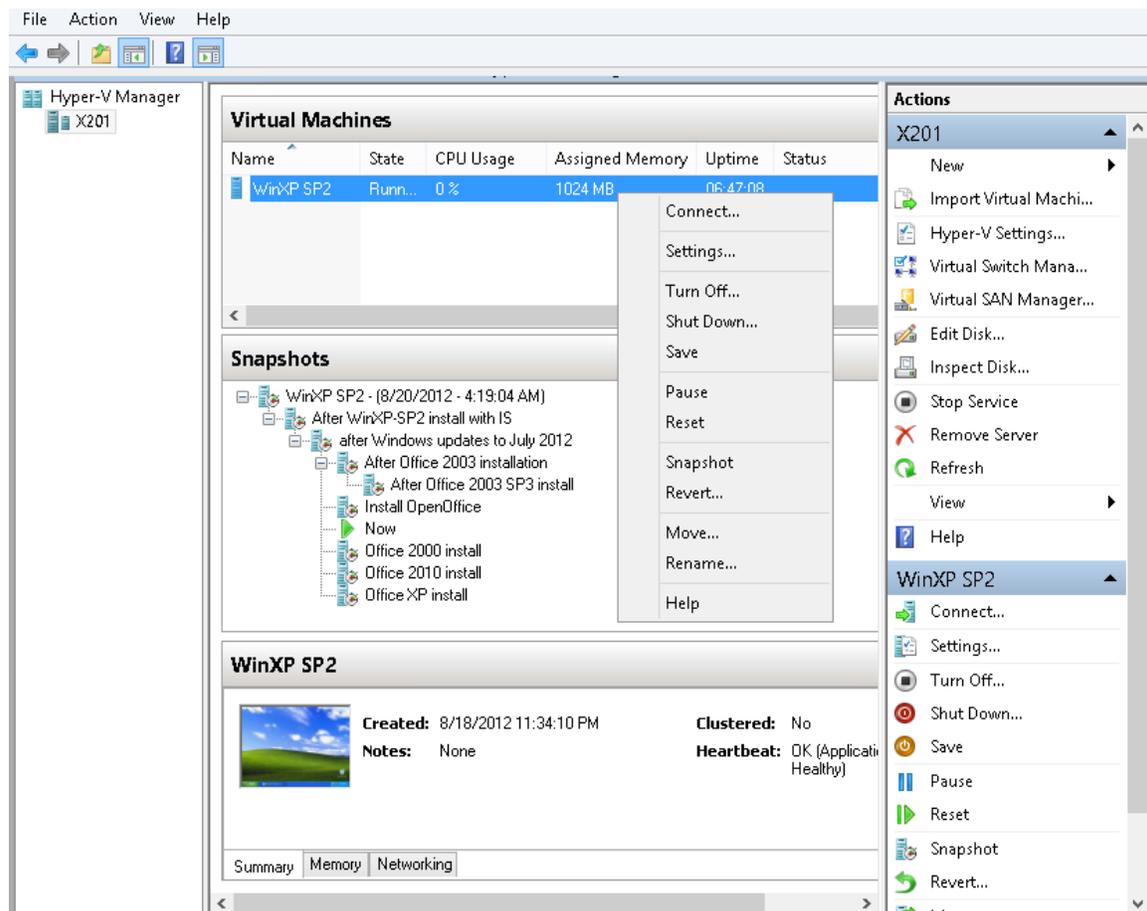


Then you can start up the Hyper-V Manager from the Start Menu.

# Windows 10 for Microsoft Office users

## Hyper-V - Installing Hyper-V

Hyper-V Manager is the control center for virtual machines on Windows.



From here you can see all the available VM's and snapshots, create new VM's as well as controlling other features and settings that we'll cover in this chapter.

For the moment we'll look at the things you have to do before making your first virtual machine, check the default locations and setting up a network connection.

### DEFAULT LOCATIONS

Hyper-V virtual machines can be anywhere on your physical computer drives but usually they are all gathered in the one folder with sub-folders for each VM.

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*You can put VM's on network shares but they'll probably run very slowly so don't bother. Similarly VM's usually run slowly from external drives due to the relatively slow read/write speeds. USB 3 or eSATA drives*

## Windows 10 for Microsoft Office users

### Hyper-V - Installing Hyper-V

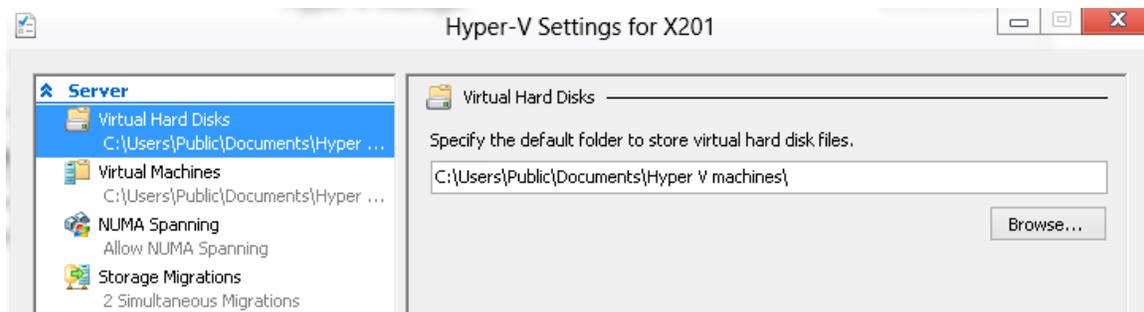
*work tolerably well as the home for virtual machines but nothing beats a fast internal SATA or SSD drive.*

---

As we mentioned before, Hyper-V was designed for servers and that's reflected by the separate folder defaults for virtual hard drive storage from VM configuration files.

Most IT professionals, developers and testers prefer to keep the entire virtual machine (settings and virtual hard drive) in a single folder/sub-folder tree.

In the Hyper-V manager go to Actions | Hyper-V settings and make both the Virtual Hard Disks and Virtual Machine locations the same.



We put them under `\Public\Documents\Hyper-V machines\` followed by the name of the VM.

Why Public? Virtual hard drives can get very large, usually too large for backup or sync from the standard /My Documents location. Storing VM's under Public lets you manage backups and access separately.

Also, the folder is called 'Hyper-V machines' not just 'virtual machines' to separate Hyper-V VM's from others based on VMWare, Oracle VM VirtualBox or Parallels.

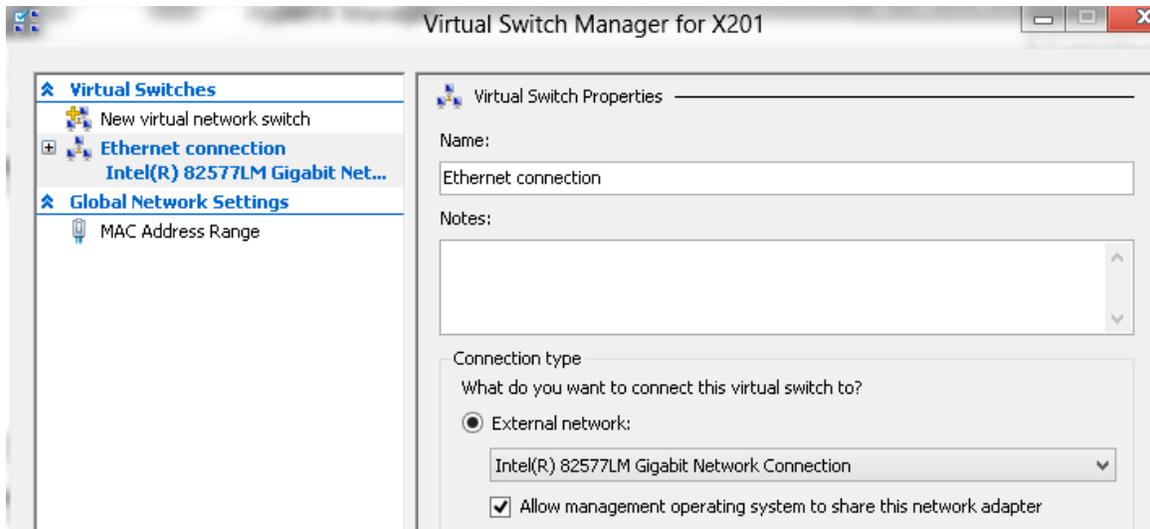
### MAKE A VIRTUAL NETWORK SWITCH

Hyper-V requires you to create a virtual network switch. This is like a virtual Ethernet card that links the VM and the real network hardware.

## Windows 10 for Microsoft Office users

### Hyper-V - Windows 10 changes

There are a lot of options here but to get started choose 'New virtual network switch' and choose an External Network connection type. The type will be one of the host/physical computer network cards – either cabled or wireless.



Make sure that 'Allow management operating system to share this network adapter' is ON otherwise the network card will be for the sole use of the virtual machine!

## WINDOWS 10 CHANGES

There are many changes to Hyper-V in Windows 10 but many aren't of much concern to occasional users. They are useful for administrators of many VM's in a large enterprise.

Individual users can use Windows Hyper-V in Windows 10 without any difference from Windows 8. But there are some differences worth keeping in mind.

### CONFIGURATION FILE

The Hyper-V configuration file for each VM has changed in Windows 10. Normally changes in config files don't matter to end users but in this case it's a nuisance to advanced Hyper-V nerds.

The original Hyper-V config file was a plain text XML file. Power users could open it up and tinker with the settings.

Windows 10 Hyper-V uses a .VMCX extension for a binary config file that can't be directly edited. Microsoft says the change is for better performance but it's

## Windows 10 for Microsoft Office users

### Hyper-V - Windows 10 changes

widely thought they are trying to stop support calls caused by unwise manual changes to the .XML config file.

#### UPGRADING

VM's moved from Windows 8 will keep their configuration file in .XML format. But some new features will be unavailable.

To switch to the .VMCX configuration file, close the VM. Open PowerShell with admin privileges and use the command:

```
Update-VmConfigurationVersion <vmname>
```

Obviously, you can't move the VM back to a Windows 8 host machine after changing the configuration format.

#### INTEGRATION SERVICES

Integration Services is the software and drivers installed on the guest operating system to smooth the working of the guest VM.

In the past the Integration Services were installed via a .ISO file. It was loaded into the guest virtual DVD drive and installed from there.

Windows 10 doesn't have an Integration Services ISO. Instead the necessary software is delivered separately and automatically.

They've done this so standard Windows Update can delivery updates to Integration Services. Also to help administrators trying to manage many VM's in an enterprise.

#### HOT SWAP NETWORK AND MEMORY

It's now possible to change the network adapter and memory settings for a virtual machine while it's running. That's a real timesaver, especially increasing the available memory for a sluggish VM.

Dynamic network adapters require a 'generation 2' virtual machine with either Windows or Linux.

Adjusting the available memory is separate from the Dynamic Memory feature (which adjusts the physical host memory used by a VM according to need). It can be done on both Generation 1 or Generation 2 VM's.

# Windows 10 for Microsoft Office users

## Hyper-V - Windows 8.1 changes

### PRODUCTION CHECKPOINTS

Hyper-V used to have Snapshots now it has Checkpoints. Same thing, different name.

Checkpoints are 'saved states'. An image of the virtual machine at a point in time – the settings, memory, disk drive – the lot.

You can use checkpoints/snapshots to keep a copy of a VM before you take other actions. If the actions don't work or are temporary, you can revert to the checkpoint.

An Office user might save a checkpoint/snapshot before trying out an Office plug-in. After the trial, you can switch to the 'pre trial' VM checkpoint and therefore removing any trace of the plug-in.

Originally Hyper-V snapshots/checkpoints were intended for testing and development uses only. However, some companies run VM's as part of their daily and even 24/7 operation. So Windows and Windows Server Hyper-V now has 'production checkpoints' – checkpoints that are faster to make and suitable for VM's used constantly.

### WINDOWS 8.1 CHANGES

Hyper-V has some important additions in Windows 8.1 that are also available in Windows Server 2012. These changes continue in Windows 10 so we're including them here to help people moving from Windows 7.

### ENHANCED SESSION MODE

Enhanced Session Mode adds various extras to each virtual machine. According to Microsoft these are:

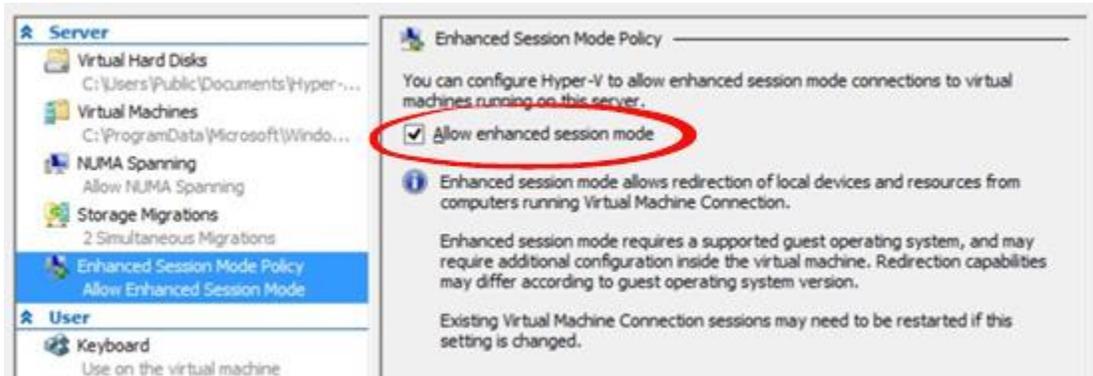
- *Display Configuration*
- *Audio redirection*
- *Printer redirection*
- *Full clipboard support (improved over limited prior-generation clipboard support)*
- *Smart Card support*
- *USB Device redirection*
- *Drive redirection*
- *Redirection for supported Plug and Play devices*

## Windows 10 for Microsoft Office users

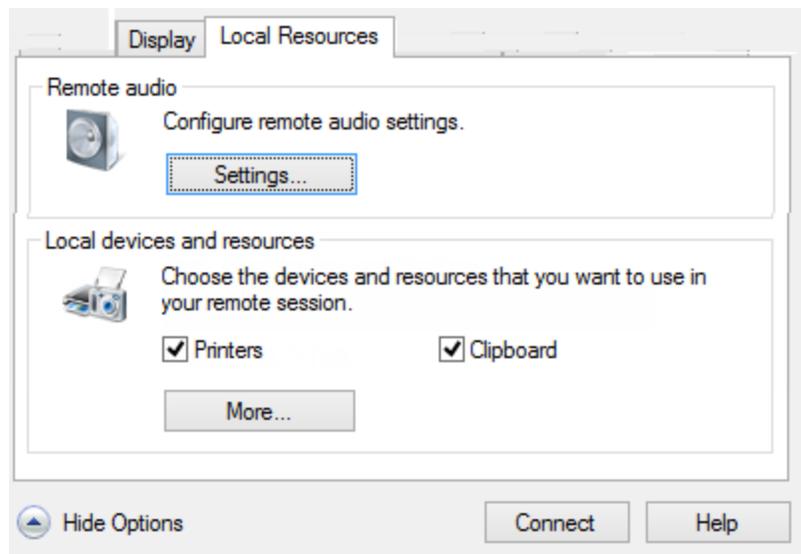
### Hyper-V - Windows 8.1 changes

Enhanced Session Mode is enabled by default when available. You might want to turn it off if the VM could be moved to a Windows 8 or earlier Windows Server versions.

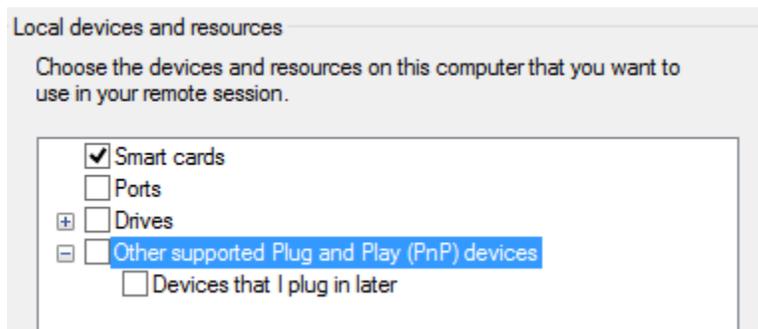
In each VM properties there's a new 'Enhanced Session Mode Policy' pane.



In the VM, make sure the Local Resources are enabled.



Click 'More' and check 'Other supported Plug and Play (PnP) devices', so that anything you plug into the host machine can be available to the VM.



# Windows 10 for Microsoft Office users

Hyper-V - Windows 8.1 changes

## GENERATION 2

'Generation 2' virtual machines add both feature and performance enhancements to Hyper-V.

---

*Generation 2 VM's are NOT compatible with earlier versions of Hyper-V. Do not choose 'Generation 2' if the VM might be used on a host machine with an earlier version of Hyper-V.*

---

Gen2 VM's (as they're being called, despite Microsoft's objections) do away with a lot of the emulation of things like IDE drives. Instead, all virtual drives are considered SCSI drives accessed by native SCSI commands. To users this makes no difference except performance improvements.

The same VDHX virtual drives are used with Generation 2 machines but now those drives can be resized (expanded or contracted) while the VM is running.

Gen2 machines can be exported or cloned while running.

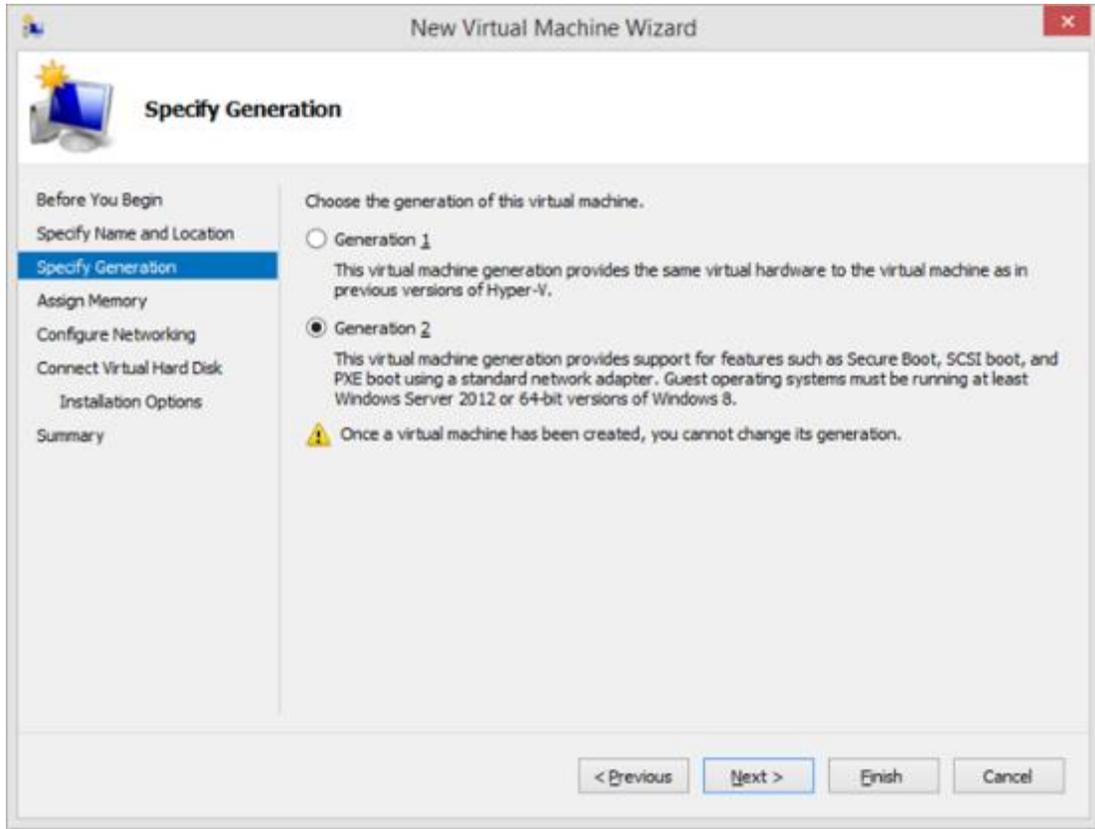
The Snapshot feature in Hyper-V becomes Checkpoints on a Generation 2 VM. Checkpoints are different to Snapshots but only in ways that don't impact on most Hyper-V users.

Only 64-bit Windows or Server 2012 is supported as a guest operating system on Generation 2 machines.

To enable on a new VM, choose the Generation 2 option in the New Virtual Machine wizard

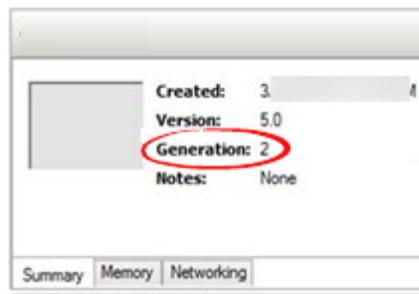
# Windows 10 for Microsoft Office users

## Hyper-V - Make a new virtual machine



MSDN has an [unsupported PowerShell script](#) that can convert a Gen1 machine to Generation 2. Read the documentation and caveats carefully.

You can tell if a VM is Generation 2 from the summary tab in Hyper-V manager:



## MAKE A NEW VIRTUAL MACHINE

Finally, you can make a virtual machine all your own!

Before you start making a new virtual machine get all you need in place:

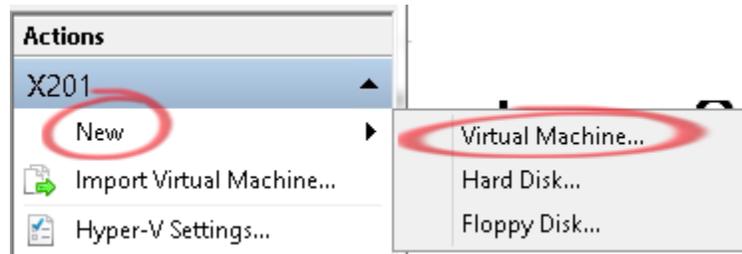
- Windows operating system disk or ISO image file.
- Product key for the Windows system you're about to install.

## Windows 10 for Microsoft Office users

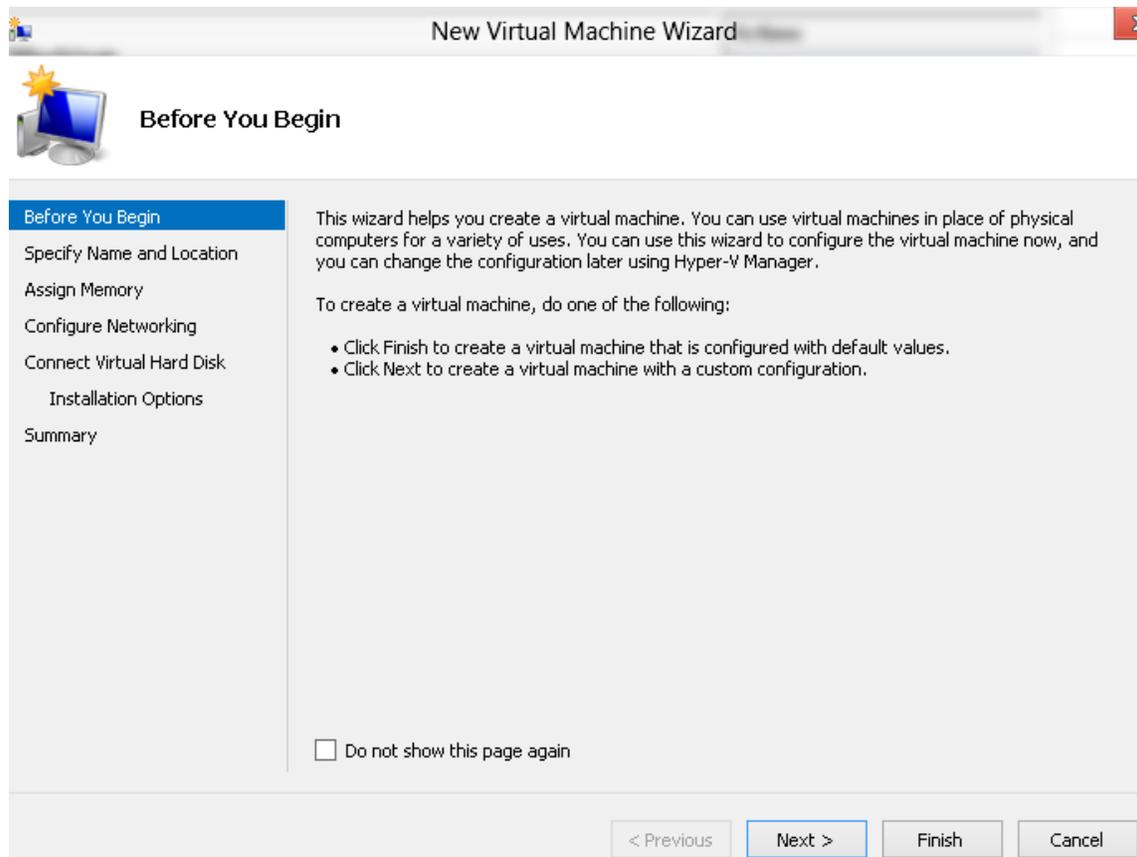
### Hyper-V - Make a new virtual machine

- Make sure you have enough disk space on host machine for both the VM and snapshots.
- Check there's enough RAM memory on the host machine.

Open the Hyper-V manager and choose Actions | New | Virtual Machine.



This starts the New Virtual Machine wizard:

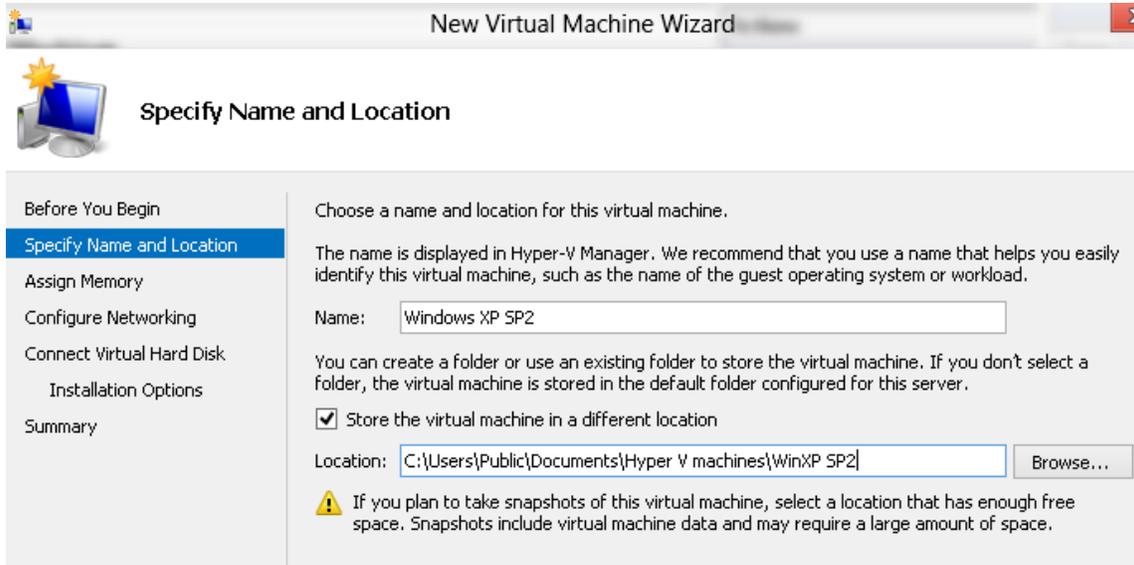


Firstly, give the VM a name and a folder to store it in. The name should be very clear about what OS you're installing. The VM name can be changed later.

The folder is normally a sub-folder off your default Hyper-V location but can be anywhere. The VM can be moved to another location later.

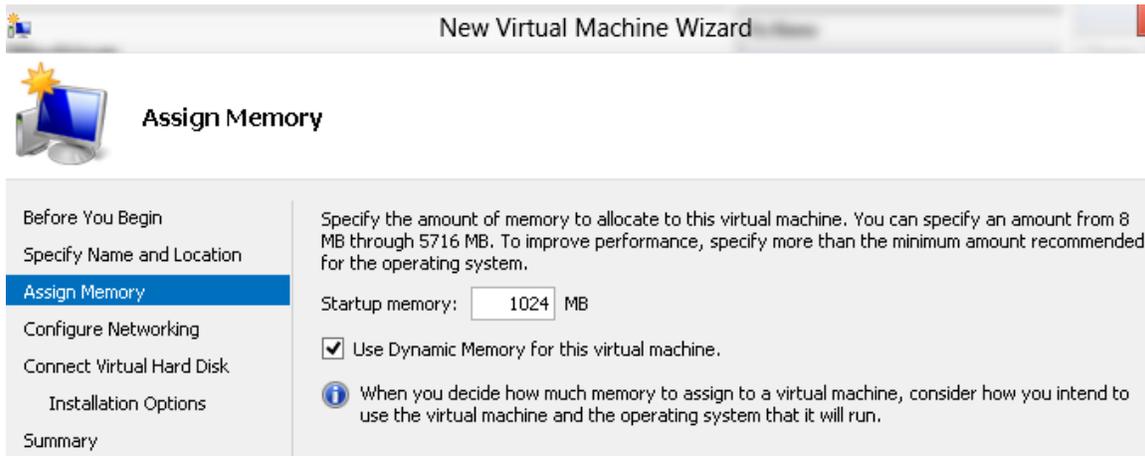
# Windows 10 for Microsoft Office users

## Hyper-V - Make a new virtual machine



Next choose the older style VM or [Generation 2](#). Unless you have a specific reason (moving the VM to Windows 8 or similar Server box) choose 'Generation 2'.

One benefit of virtual machines is that you can easily adjust the amount of memory available to it. This page of the wizard assigns the startup memory only. For Windows XP, 1GB (1024MB) is enough. For a Windows Vista/ 7 or 8 VM you might use 1.5GB (1536MB) or even 2GB (2048MB) to start with. You can try lower memory values but the installation may take longer.



Once you've finished installing the operating system and software you can change the memory in the Hyper-V settings for the VM.

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*The Virtual Machine has to be shut down to change the memory and many other VM settings.*

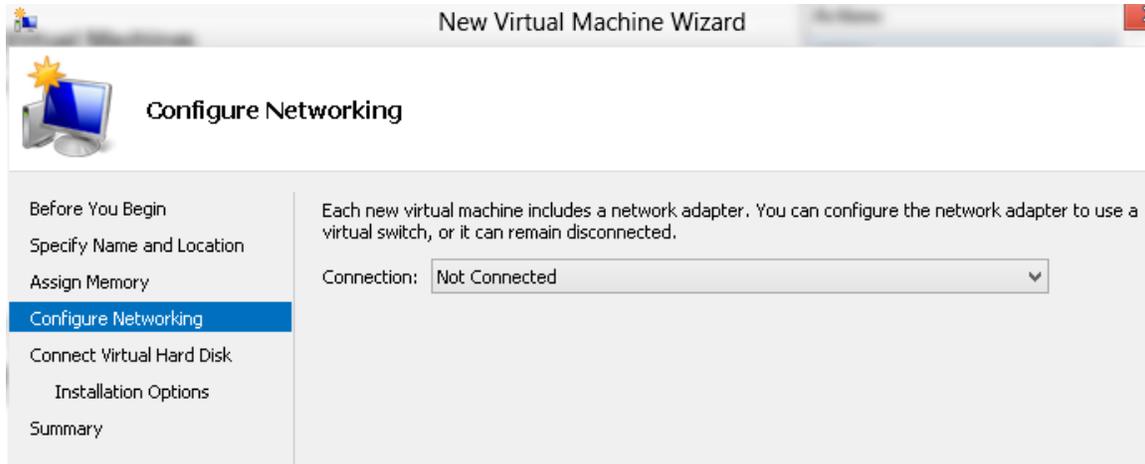
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## Windows 10 for Microsoft Office users

Hyper-V - Make a new virtual machine

[Dynamic Memory](#) is a unique feature to Hyper-V. Standard VM systems allocate physical/host memory for the entire VM – in other words a 2GB memory setting for a VM will use up a full 2GB of physical memory when started. Dynamic Memory is smarter and changes the physical memory used for the VM depending on the actual demand for memory.

The Configure Networking page of the wizard lets you choose from the [virtual network switches](#) you've setup in Hyper-V.



Select a connection from one of the [Network Switches](#) you have created. 'Not Connected' is for the rare occasion that you want a totally isolated VM with no network link at all.

Next is the all-important virtual hard disk.

You want to create a virtual hard disk (VHDX). Give a name for the VHDX, possibly the same as the VM.

---

*It's become the custom to call a virtual hard drive a 'VHD' even though the upgraded file extension is VHDX.*

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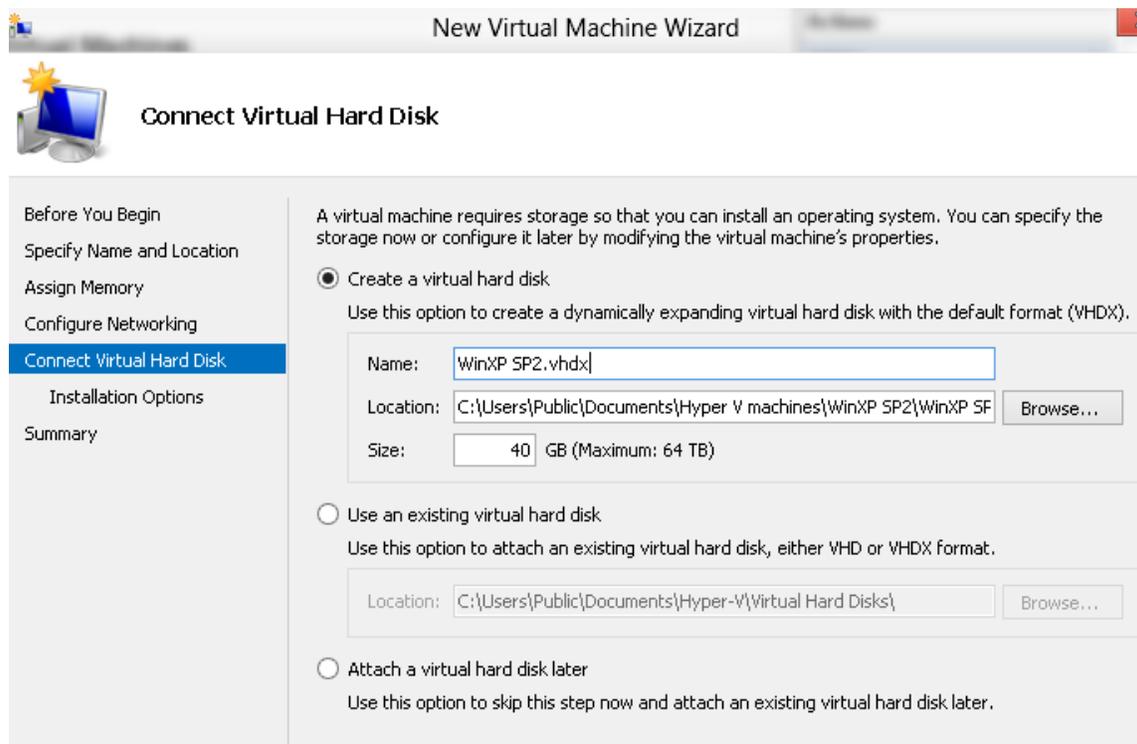
The location can be any folder. Hyper-V will default to the location specified in the overall settings. As mentioned [earlier](#), you may want to override Hyper-V's preference and save both the VM settings and virtual hard drives in the same folder. This makes it easier to move the VM to another physical computer later.

## Windows 10 for Microsoft Office users

### Hyper-V - Make a new virtual machine

The size of the VHD should be as large as you think you'll ever possibly need. While you can expand a VHD later it's a time-consuming chore so it's better to be generous in your first estimate.

Remember that a VHD is dynamically sized. If you set a VHD as 40GB, Hyper-V won't take up all that physical space right away. Instead, the VHDX file expands as space is required.

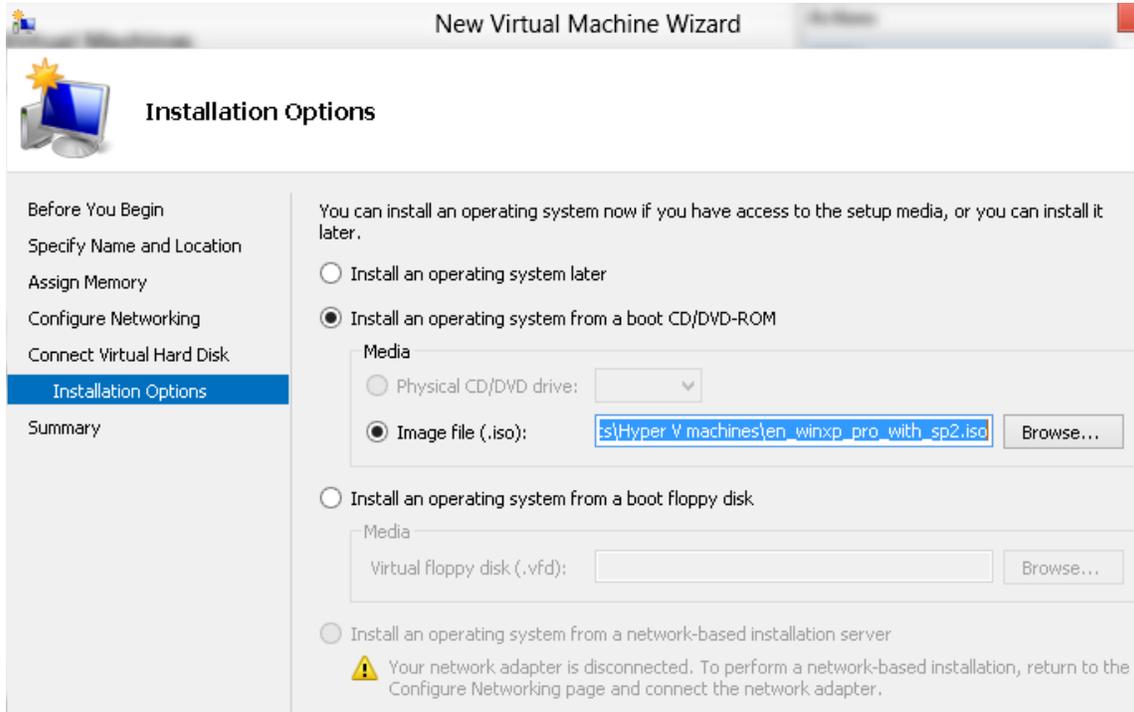


In this example, we've set a 40GB size. That should be way more than enough for a Windows XP machine with a copy of Office installed plus some test data (really 15GB would be enough room and then some).

Installing a new operating system requires a bootable location to start from, usually a CD/DVD, or more occasionally a floppy disk (for a much older OS), or a network location.

# Windows 10 for Microsoft Office users

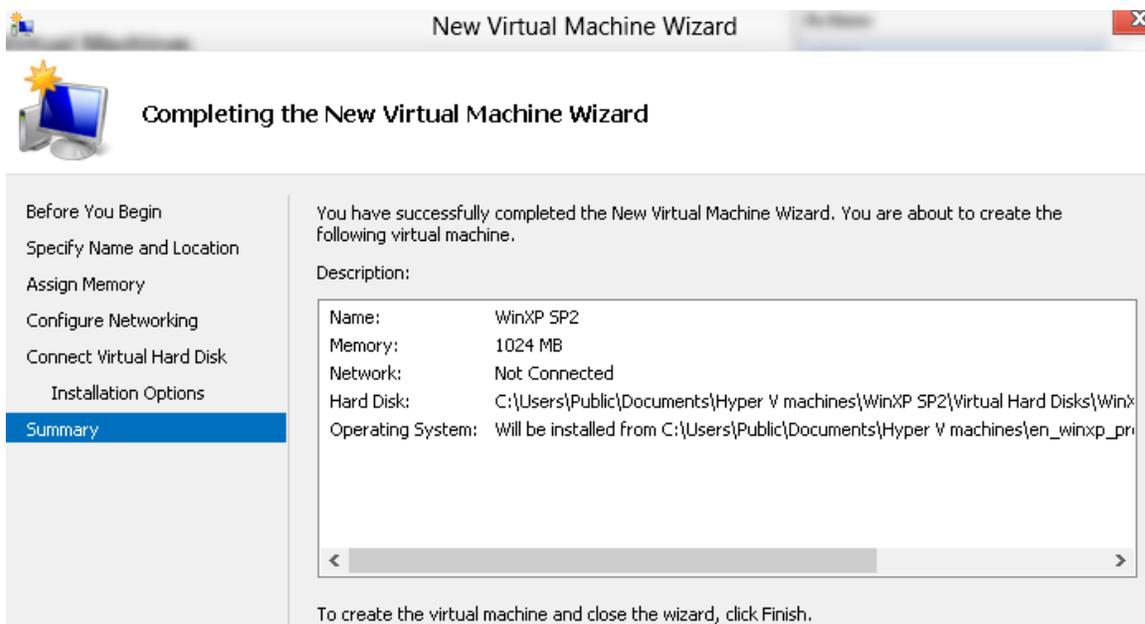
## Hyper-V - Make a new virtual machine



To install Windows on the new virtual machine you'll need either an install CD/DVD or an [ISO image](#) of it.

We use an ISO whenever possible. It's faster than an optical disk and easier to move around.

Finally, check over the settings before closing the wizard.



## Windows 10 for Microsoft Office users

Hyper-V - Make a new virtual machine

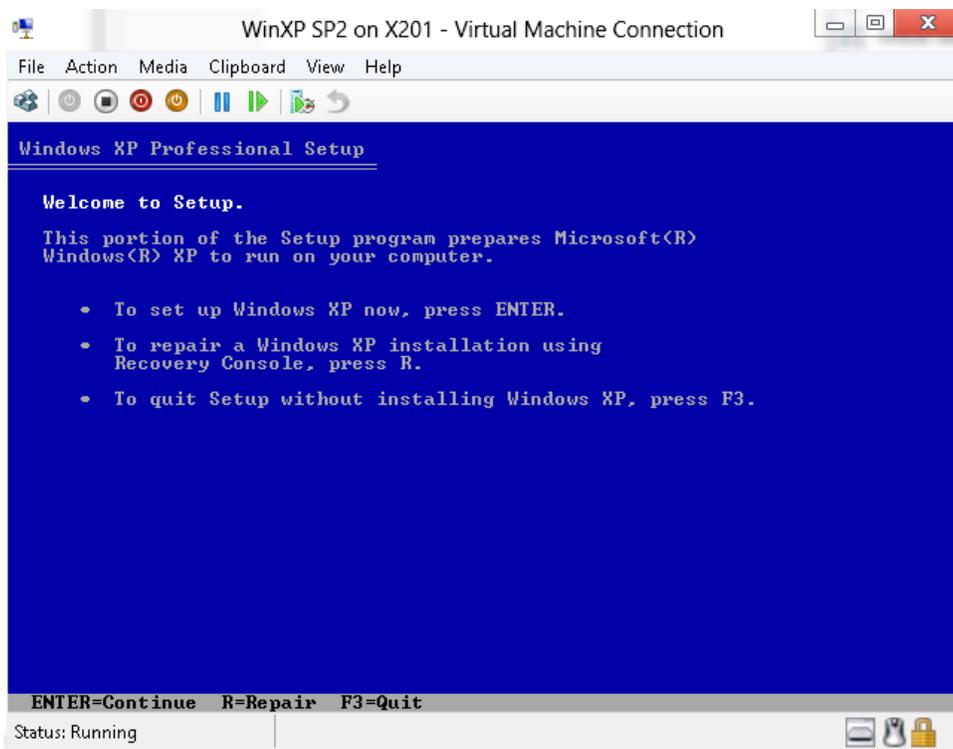
When you finish the wizard, the virtual machine will start and boot from the CD/DVD or ISO file. From here on it's almost the same as a standard Windows installation. In this case we're installing Windows XP.

---

### *Why Windows XP?*

*Windows XP with Service Pack 3 is currently the best choice for a virtual machine. It's compatible with most software and certainly supports all versions of Office up to Office 2010. It can run nicely with relatively small memory like 512MB or 1024MB. But you can use any version of Windows you like as long as it's compatible with the software you want to run and you have a license for it.*

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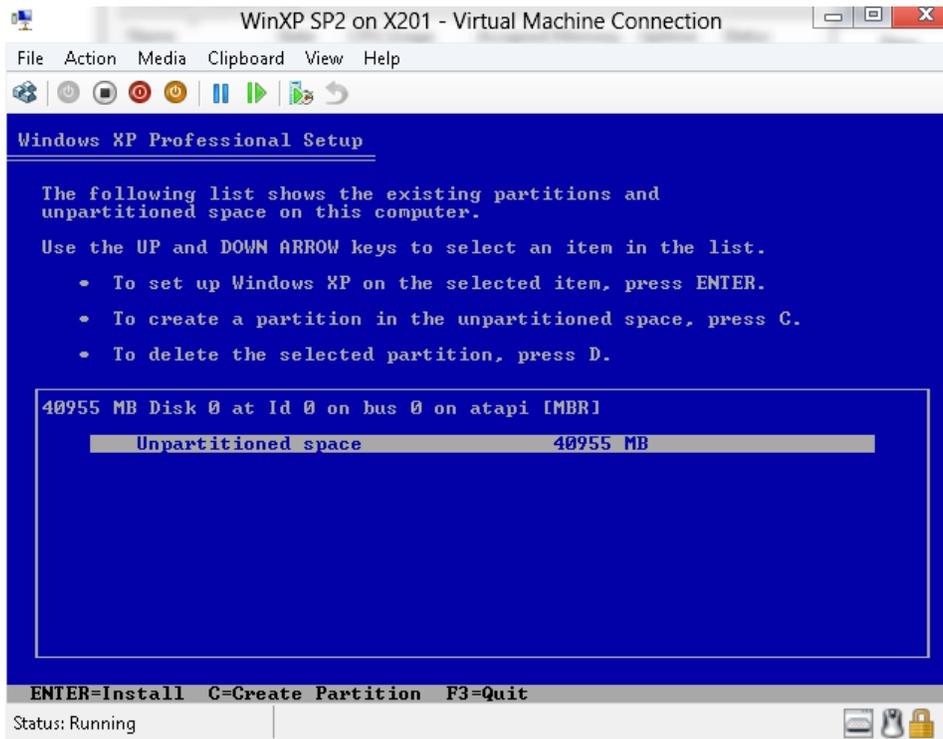


We'll talk about [the menus, toolbar and status line in a virtual machine](#) later in this chapter.

# Windows 10 for Microsoft Office users

Hyper-V - Make a new virtual machine

Press Enter to proceed with the installation.



You can see that the virtual machine presents to the Windows install the virtual hard disk you specified with 40GB of unpartitioned space (ie an unformatted drive).

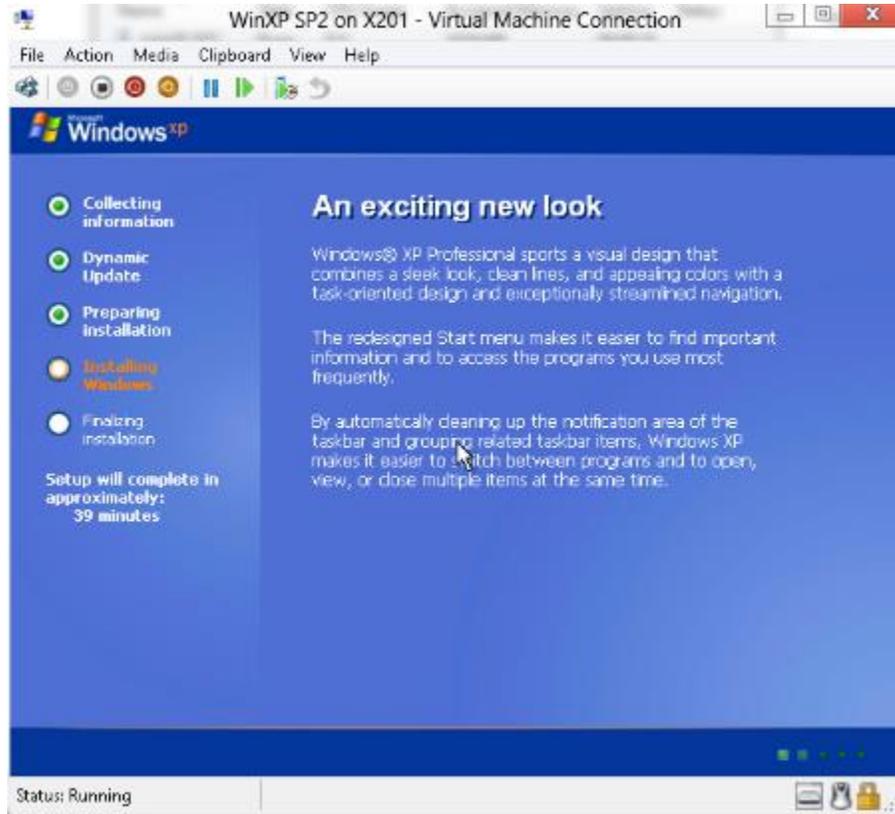
Press Enter again and Windows will format the VHD and copy files across from the install CD/ISO file.

The Windows XP installation proceeds normally (just in a smaller window) and the virtual machine will reboot as part of the install.

You can switch away from the running virtual machine to do other work. Check back to the VM from time to time to see how it's going.

# Windows 10 for Microsoft Office users

Hyper-V - Make a new virtual machine



## MOUSE PROBLEM

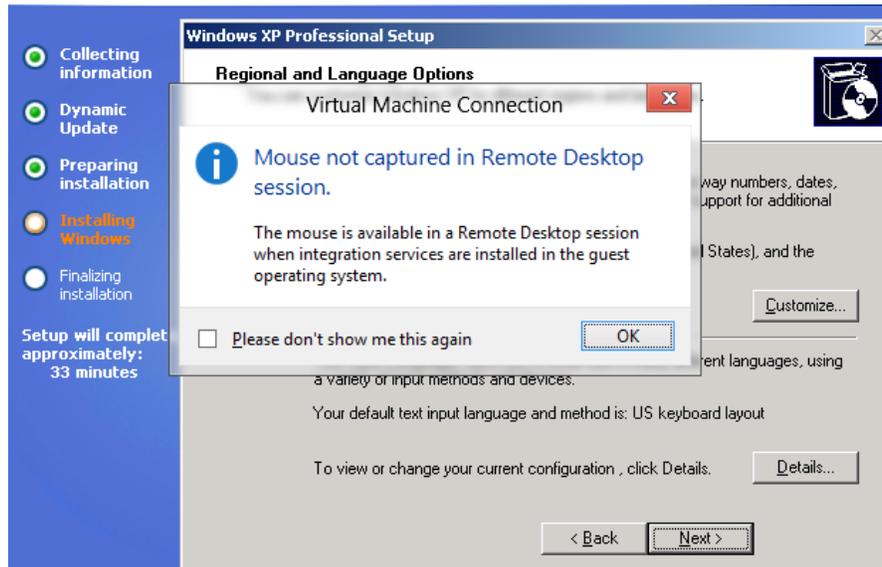
During second part of installation you'll probably strike the hassle of the mouse pointer not moving from the virtual machine to the host.

That's because you need special software on the guest machine called Integration Services Software, but that can't be installed until the guest operating system is installed first.

# Windows 10 for Microsoft Office users

Hyper-V - Make a new virtual machine

You might get an error message like this:



and the mouse status on bottom right of the VM window shows 'not captured'

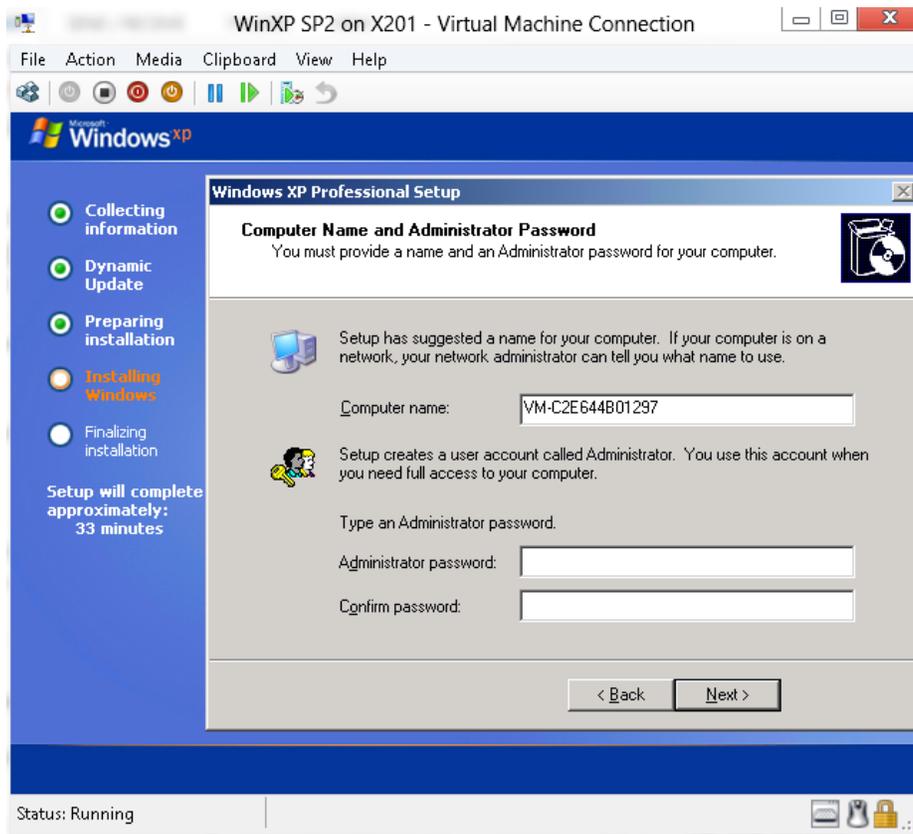


The only thing you can do is use the keyboard to navigate the rest of the operating system installation.

## Windows 10 for Microsoft Office users

Hyper-V - Make a new virtual machine

Windows will create a random virtual machine name that you'll probably want to change to something more understandable.



Having 'VM' in the machine name is handy to distinguish them from physical machines on your network. E.G. 'WinXP-VM' WinXP1-VM' or 'VM-WinXP'.

Make sure you take a note of the login password. With many virtual machines it can be hard to keep track of each one.

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*Keep a plain text document in the same folder as the VM with a note of the details like Administrator password as well as product keys used for the operating system and other software on the VM.*

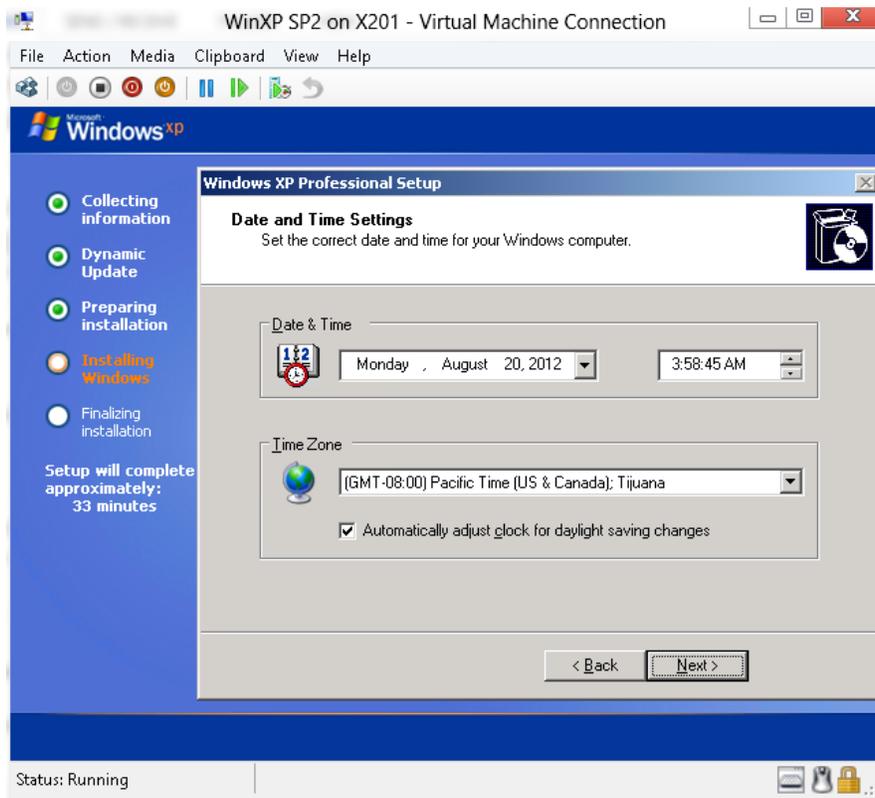
*Alternatively, have a single document for notes about all your VM's. This can be handy for working out which product keys have been used with which VM's.*

---

# Windows 10 for Microsoft Office users

Hyper-V - Make a new virtual machine

Though you'll probably set your VM to local time they can be configured to any time zone you wish.



Go through the rest of the operating system installation. Most likely that will include another reboot of the virtual machine.

## INTEGRATION SERVICES SETUP DISK

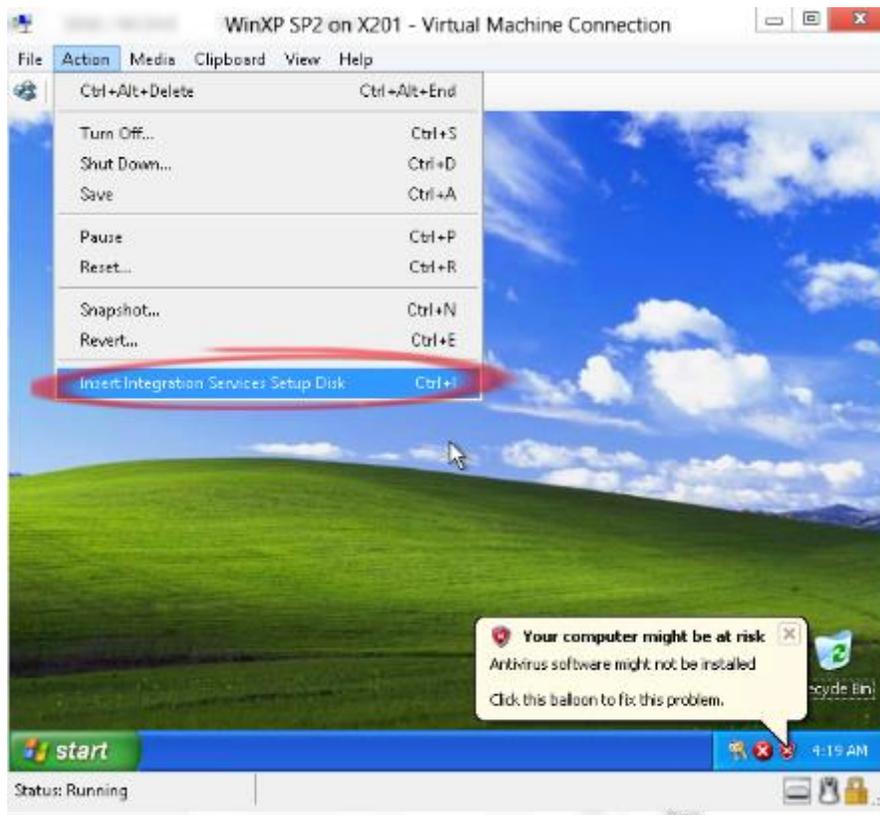
After Windows installation you'll eventually end up at the Windows desktop and the next thing you should do is install the Integration Services.

Integration Services are various drivers and software for the virtual machine to let you seamlessly switch between the host and guest machines. It also adds some compatibility drivers to the guest operating system.

## Windows 10 for Microsoft Office users

Hyper-V - Make a new virtual machine

The most obvious benefit of the Integration Services is that you'll be able to move your mouse pointer between the guest and host computers.



From the Hyper-V menu choose 'Insert Integration Services Setup Disk'.

## Windows 10 for Microsoft Office users

Hyper-V - Make a new virtual machine

The integration services are contained in an .ISO file that's loaded into the virtual machines CD/DVD drive and automatically installed.

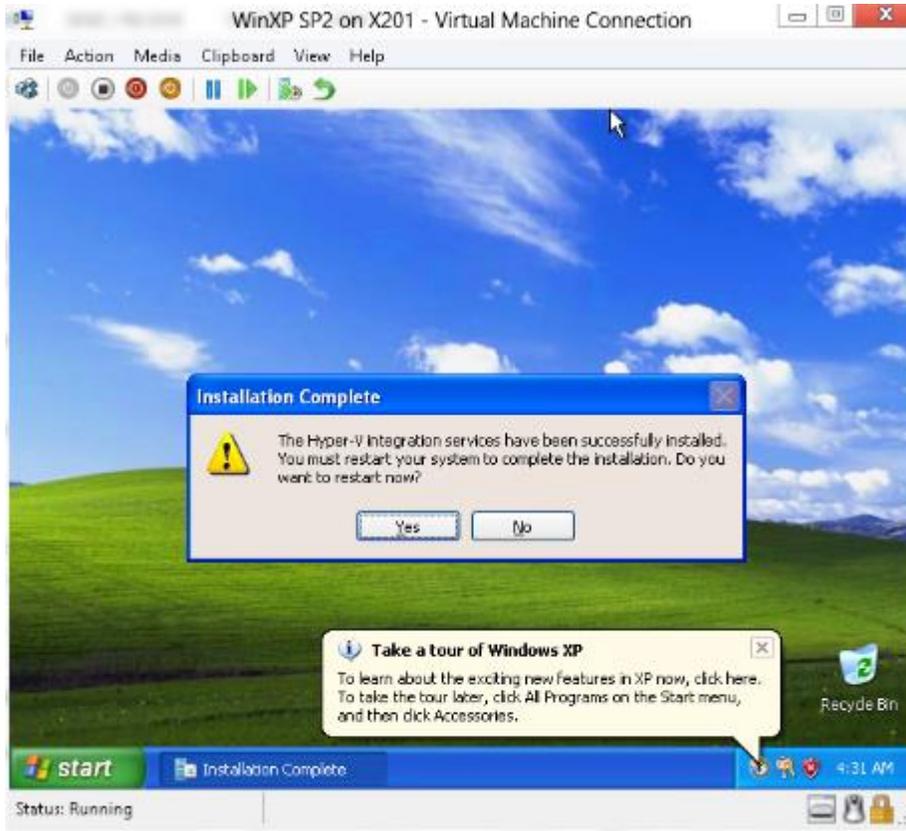


In normal circumstances you don't need to do anything but if a prompt appears just choose the default option unless it seems inappropriate.

At the end of the Integration Services install you'll see a prompt.

# Windows 10 for Microsoft Office users

## Hyper-V - Checkpoint or copy?



And your mouse should now work inside the virtual machine!

Click on 'Yes' to restart the virtual machine.

Once restarted you have a 'clean' version of the operating system with Integration Services installed.

As a guide, the demo virtual machine created above takes up less than 3.5GB of physical disk space. 3.42GB is the virtual hard drive (VHDX). Remember that the VHD setting is dynamic and will expand to the 40GB setting from the wizard only as required.

And now we pause to talk about how to save you the hassle of installing multiple versions of the same operating system.

## CHECKPOINT OR COPY?

Hyper-V lets you take a checkpoint (formerly snapshot) of a virtual machine. A checkpoint is a 'freeze frame' of the VM's state at a particular time. You can continue to work on the guest machine then revert to the snapshot state later.

That's handy for returning a virtual machine to a 'clean' or known state after some testing. For example, you might have Office installed on a guest

## Windows 10 for Microsoft Office users

Hyper-V - Checkpoint or copy?

machine in with the settings immediately after installation. Take a checkpoint at that point then try some code or change Office settings. When you're finished simply Revert to the checkpoint to wipe out the changes you made and go back to the Office 'clean' installation state.

Checkpoints take up less disk space because they only record the differences between one VM state and another. There is a performance hit when using a checkpoint (because Hyper-V has to keep track of the ongoing changes) but that's not usually a problem unless the differences between the checkpoint and VM grow too large.

In practice it's a good idea to take a snapshot of the virtual machine at key points like after installation of the operating system and install of major software like Office.

### CHECKPOINT

To take a checkpoint of a Hyper-V machine choose Action | Checkpoint ...



You can take a checkpoint at any point usually before some major change or at a point that you'd like to revert to later. In this example we've taken a checkpoint right after installing Windows XP and the Integration Services.

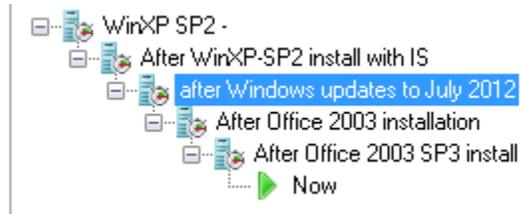
Give the checkpoint a name. The default name should be avoided, instead type in a description of the VM's state at that time. A better description will

## Windows 10 for Microsoft Office users

Hyper-V - Checkpoint or copy?

be more helpful days and months later when you try to remember what you were doing!

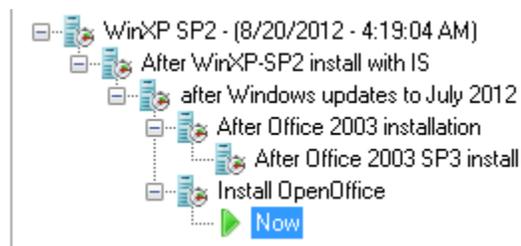
Switch to Hyper-V manager to see the checkpoints available for a VM:



This is a fairly standard set of checkpoints taken at each major point in creating a new VM ie after installing Windows XP with SP2 (the step-by-step above), then after adding all the later service packs and updates, then after installing Office 2003 and finally after adding Office 2003 Service Pack 3.

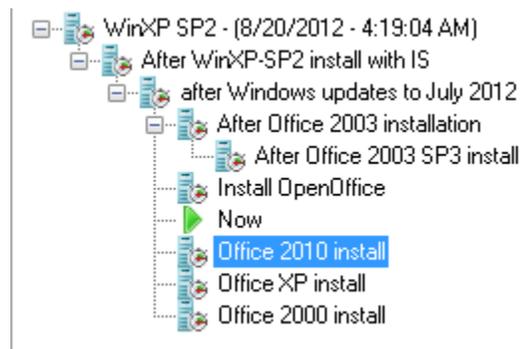
At the end is 'Now' the current state of the virtual machine.

Checkpoints don't have to cascade in that tidy arrangement; you can revert to an earlier checkpoint then apply other changes. In this example we've reverted to the Windows XP base then installed OpenOffice.



Now we can try both Office 2003 and OpenOffice totally independently from different checkpoints of the same virtual machine.

You could go 'all out' and load many checkpoints into a single VM like this example with Office 2000, Office 2003, Office 2007, Office 2010 plus OpenOffice available as checkpoints from a single install of Windows XP.



## Windows 10 for Microsoft Office users

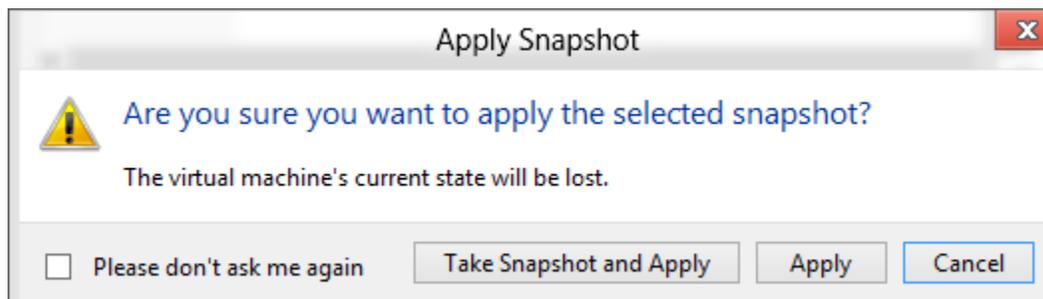
### Hyper-V - Checkpoint or copy?

This kind of loading might be convenient for occasionally use or necessary when there's limited disk space on the host machine. However, the performance of Hyper-V degrades as the difference between checkpoints grows too large.

#### APPLY / REVERT

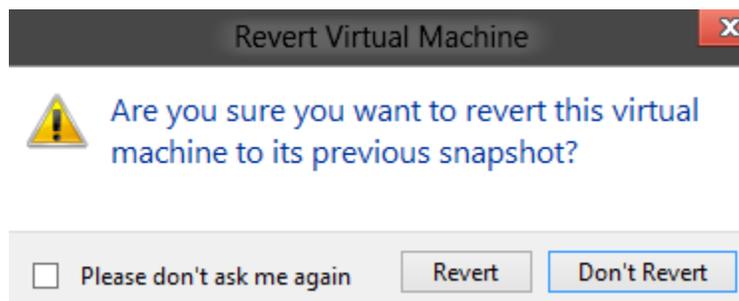
Apply or Revert is the checkpoint process of restoring the virtual machine to the machine state at the time that snapshot was made.

In Hyper-V this is called Applying a Checkpoint. Do it from the Hyper-V manager, right-click on the desired snapshot and choose Apply.



You have the choice of taking a new checkpoint of the machine in its current (ie 'Now') state before Applying the checkpoint.

On the virtual machine Action menu there's a Revert option that will switch the VM to the 'previous' checkpoint only.

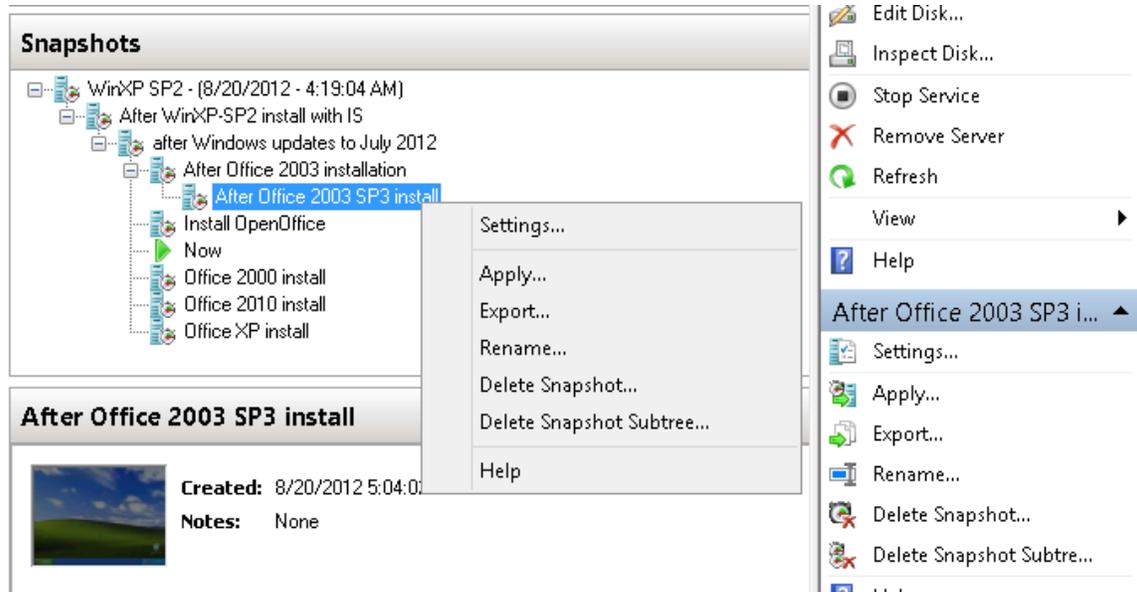


# Windows 10 for Microsoft Office users

Hyper-V - Checkpoint or copy?

## OTHER CHECKPOINT OPTIONS

In the Hyper-V Manager there are other Checkpoint management options available from the right-click menu or Actions pane.



**Settings** will take you to the VM settings applicable to that checkpoint.

**Apply**, see above.

**Export** – will make a new virtual machine using the settings and state of the VM at the checkpoint point.

**Rename** – renames that checkpoint. Pressing F2 when the focus is on the snapshot label will do the same thing.

**Delete Snapshot** – removes the checkpoint information from the physical hard drive.

**Delete Snapshot Tree** – removes the selected checkpoint and all snapshots based on it.

## COPY

Officially you should always use Checkpoint but there is an alternative used by many hardened VM users – copying the virtual machine.

Instead of a checkpoint, close down the virtual machine then make a copy of the entire virtual machine in the host – the virtual hard drive, settings file etc. If you followed our installation advice all these files will be in a single folder. Simply copy the entire folder and sub-folders containing the VM to a storage location.

## Windows 10 for Microsoft Office users

Hyper-V - Office on a virtual machine

Some VM users have a library of 'master copies' of virtual machines saved on external or network storage. When they need a copy of say, Vista, they copy a VM from the 'masters' to the local computer then open it up in Hyper-V.

This takes up more space than snapshots but can be easier to manage over time.

## OFFICE ON A VIRTUAL MACHINE

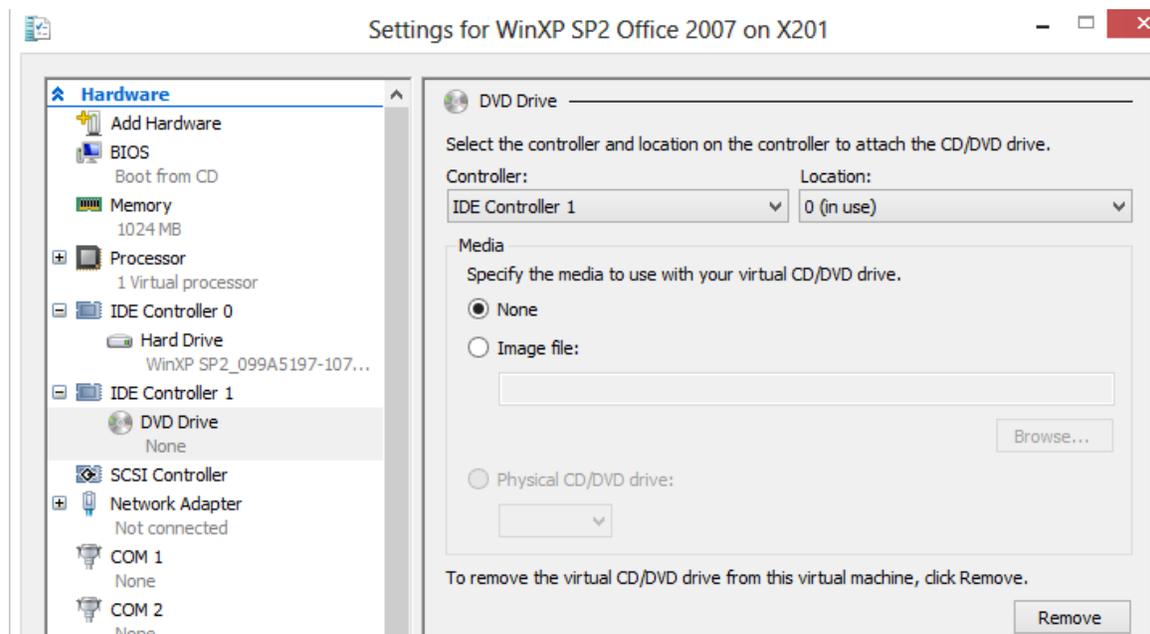
Now we have a virtual machine created with Windows XP, the integration services installed and a checkpoint taken, we can move to installing Office software as well.

For this example, we'll use Office 2007. Any other version of Office installs in a similar way.

You'll need:

- Office installation disk – either a physical disk or an [ISO image](#). Or network and internet access so you can do a 'click to run' streaming install of Office.
- Where applicable, the Office Product Key to match the install disk.

Before starting up the virtual machine, check which DVD/CD setting you have for the VM. Go to the virtual machine settings (File | Settings in the VM window)



Make sure there's a DVD drive on the Hardware list on left.

## Windows 10 for Microsoft Office users

Hyper-V - Office on a virtual machine

Choose 'Image file' if you have an ISO file.

Choose 'Physical CD/DVD drive' and a drive letter.

You can attach the physical disk or ISO file in Settings or use the Media option when the VM is running.



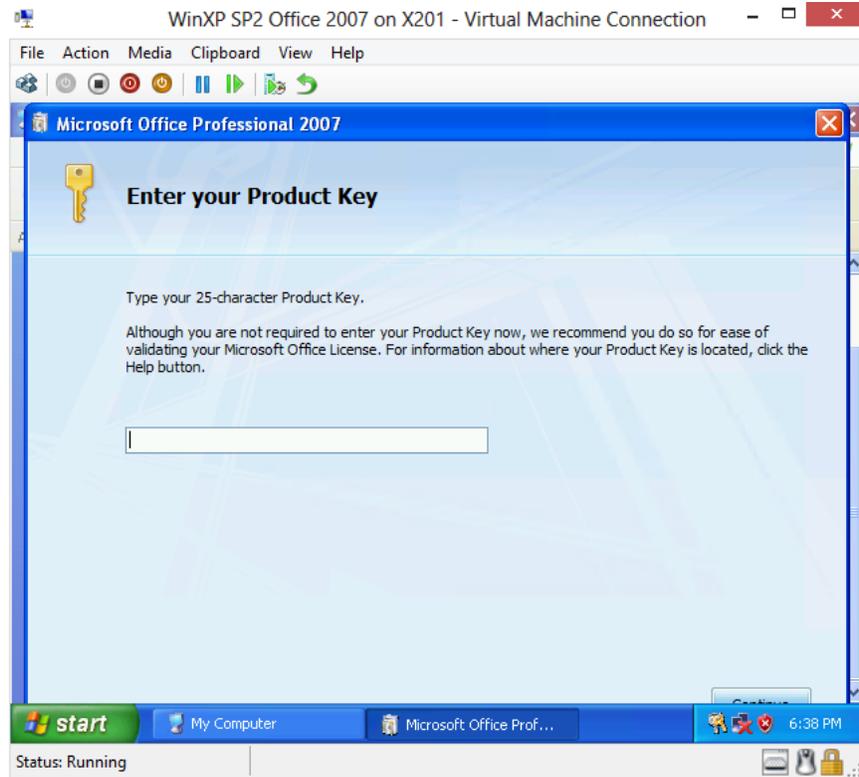
However, you do it, the installation should start automatically, just as it would if you inserted an install disk into a physical machine. If not, open Explorer, right-click on the DVD drive and choose 'AutoPlay' or 'Install'.



## Windows 10 for Microsoft Office users

Hyper-V - Running a virtual machine

In other words, you start the install just as you would on a physical machine. It will run with the same prompts and progress screens as usual starting with the opening dialog.



When you complete installing Office you can apply any necessary service packs from past downloads or direct from the Internet.

After installation, we suggest you take a [checkpoint](#) of the virtual machine with a label such as 'Just after Office ... install'. With that snapshot saved, you can tinker with Office in the virtual machine then revert to the 'factory install' state very quickly.

## RUNNING A VIRTUAL MACHINE

Now you've made a virtual machine with Windows and Office, here's how you can use it.

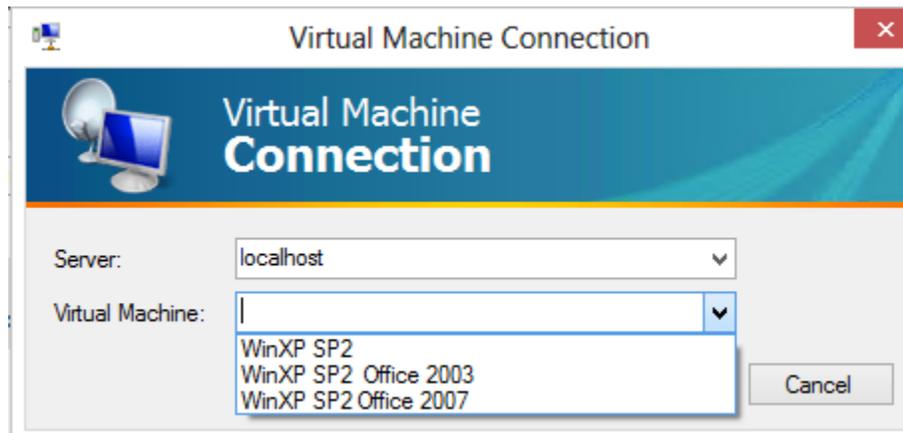
Start the virtual machine either from the Hyper-V manager or from Virtual Hyper-V Virtual machine connection on the Start Menu. You may need to right-click and Run as Administrator from the options on the bottom row.

This will open a small dialog to choose the VM. For VM's running on the current machine Server = localhost.

## Windows 10 for Microsoft Office users

Hyper-V - Running a virtual machine

Choose from the pull-down list of virtual machines.



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*You can do this more than once to start multiple VM's at the same time.*

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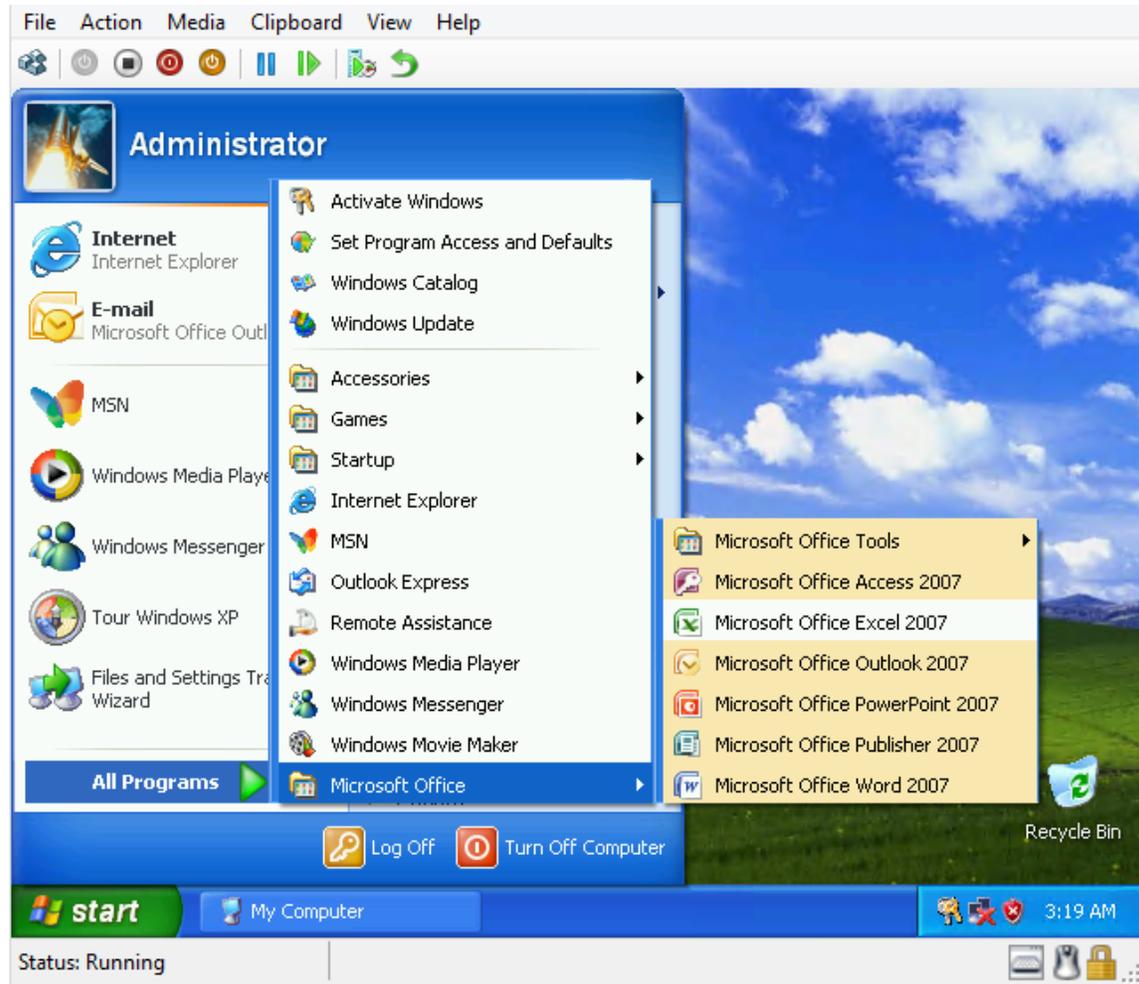
If the VM is off, you start it from the blue-green Start button.



Once Windows has started you use your mouse and keyboard to run the virtual machine just as you would a normal computer. Use the Start Menu to navigate to the Office program of your choice.

# Windows 10 for Microsoft Office users

Hyper-V - Running a virtual machine

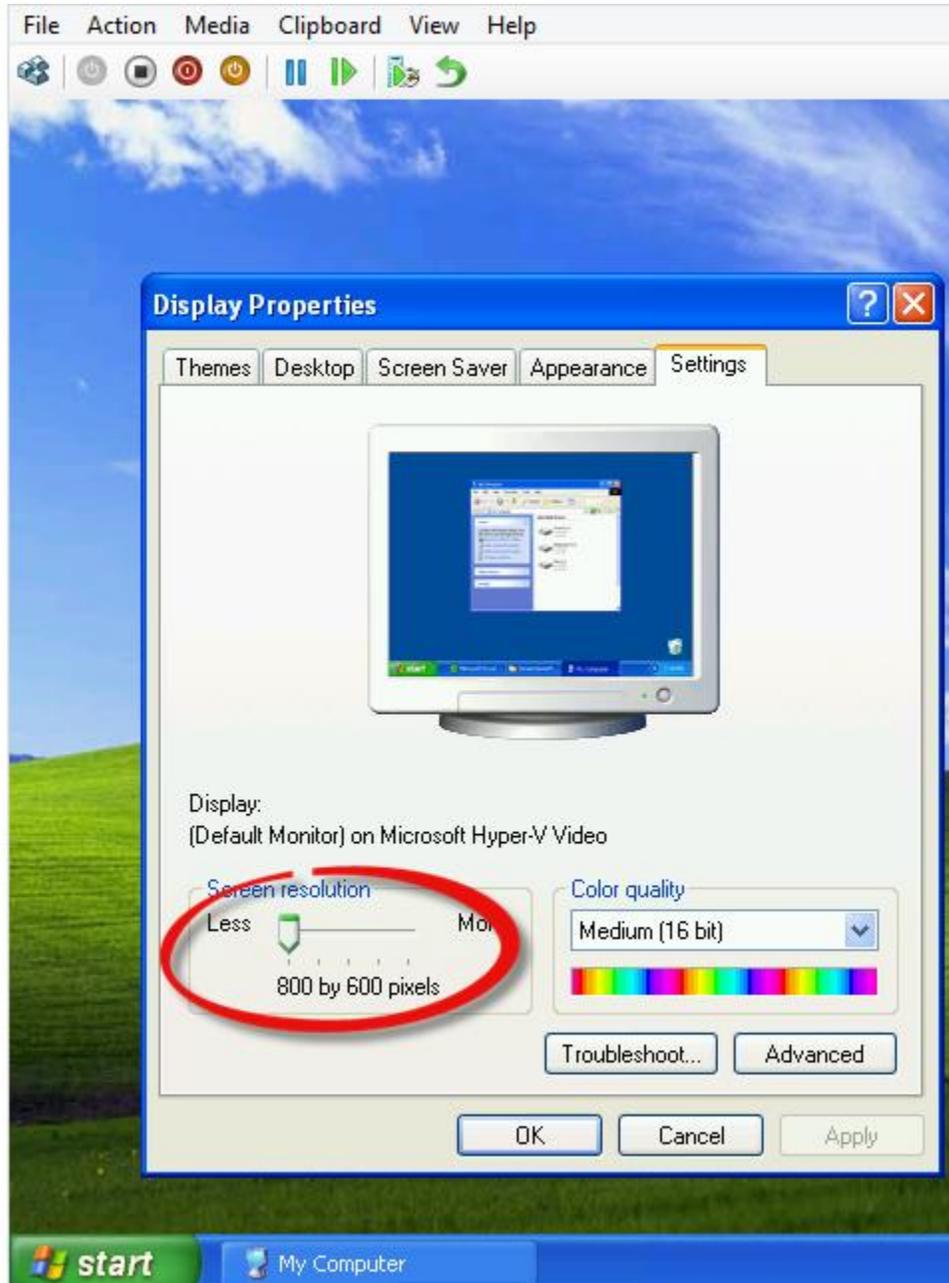


## SCREEN SIZE

To change the screen / window size, change the screen resolution in the virtual machine.

# Windows 10 for Microsoft Office users

Hyper-V - Running a virtual machine



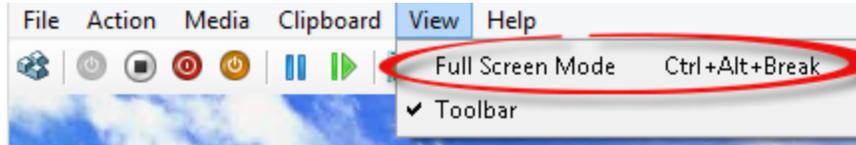
Hyper-V will detect the change in screen within the virtual machine and adjust the window size accordingly.

FULL SCREEN

The alternative is to go full screen and let the virtual machine take over the entire physical screen. Do that from View | Full Screen Mode or the shortcut Ctrl + Alt + Break.

# Windows 10 for Microsoft Office users

Hyper-V - Running a virtual machine



In Full screen there's a bar at the top with some controls:



**Pin** – controls if the top bar appears all the time or just when you move your mouse to the top edge.

**Lock** – shows the security status of the VM

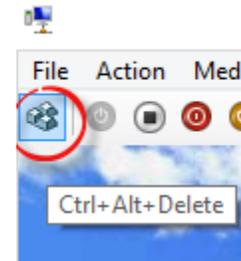
The three buttons on the right are the familiar, Minimize, Restore and Close window controls.

## SHORTCUTS

Keyboard shortcuts (like the ones used in Office) will work depending on which machine (physical or virtual) has focus at that time.

When you're switching between machines a lot, sometimes you can type and wonder why it's working. The reason is that the cursor is focused on the wrong machine.

Ctrl + Alt + Delete is a key combination that has special meaning deep in the bowels of Windows code. When you press it, the host computer will always respond. That's why there's a special toolbar button on the VM to let you 'type' that keyboard combination if necessary.



## COPY / PASTE

As long as you have integration services installed you can copy and paste between the host machine and the virtual machine. In other words, the host and guest machines share a single clipboard.

If you copy a large amount of data, there may be a noticeable pause as the clipboard catches up. For small/regular amounts of text or images the copy and paste should be seamless.

## SHARING FILES BETWEEN MACHINES

There are two ways to share files between the physical and virtual machines.

# Windows 10 for Microsoft Office users

Hyper-V - Running a virtual machine

## COPY / PASTE

For small files (say, under 2MB) you can simply copy and paste them between explorer folders on the machines.

As noted above, the clipboard can get bogged down when the amount of data gets larger.

## NETWORK SHARES

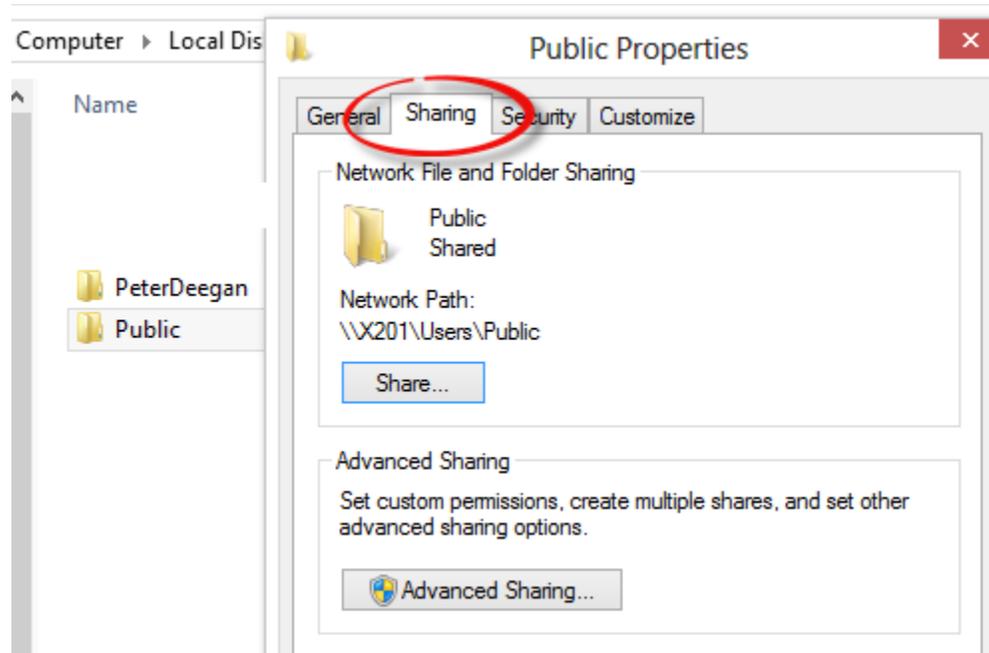
For larger files or files shared between the host and VM the solution is to make a folder share on the host which is accessible from the virtual machine. It's the same process as making a shared folder for use by other physical computers on your network.

---

*A Hyper-V network switch has to exist and be linked to the virtual machine.*

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On your host machine make or choose a shared folder. Right-click on a folder, choose Properties then the Share tab.

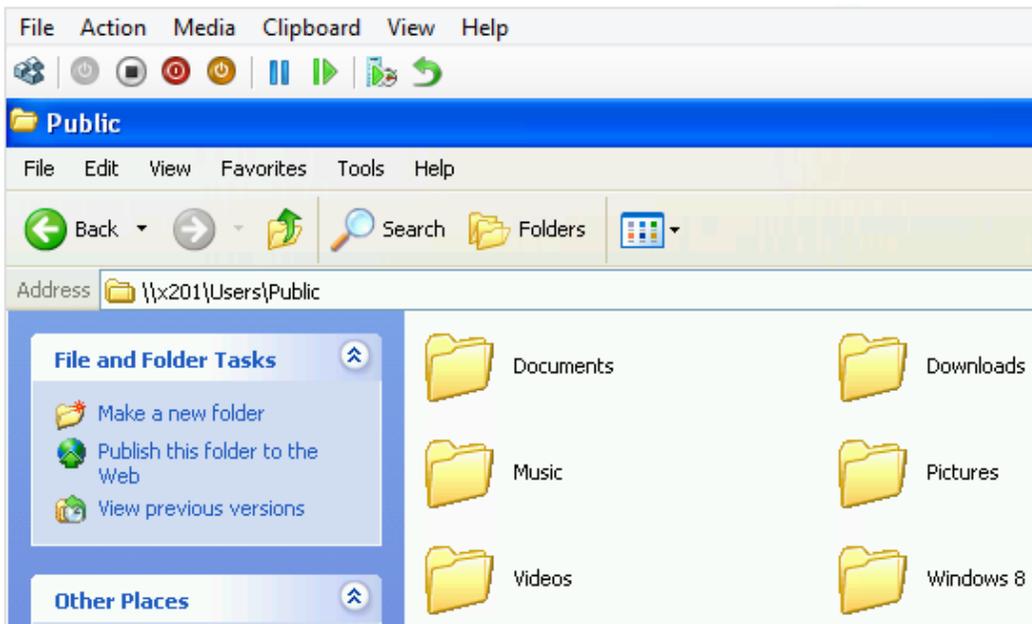


You can make a special share for virtual machines, make certain folders available or use Public.

# Windows 10 for Microsoft Office users

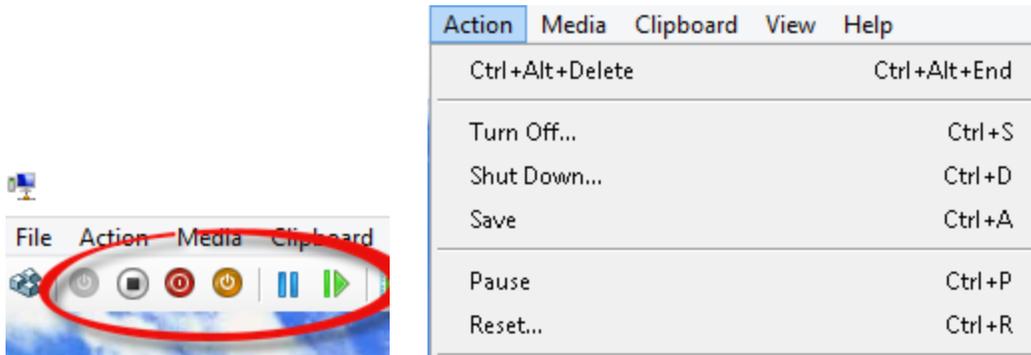
Hyper-V - Running a virtual machine

Here's the Windows XP Explorer in the VM showing the Public folders in the host computer.



## TURNING ON AND OFF

Hyper-V has various options for turning on or off a virtual machine. They copy the power options you have for a physical machine and are in a row across the VM toolbar and on the Action menu



### START

Will start a virtual machine. The same as pushing the ON button for a physical computer.

### TURN OFF

Will instruct the guest operating system to shut down. It's the same as choosing Shut Down from the power options on the virtual machine.

# Windows 10 for Microsoft Office users

## Hyper-V - Containers

### SHUT DOWN

This will stop the virtual machine immediately with no saving of data. It's the equivalent of pushing the off button on a physical computer or kicking out the power cord! Use with care and only when desperate or testing extreme situations.

### SAVE

Tells Hyper-V to save the virtual machine to hard disk for later restart. The equivalent of Hibernate in the physical world.

The Save button is the most commonly used power option on a virtual machine. It lets you save the computer right where you were working and resume at that place anytime later.

### PAUSE

The virtual machine will be 'frozen' for later resumption. There's no equal to this on most physical machines except, perhaps, sleep mode. Most commonly Pause is used to allow other programs or VM to run faster with more resources available.

### RESET

Same as Shut Down and just as dangerous! Like the reset buttons on some computers, Reset will turn off the VM immediately then restart it.

## CONTAINERS

Containers are a new feature in the mid-2016 update to Windows 10.

They are very new and show how Microsoft may be moving in terms of software development and security.

Containers are a form of virtual machine technology that strips away a lot of the overhead and administration involved in the traditional VM.

A standard virtual machine, like the ones described earlier in this chapter have software running in a full operating system within the virtual machine. That second operating system takes up a lot of computer resources (CPU, memory etc.).

It would be more efficient to run the software without the entire second operating system hogging resources. In other words, run the software in some kind of slimmed down operating system or container.

## Windows 10 for Microsoft Office users

### Hyper-V - Containers

Microsoft speak says Containers are '*isolated, resource controlled and portable operating environment*'.

That's the broad idea of containers. An application is run in a container which has direct, more efficient, links to the physical computer.

This isn't just about efficiency. Conflicts between programs has been a problem in Windows since the beginning. There can be accidental conflicts due to setup or programming errors. More worrying are security issues where a worm or virus affects other software or parts of the computer.

Software running in a Container has definite limits on what it can do and what can be done to it. In a different way, Apple has 'containerized' iPad and iPhone apps.

In some future ideal world, Microsoft might hope to run all programs in Containers to improve stability and security of Windows. But that's some years away, if it happens at all.

For the moment, we have the first public version of Containers. It was added to Windows 10 'Anniversary Edition' quite late in the testing process.

## CHANGING SETTINGS

In this chapter we'll cover the basics of changing settings in Windows that aren't on the main configuration screens.

There are many options available to change in two places – the Registry and the Policies.

When you change a setting in a Windows dialog you are often changing a registry entry. The tick box or field you see is just a more accessible view of that registry entry.

---

*We've decided to show you how to edit the registry or policy once here instead of repeating the same step-by-step each time they are needed in the book.*

---

This also helps the many readers who know (all too well) how to change the registry and policies. Rather than make them wade through step-by-step details they already know, the book has just the core details needed.

Neither the Registry nor Policy Editor have changed much for many versions of Windows. We've written this from Windows 10 but almost the same applies to earlier version of Windows too.

### REGISTRY

The registry is the common store for most Windows and many application settings. Usually you don't have to touch the registry but sometimes there are settings only available by directly changing it.

We won't bore you with the details of how the registry is structured and the differences between 'HKEY\_Current\_User' and 'HKEY\_USERS' etc. That's for a vastly more technical book than this humble tome.

Most people, if they need to edit the registry at all, will simply follow instructions to a particular location, key and value. Those instructions might be in this book or from some web site.

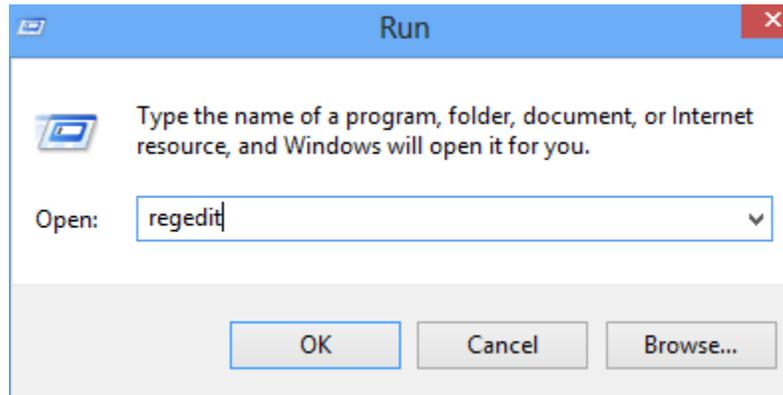
# Windows 10 for Microsoft Office users

## Changing Settings - Registry

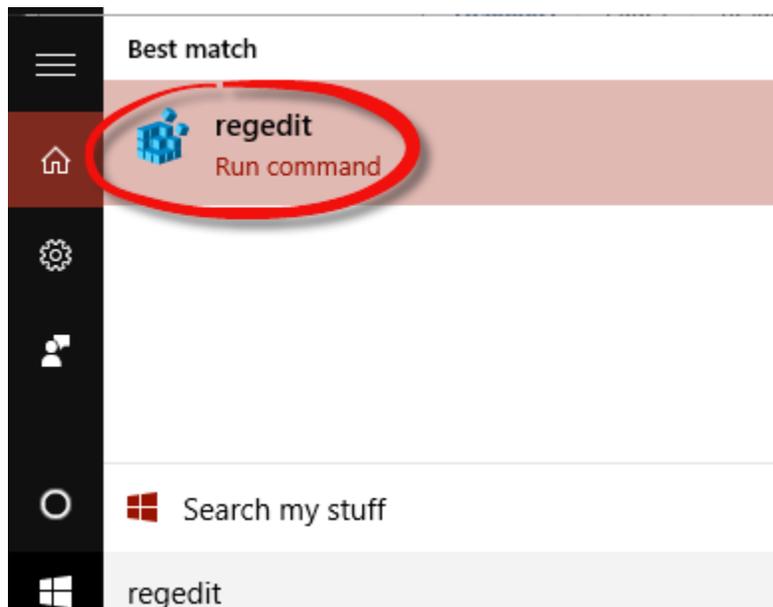
### REGEDIT

The Registry Editor (called Regedit) isn't on any regular menu, not even the Administration Menu.

The standard Run dialog (right-click on the Start Button and choose run), familiar to past Windows versions appears. Type `regedit` then click OK.



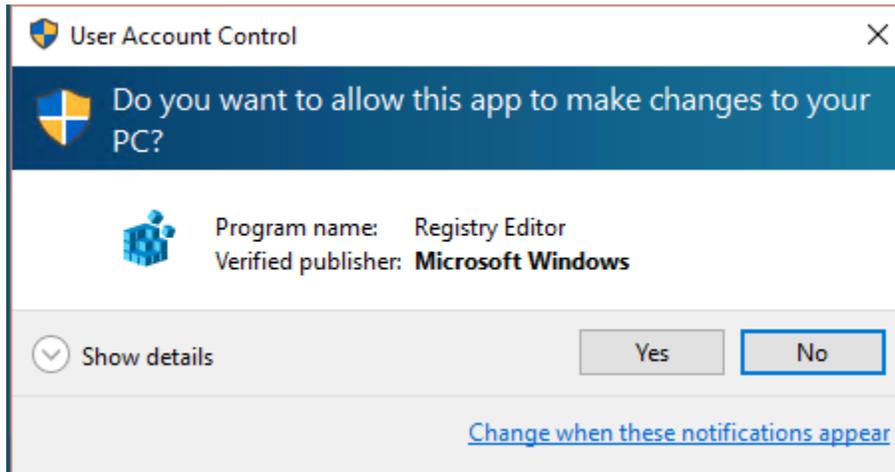
Or you can bypass all that from the Start Menu by just typing `regedit` and let search find it:



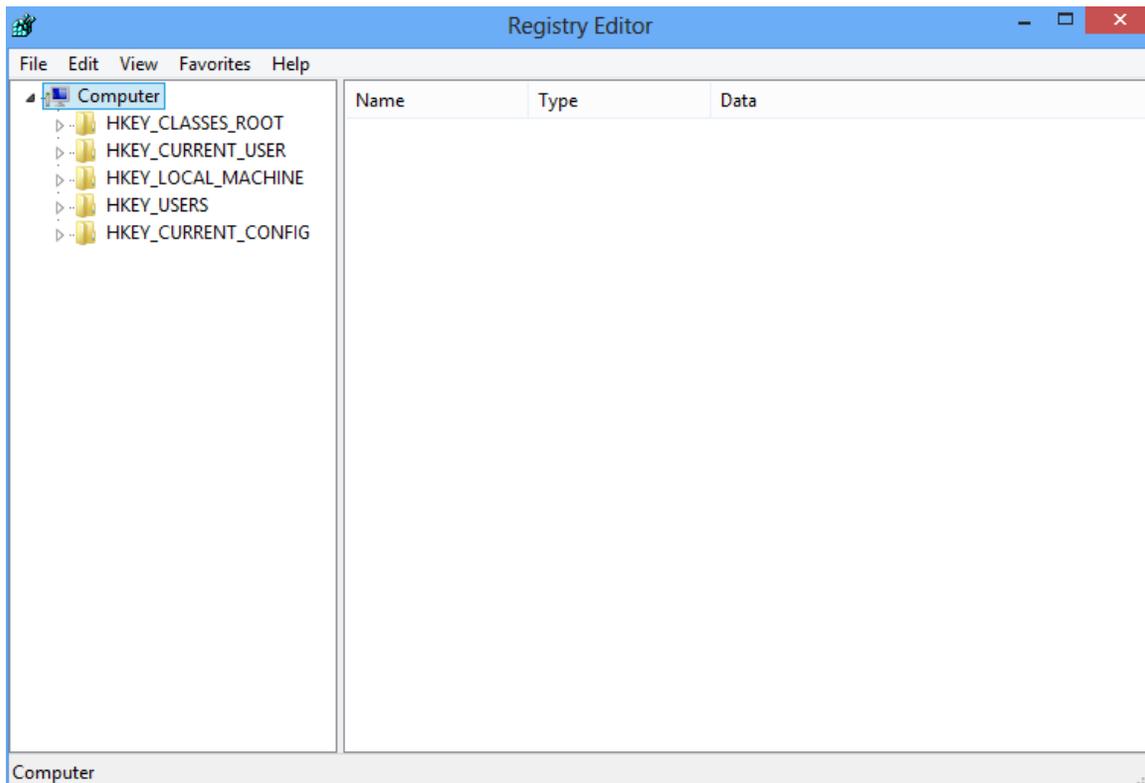
# Windows 10 for Microsoft Office users

## Changing Settings - Registry

You'll probably get a User Account Control (UAC) prompt:



That's normal, click OK to continue and lo! there's the Registry Editor.



If you've used the Registry Editor in earlier versions of Windows you'll find nothing changed here. In fact we could not find any functional difference in the Windows 10 Regedit from the same program in Windows 7 or 8.

Registry entries are made up of:

**Key** – these are the labels or tree of name on the left pane of the registry editor.

## Windows 10 for Microsoft Office users

### Changing Settings - Registry

**Value** – the name of a setting under a particular key. A value can be various types, the most common are String, Binary or DWORD (32-bit).

**Data** – this is the setting, number or text inside the value.

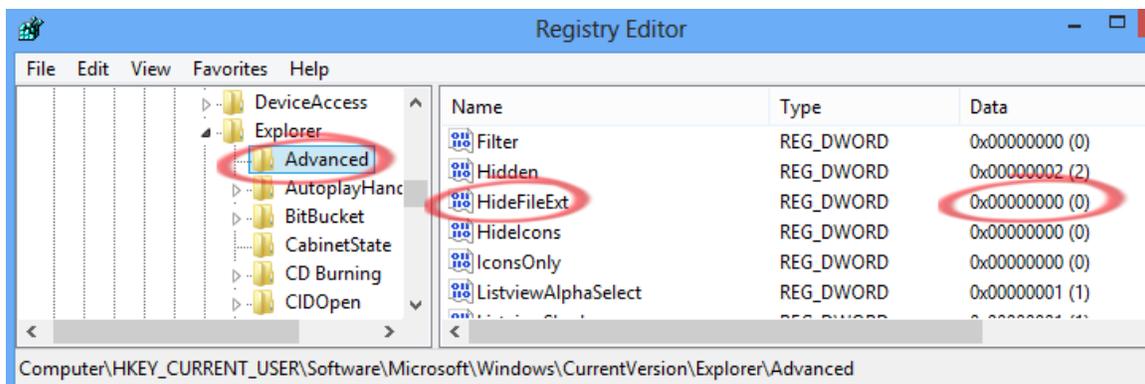
It's easy to get value and data confused; the naming choices could have been better. Remember that a value contains data.

Here's the Registry Editor showing:

Key = HKEY\_CURRENT\_USER\Software\Microsoft\Windows  
\CurrentVersion\Explorer\Advanced

Value = HideFileExt a DWORD value

Data = 0 (zero)



---

*Because the registry is essential to the running of Windows, any editing of it runs the risk of hurting your entire computer.*

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That's rare and even rarer if you take a little care but can happen so the first rule of editing the registry is ...

BACKUP

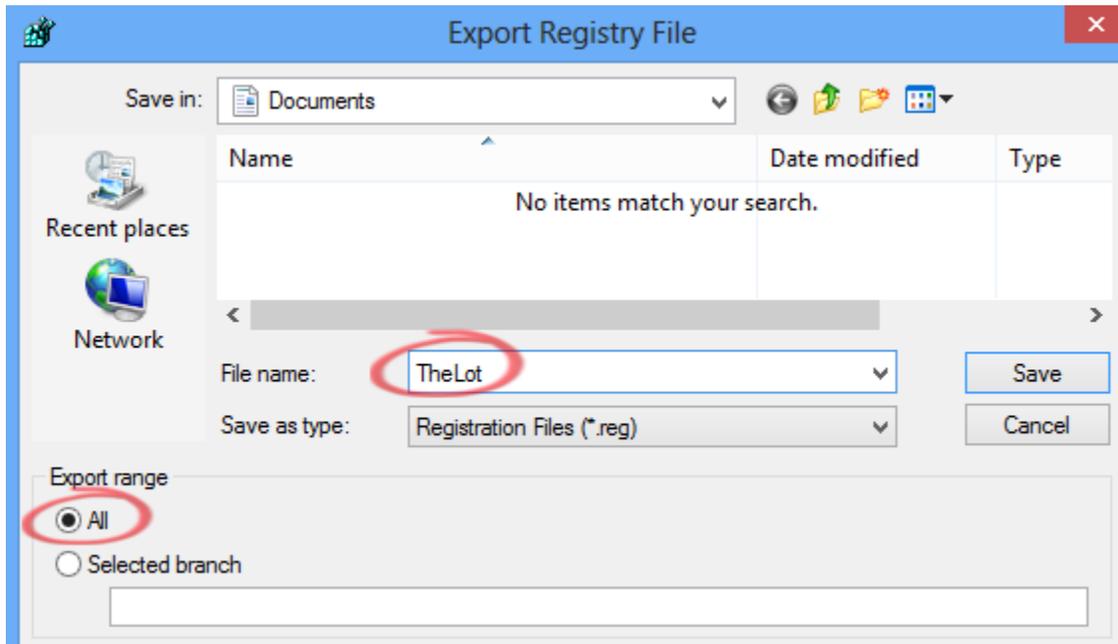
Yeah, I know, you've heard it a million times before but it only takes a moment to back the registry and it can be a life-saver.

You can backup the entire registry or just part of it.

## Windows 10 for Microsoft Office users

### Changing Settings - Registry

To backup the entire registry choose File | Export. Give the export file a name and make sure the 'All' is the export range.

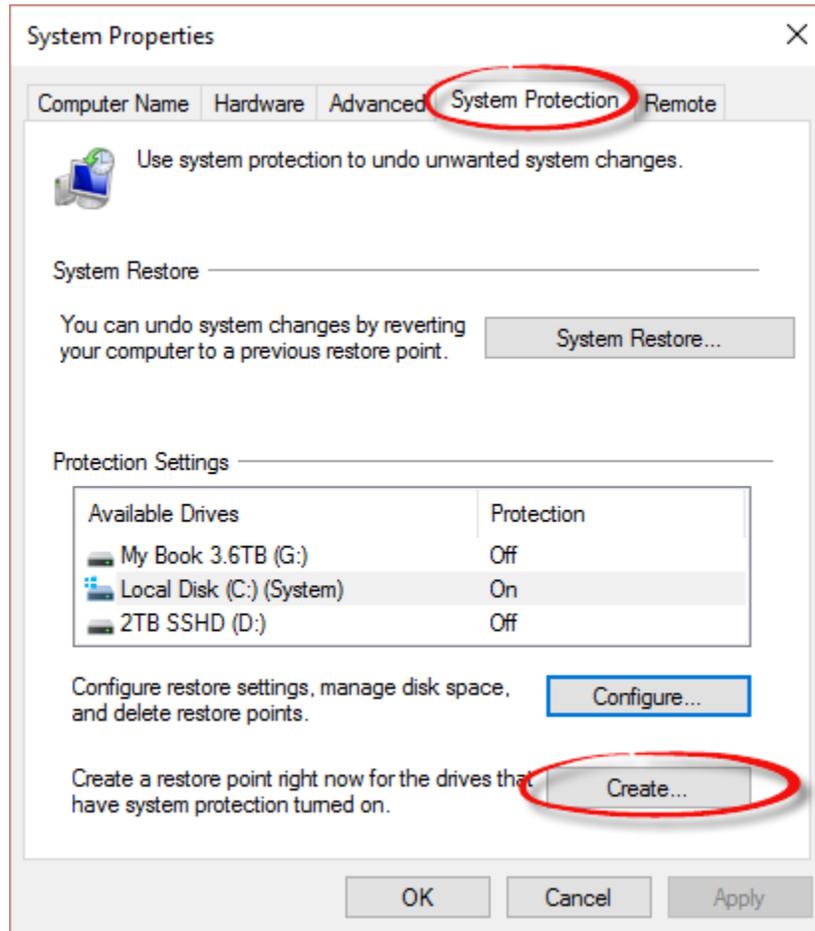


## Windows 10 for Microsoft Office users

### Changing Settings - Registry

The save location should be somewhere easily accessible on the computer – not a network share or location deep in the folder structure that would be hard to find if emergency recovery is necessary.

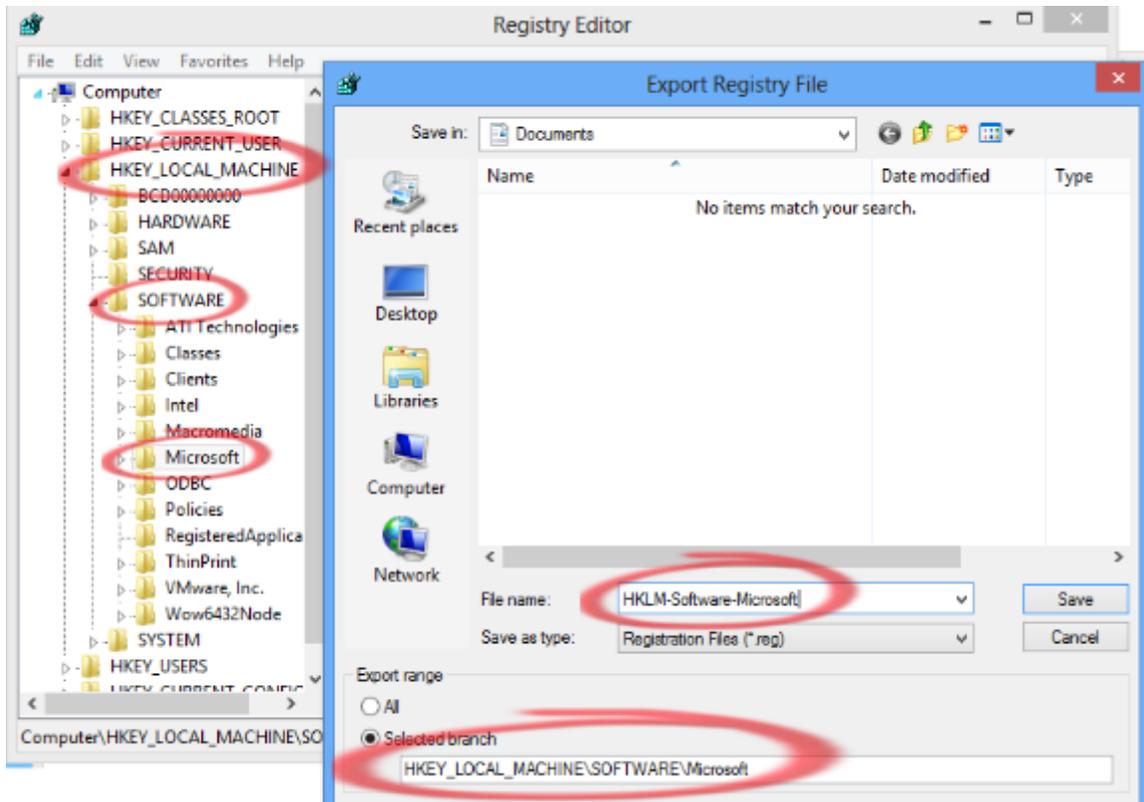
An alternative to a complete registry backup is to create a system restore point at Control Panel | System | System Protection then click 'Create' to make a restore point.



To backup part of the registry is almost the same. Navigate to the part of the registry you want to backup, then choose File | Export. The registry location you've selected is put in the Export Range field for you.

# Windows 10 for Microsoft Office users

## Changing Settings - Registry



Give a name to your export file. In this example we've used the registry path (HKLM = **HKEY\_LOCAL\_MACHINE**). Click Save.

For your information, the export files are plain text files that can be read in Notepad.

```
HKLM-Software-Microsoft - Notepad
File Edit Format View Help
Windows Registry Editor Version 5.00

[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft]

[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\.NETFramework]
"Enable64Bit"=dword:00000001
"InstallRoot"="C:\Windows\Microsoft.NET\Framework64\"
```

It's not in XML format, as you might expect, because the registry and import/export systems were created long before Microsoft got the 'XML religion'.

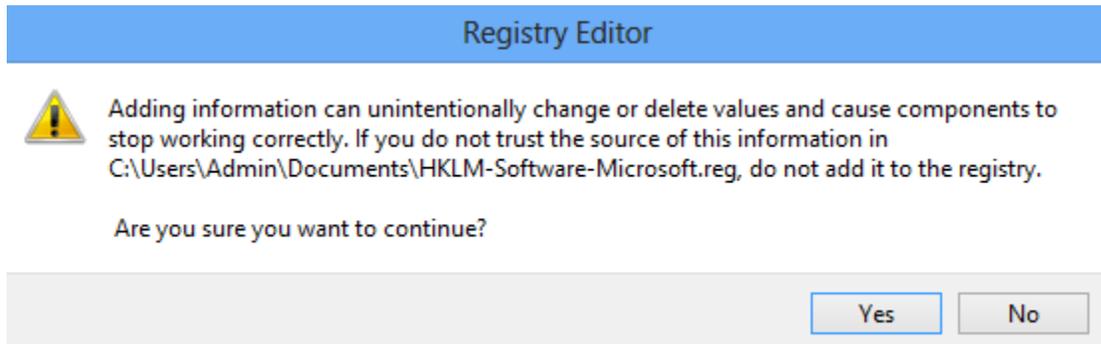
IMPORT

If you need to restore a part of the registry go to File | Import and choose the .reg file. The REG file extension is usually registered to the Registry Editor so

## Windows 10 for Microsoft Office users

### Changing Settings - Registry

you all really have to do is double-click on the reg file and it will be imported after a warning:



Import is also occasionally used to add or change a registry entry. A web site or support person might send you a '.reg' file to import into the Registry. Only accept those files if you're absolutely sure about the contents.

#### EDITING

Editing a registry entry is simple when you have the location and setting. In this example we'll use a registry setting that you can easily change in the Control Panel (if you need to, use the Folder Options to reset the registry).

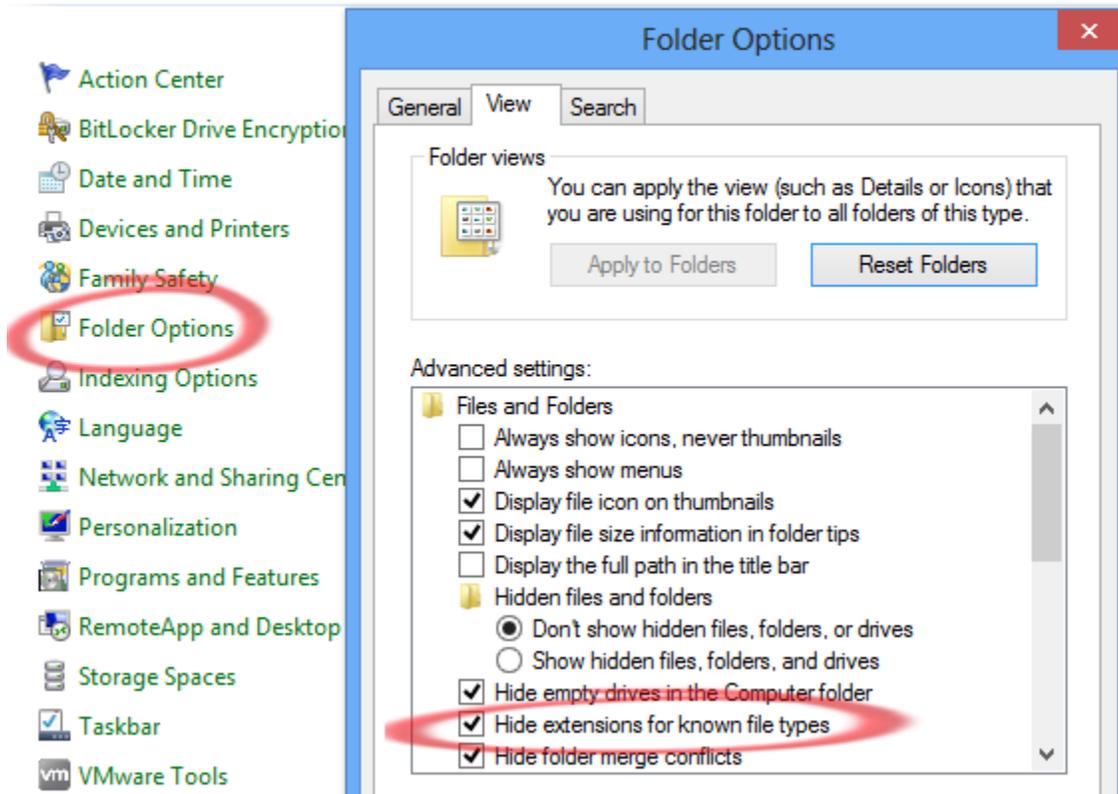
The setting is 'Hide file extensions for known file types'. Microsoft's default is to hide all file extension; something we've never liked and always change. Instead of seeing 'Settings' in Explorer we like to see 'Setting.doc' or 'Settings.docx' so it's clear that it's a Word document.

# Windows 10 for Microsoft Office users

Changing Settings - Registry

You can change this from Control Panel | Folder Options | Advanced Settings:

[Adjust your computer's settings](#)



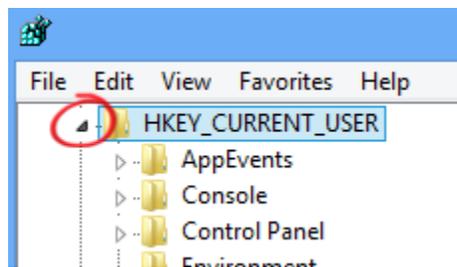
But instead let's change it in the registry.

Open Regedit as shown above then navigate down the 'tree' of keys on the left hand side.

We're heading for the registry key

`HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Explorer\Advanced` and the value `HideFileExt` to be changed to 0 (zero)

Click on the wedge next to **HKEY\_CURRENT\_USER** to expand that part of the registry tree.



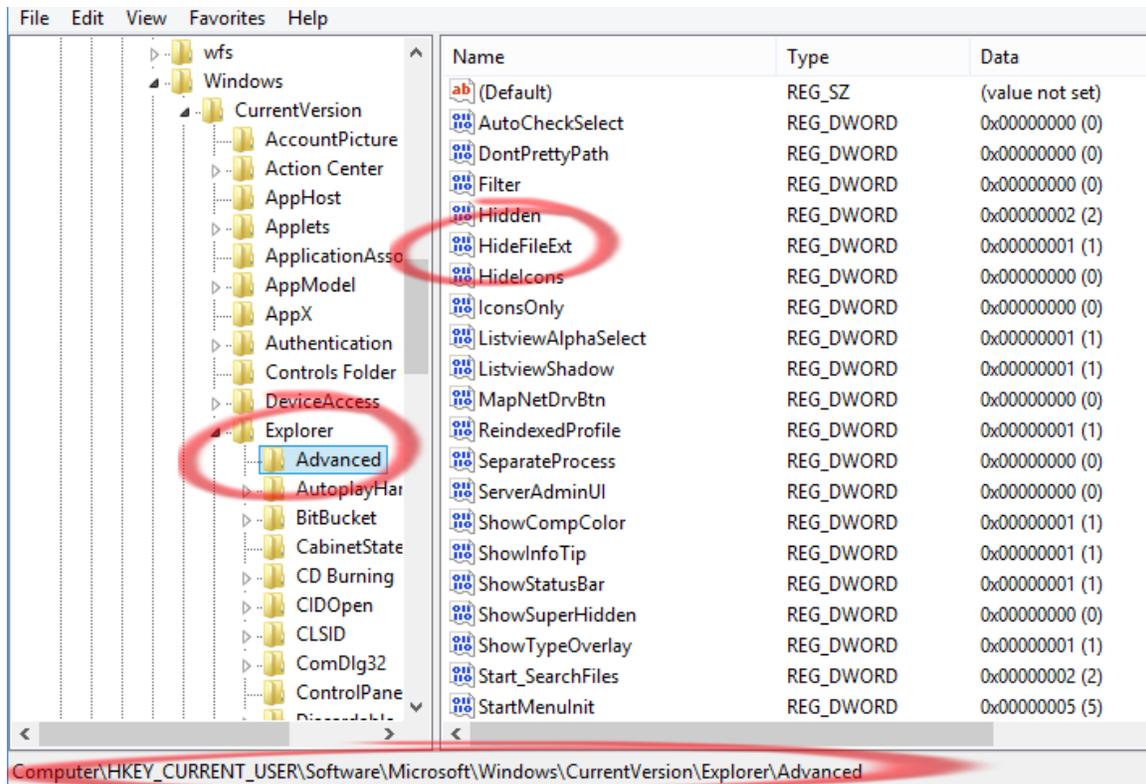
Then look for the **Software** key and open that branch too.

# Windows 10 for Microsoft Office users

## Changing Settings - Registry

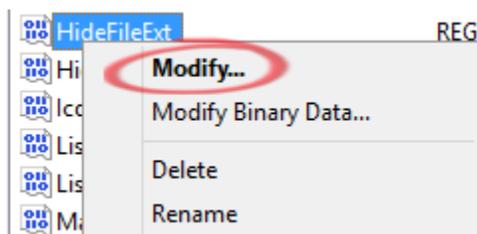
Continue doing that down the tree through **Microsoft** then **Windows** then **CurrentVersion** then **Explorer** until you finally reach the **Advanced** key.

On the right is the registry value we want to change **HideFileExt**



On the status line of Regedit is the current full location on the registry tree.

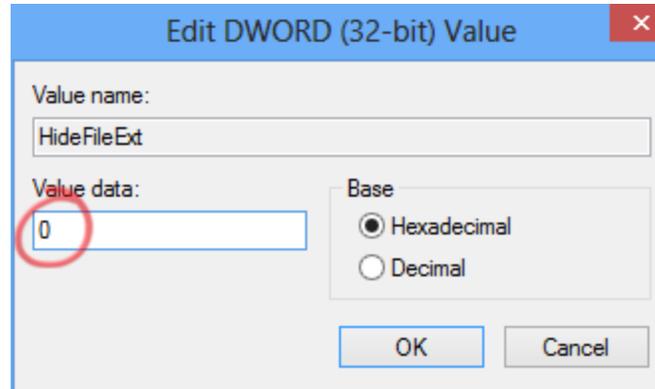
Right-click on the registry value 'HideFileExt' and choose Modify. Make sure you choose the correct value.



Now change the Value data to 0 (zero).

## Windows 10 for Microsoft Office users

### Changing Settings - Registry



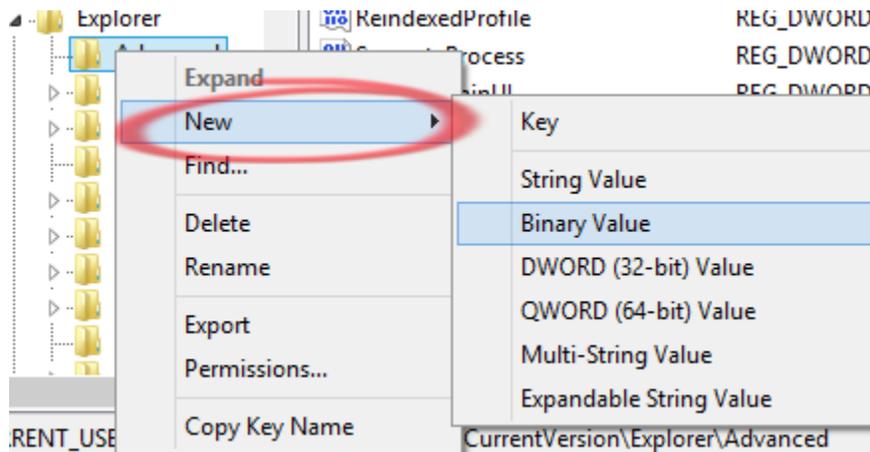
Click OK and you're done.

Depending on the change, it may be applied right away or the program needs to be restarted or refreshed.

#### ADDING

Sometimes you need to add a value that doesn't exist in the registry.

To do that go to the registry location then right-click on the parent key and choose New then the exact type of value you've been told to make:



Regedit will place a new value at the bottom of the current key list. Type in the exact name you've been told.



If you make a mistake with the value name, right click on it and choose Rename.

Then right-click and choose Modify, as shown above, to enter data for the value.

# Windows 10 for Microsoft Office users

## Changing Settings - Policies

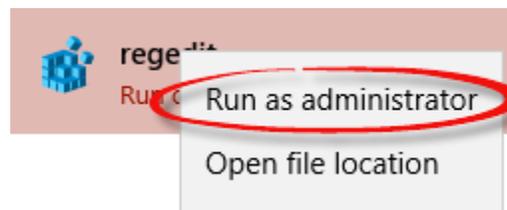
### PERMISSIONS

Sometimes a part of the registry is protected from changes. Only Administrators can edit these parts of the registry and even then they have to start Regedit explicitly as an Administrator.

You can see the permissions necessary for reading or editing part of the registry by right-clicking on a key and choosing Permissions.

This is a part of modern Windows security that trips people up. In the olden days (i.e. ten years ago <g>) it was enough to 'promote' a user to Administrator privileges. Now sometimes even an Administrator has to explicitly invoke their Admin rights by using 'Run as Administrator' to start a program.

To Run as Administrator, find Regedit from the Start Menu as shown above. Instead of clicking on the regedit.exe entry, right-click and choose 'Run as Administrator'.



### POLICIES

Windows Group Policies are less well known to individual users than the registry but they open the door to more Windows and application settings.

As the name suggests, policies are designed for network administrators to let them enforce certain settings or practices on a group of computers or users in an organisation. When Windows starts in an organisation it can check the main server, get any policies and apply them on the machine.

However, you don't need to be in a company to use policies. There are Local Group Computer policies that you can set for your single computer.

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*The Group Policy Editor is not available in Windows 10 Home edition.*

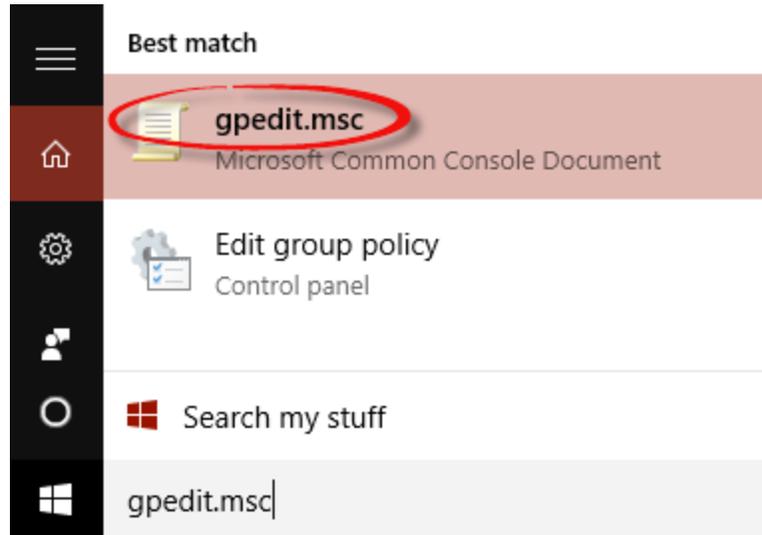
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Just like the registry we won't go into all the details of Windows Policies. Here we'll just show you how to edit a policy according to some details you've been given.

## Windows 10 for Microsoft Office users

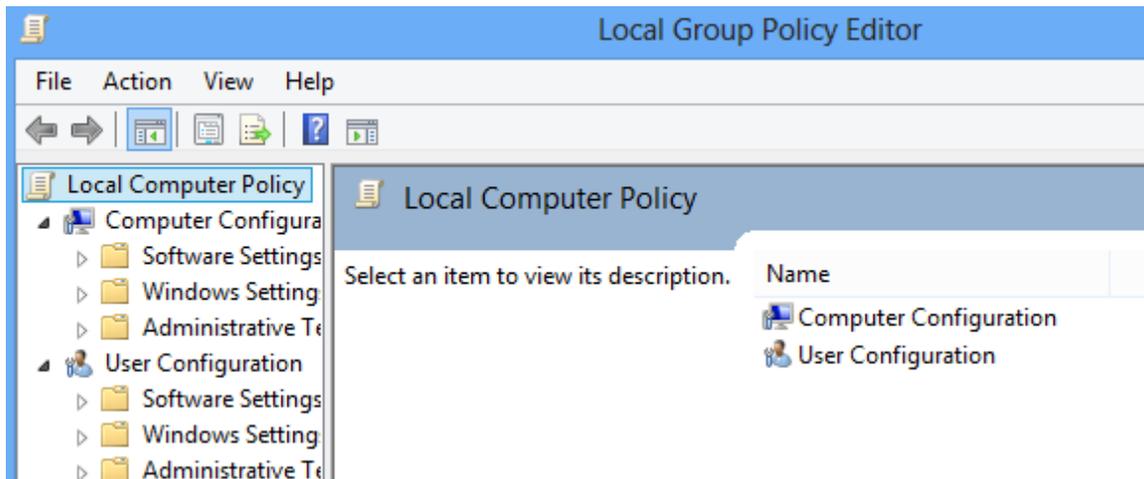
### Changing Settings - Policies

The Policy editor is called `gpedit.msc` and the easiest way to it is typing the name into the Start Menu search.



It may occasionally be necessary to 'Run As Administrator' by right-clicking on the icon and choosing that option from the menu.

The Local Group Policy editor opens up like this:



Unlike the Registry, all policies are in place. You can't add or delete a policy.

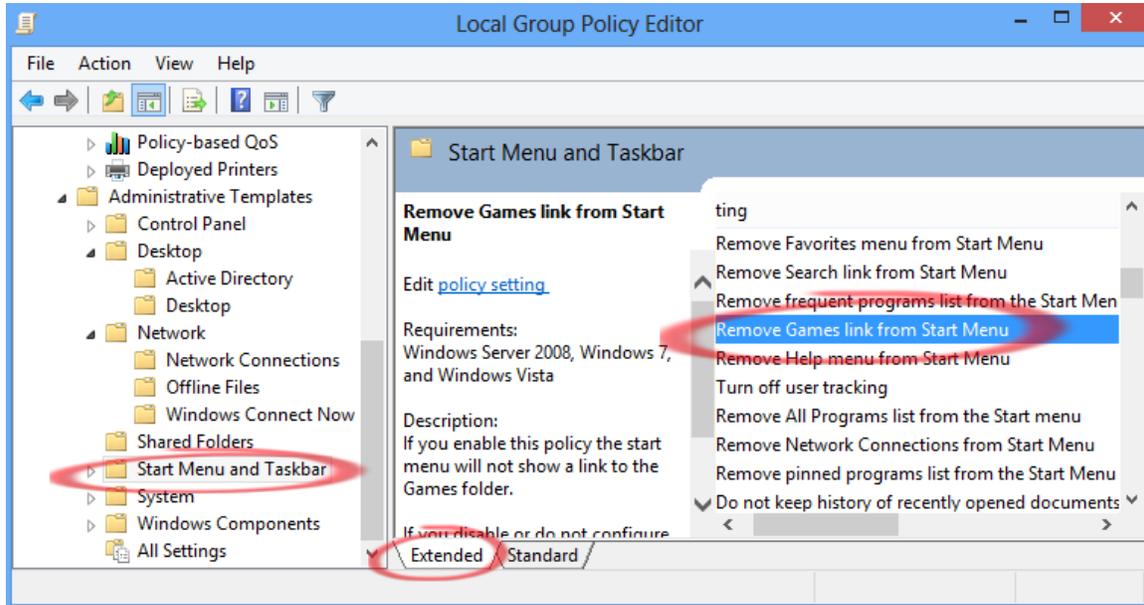
Some policies are 'Not configured' meaning they are neither turned on or off. The policy is dormant and some other Windows setting will apply.

As an example let's look at the policy to remove the Games link from the Start Menu – something that companies might want to do.

# Windows 10 for Microsoft Office users

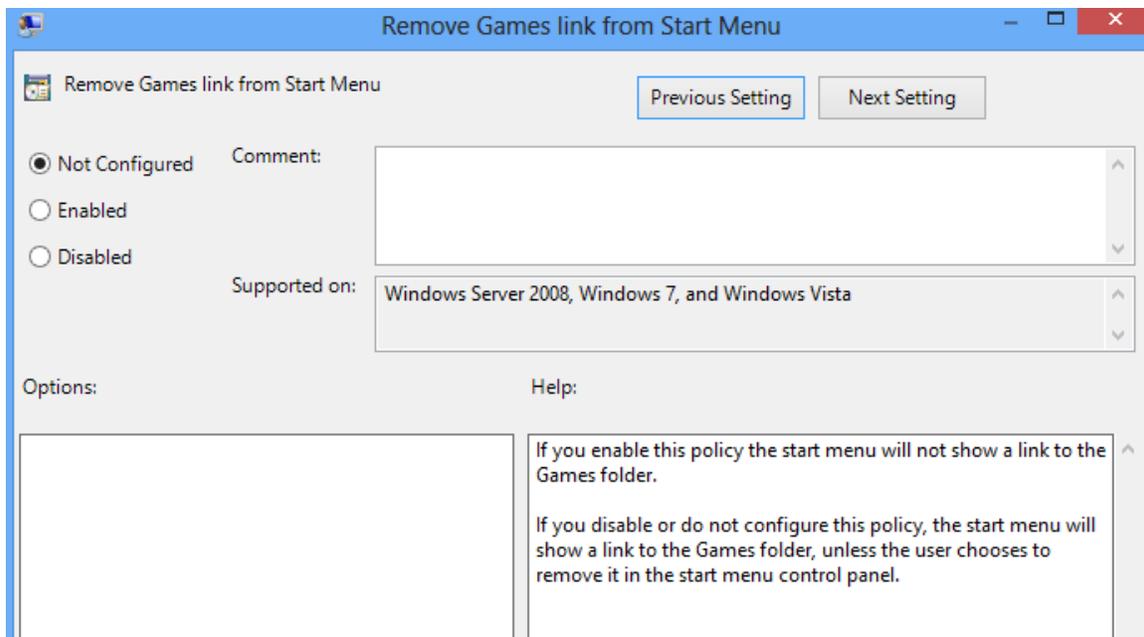
## Changing Settings - Policies

That policy is at **User Configuration | Administrative Templates | Start Menu and Taskbar** with a setting called **Remove Games link from Start Menu**.



If you use the 'Extended' tab you'll see an explanation of the policy. What versions of Windows it applies to (note in this case it does NOT apply to Windows 10 so this demo is quite harmless) and a description of what the policy does. In this respect Policies are much easier to understand than the Registry.

Right-click on the policy and chose Edit to see all the details:



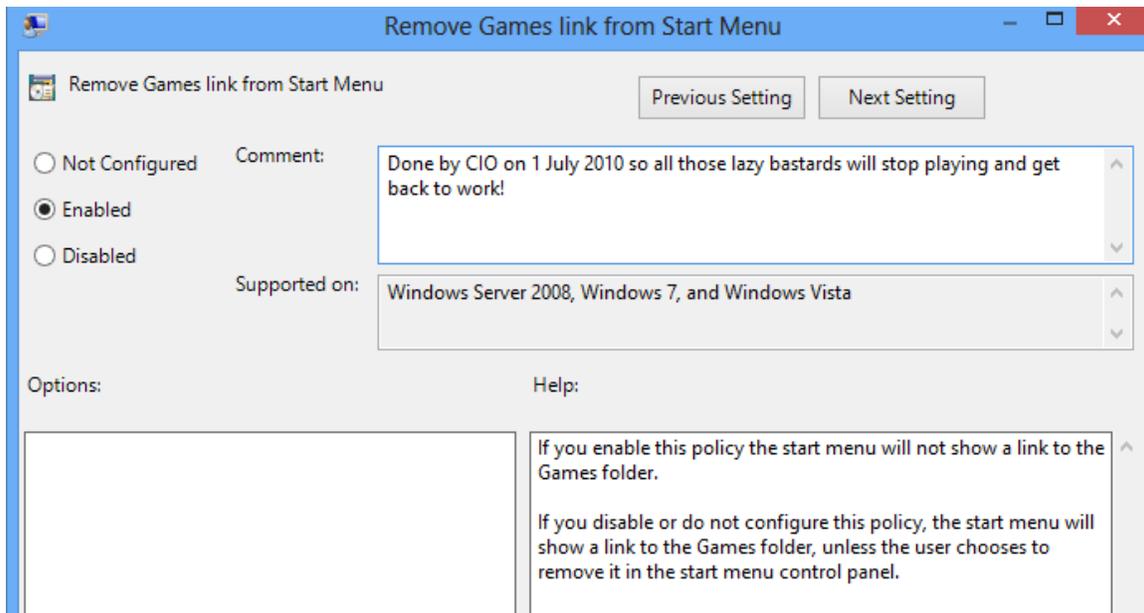
## Windows 10 for Microsoft Office users

### Changing Settings - Policies

Currently this policy is Not Configured. You can either Enable the policy or Disable it.

Policies can get tangled up in double-negatives. The 'Remove Games link ..' policy set to negative will result in the Games link appearing – the negative 'Remove' is cancelled out by the negative policy setting. 'Enable' and the policy will make the Games link disappear. Hopefully the help text will make the choices clearer.

To enforce a policy, for or against, simply choose 'Enabled' or 'Disabled'.



You can add a comment if you wish.

Click on Apply to save the change.

## Windows 10 for Microsoft Office users

Task Manager - Opening

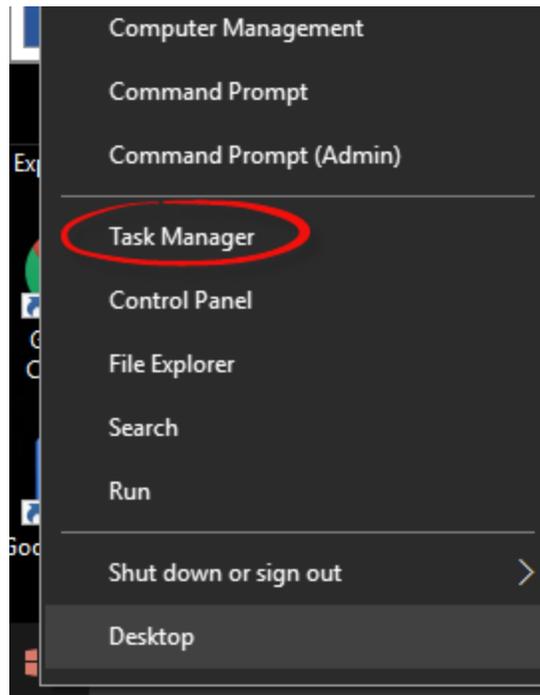
# TASK MANAGER

Task Manager is the place for all sorts of nerdy information about Windows. What's running, how much memory, CPU and other resources are being used on a second-by-second basis. The Task Manager interface was improved in Windows 8 and is the same in Windows 10.

There's a lot of information in the Task Manager, most of which is beyond the needs of us mere humans. But there are some useful tricks we'd like to share.

## OPENING

Task Manager is available by right-mouse clicking on the Start Menu button at bottom left or the date/time part of the taskbar.



# Windows 10 for Microsoft Office users

## Task Manager - Opening

If necessary, click on 'More details'. The Processes tab is the default and often the most useful view.

Name	Status	8% CPU	38% Memory	100% Disk	0% Network
<b>Apps (2)</b>					
Task Manager		0.4%	8.9 MB	0 MB/s	0 Mbps
Windows Explorer		0%	42.6 MB	0 MB/s	0 Mbps
<b>Background processes (21)</b>					
COM Surrogate		0%	1.6 MB	0 MB/s	0 Mbps
Disk Defragmenter Module		0%	0.6 MB	0 MB/s	0 Mbps
Host Process for Setting Synchr...		0%	5.1 MB	0.1 MB/s	0 Mbps
Host Process for Windows Tasks		0%	1.2 MB	0 MB/s	0 Mbps
Host Process for Windows Tasks		0%	2.1 MB	0.1 MB/s	0 Mbps
Microsoft Distributed Transacti...		0%	0.7 MB	0 MB/s	0 Mbps
Microsoft Windows Search Inde...		0%	7.6 MB	0 MB/s	0 Mbps
Runtime Broker		0%	0.9 MB	0 MB/s	0 Mbps
SkyDrive Sync Engine Host		0%	2.2 MB	0 MB/s	0 Mbps
Spooler SubSystem App		0%	2.2 MB	0 MB/s	0 Mbps

The running apps and processes are displayed with some information columns. The heading of the column shows the total utilization %.

**CPU** – the amount of CPU or processor resources in use. This figure usually doesn't go over 50% for more than a few moments.

**Memory** – the amount of RAM being used. If this figure is regularly over 90% then you'll probably notice a slowing down of your computer.

**Disk** – the % of read/write capacity being used. This is NOT total disk space, but the efficiency of the pathways reading from and saving data to the drive. The 100% total shown above is a sign that the disk read/write is overloaded and therefore the computer is running slower while it waits for the drive queue to clear.

## Windows 10 for Microsoft Office users

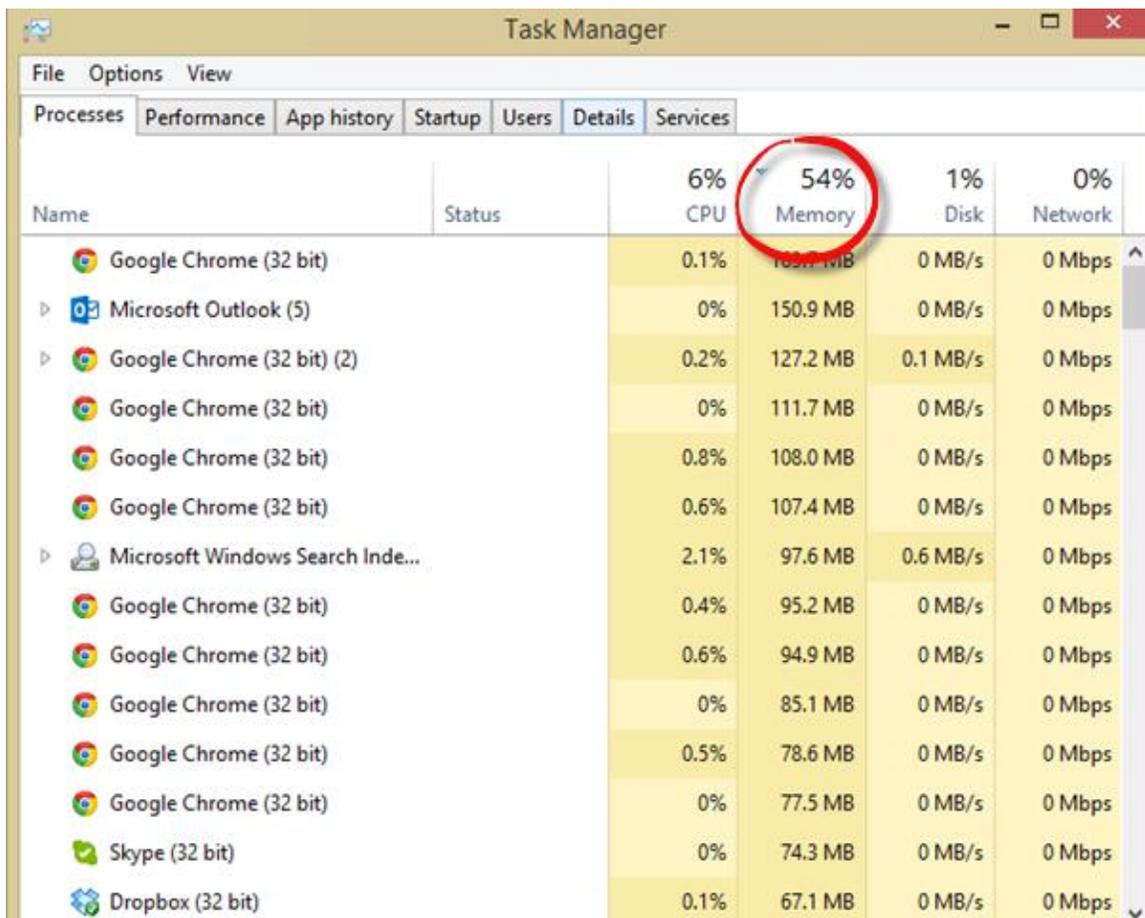
Task Manager - How much memory is being used?

**Network** – the efficiency and use of any network connection.

### HOW MUCH MEMORY IS BEING USED?

Each column is sortable – click on a column heading to sort ascending/descending. Use this to see which processes are using up the most resources.

For example, click on the Memory column header to see what's using the most memory at that moment.



The screenshot shows the Windows Task Manager Performance tab. The 'Memory' column header is circled in red, indicating it is the active sort criterion. The table lists various processes and their resource usage.

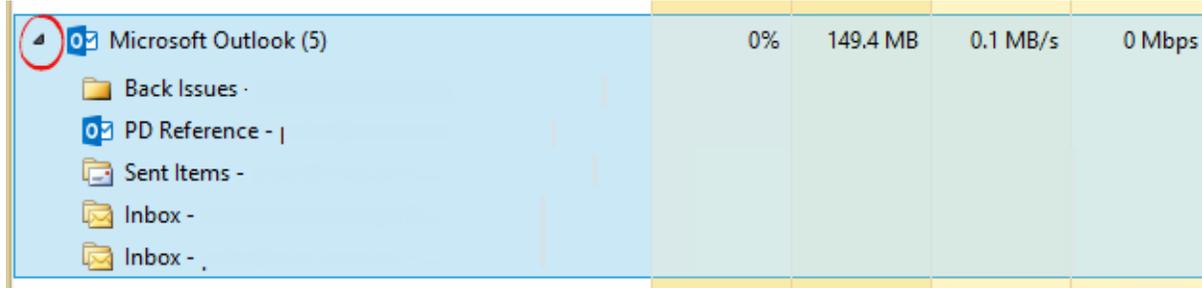
Name	Status	6% CPU	54% Memory	1% Disk	0% Network
Google Chrome (32 bit)		0.1%	109.7 MB	0 MB/s	0 Mbps
Microsoft Outlook (5)		0%	150.9 MB	0 MB/s	0 Mbps
Google Chrome (32 bit) (2)		0.2%	127.2 MB	0.1 MB/s	0 Mbps
Google Chrome (32 bit)		0%	111.7 MB	0 MB/s	0 Mbps
Google Chrome (32 bit)		0.8%	108.0 MB	0 MB/s	0 Mbps
Google Chrome (32 bit)		0.6%	107.4 MB	0 MB/s	0 Mbps
Microsoft Windows Search Inde...		2.1%	97.6 MB	0.6 MB/s	0 Mbps
Google Chrome (32 bit)		0.4%	95.2 MB	0 MB/s	0 Mbps
Google Chrome (32 bit)		0.6%	94.9 MB	0 MB/s	0 Mbps
Google Chrome (32 bit)		0%	85.1 MB	0 MB/s	0 Mbps
Google Chrome (32 bit)		0.5%	78.6 MB	0 MB/s	0 Mbps
Google Chrome (32 bit)		0%	77.5 MB	0 MB/s	0 Mbps
Skype (32 bit)		0%	74.3 MB	0 MB/s	0 Mbps
Dropbox (32 bit)		0.1%	67.1 MB	0 MB/s	0 Mbps

As you can see, there are many entries for the Google Chrome browser. That's because each browser tab is a separate program or process. All the major browsers do this now so that a 'bad' web page doesn't cause the entire browser to crash; instead only the affected tab is closed.

## Windows 10 for Microsoft Office users

### Task Manager - Shutting down Outlook

Click on any 'wedged' item to see the windows or sub-processes running.



Task Name	CPU	Private Bytes	Network Bytes/s	Network Category
Microsoft Outlook (5)	0%	149.4 MB	0.1 MB/s	0 Mbps
Back Issues -				
PD Reference -				
Sent Items -				
Inbox -				
Inbox -				

## SHUTTING DOWN OUTLOOK

Sometimes you need to force the shut-down of a program. It's not often needed but is most commonly needed with Microsoft Outlook.

You shut down Outlook in the usual way (File | Exit) and the program quickly disappears from the screen, but that's a trick. Outlook hasn't closed yet, just removed itself from sight. If all goes well, Outlook will fully shut-down within a minute of your original command.

For as long as Outlook has been available, it's had trouble shutting down. Certainly it's better behaved these days but even with Outlook 2016 on Windows 10, sometimes the program won't fully close.

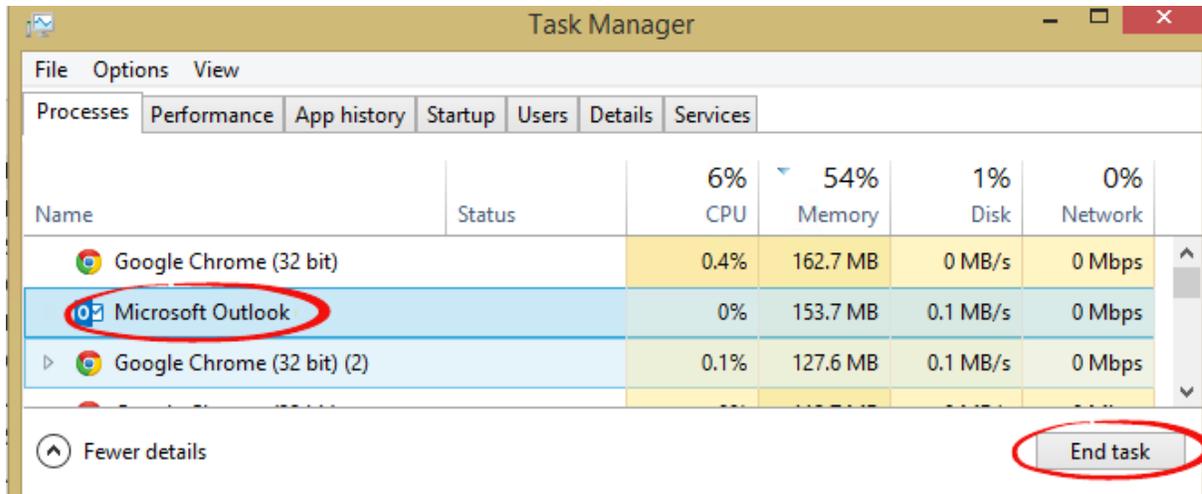
If Outlook doesn't properly close, you can't properly restart it and certainly can't start a different Outlook profile. Outlook can slow down a shut-down of the entire computer.

Most people restart their computer and spend the waste time cursing Outlook and its makers. But there's a faster option, shutting down Outlook from the Task Manager.

To see if Outlook is still hanging around in the background, start Task Manager.

## Windows 10 for Microsoft Office users

### Task Manager - Shutting down Outlook



If Outlook is there, select it then choose 'End task' from bottom right.

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*Only do this when absolutely necessary and after you've allowed several minutes to pass for Outlook to shut-down normally.*

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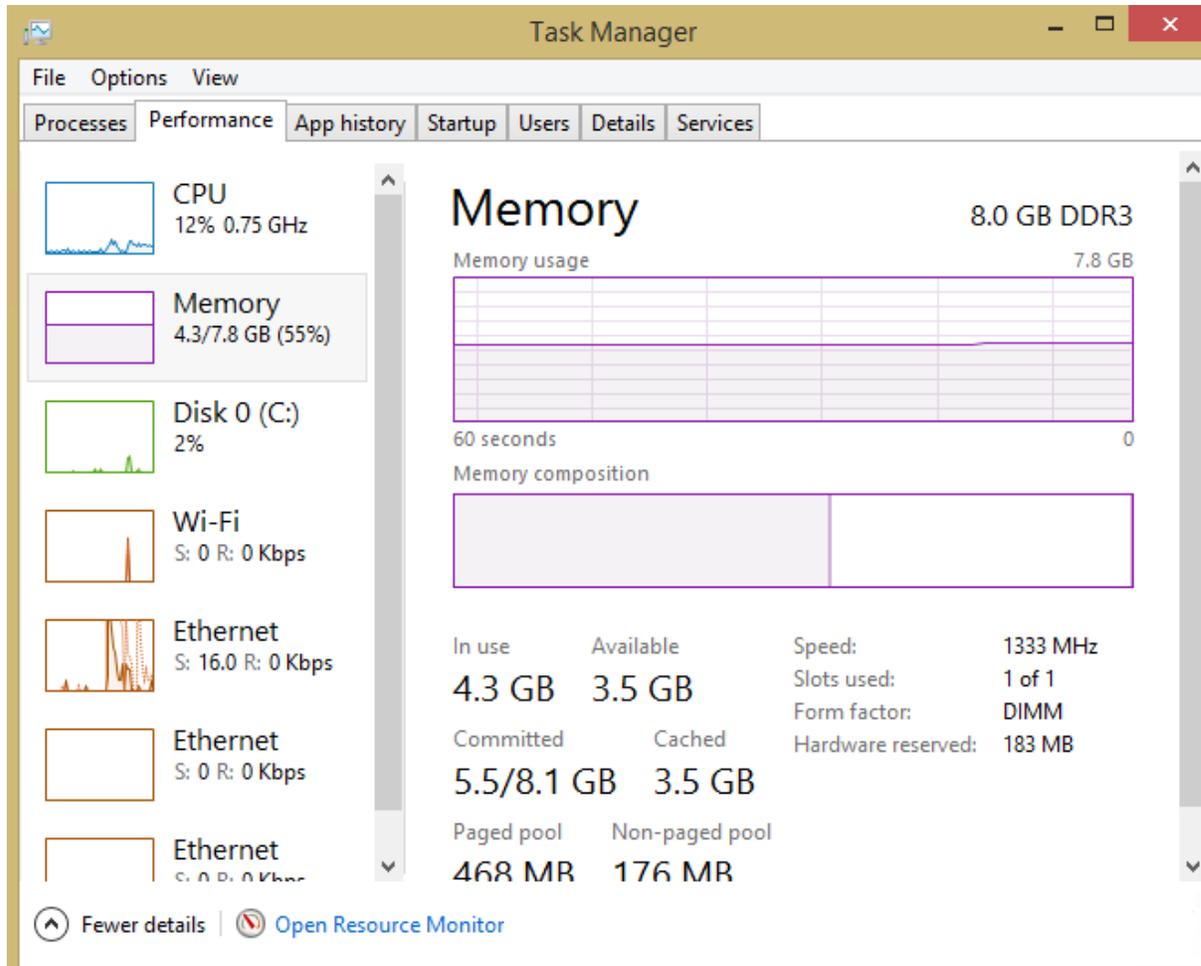
You can use the same trick for other stubborn programs too. Programs that have locked up and show 'Not Responding' can be shut down via Task Manager.

# Windows 10 for Microsoft Office users

## Task Manager - Performance

### PERFORMANCE

To see resource use in the recent past, choose the Performance tab.



In this view you can see CPU, Memory, disk traffic and network use graphs.

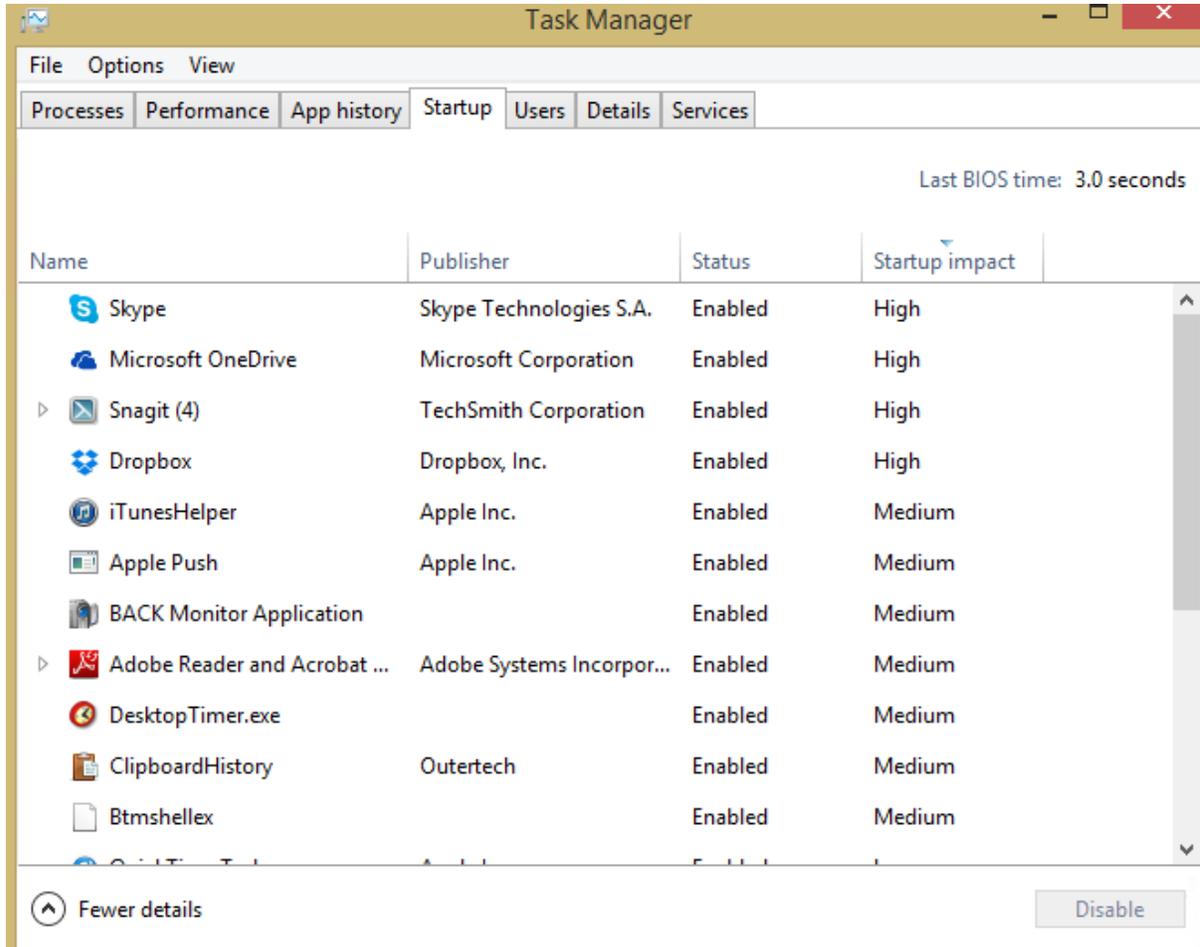
The Memory pane is especially handy because it shows the installed memory (8GB in the above example), the speed and slots used (useful info if you're considering an upgrade) then the memory being used and free.

# Windows 10 for Microsoft Office users

## Task Manager - Startup

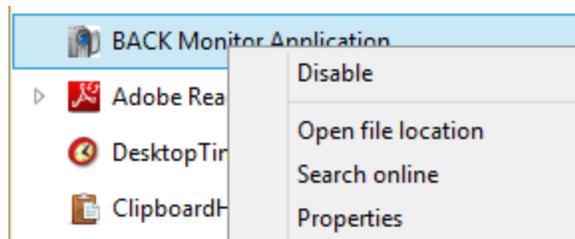
### STARTUP

This welcome addition to Task Manager takes some of the guesswork out of what's automatically running when the computer starts.



Most computers have many auto-start programs and having several with High 'Startup impact' isn't necessarily a bad thing. All four of the 'High impact' programs above are good and useful programs.

One common Startup problem is figuring out what a particular startup program is. The program names aren't always very helpful. If you're not sure what a program is, right-click to see some options:



## Windows 10 for Microsoft Office users

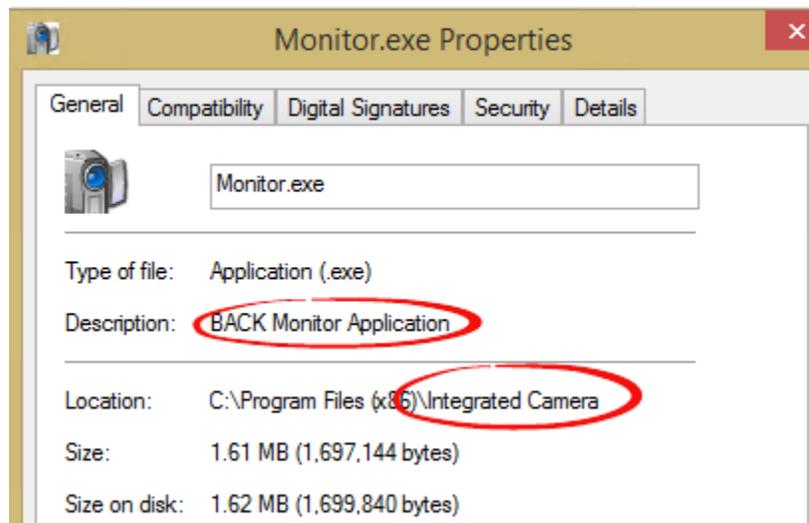
### Task Manager - Startup

**Disable** – will stop the program starting when the computer next starts.

**Open file location** – will open Explorer in the folder that the program resides. Sometimes the folder name will tell you what program or service the startup app is related to.

**Search online** – opens a browser window and searches for the file and program name in your default search engine.

**Properties** – opens the Properties dialog for the program file. In the above example, the General tab tells us that the mysterious 'BACK Monitor Application' is part of the webcam for the laptop.



## ENDNOTES

### EBOOK POWER

Like [\*Office 2016: the real startup guide\*](#), [\*Office 2013: the real startup guide\*](#), [\*Privacy and Security in Microsoft Office\*](#), [\*Organizing Outlook Email\*](#) and [\*Eye-catching Signs with Word\*](#) this ebook takes advantage of the flexibility in e-books.

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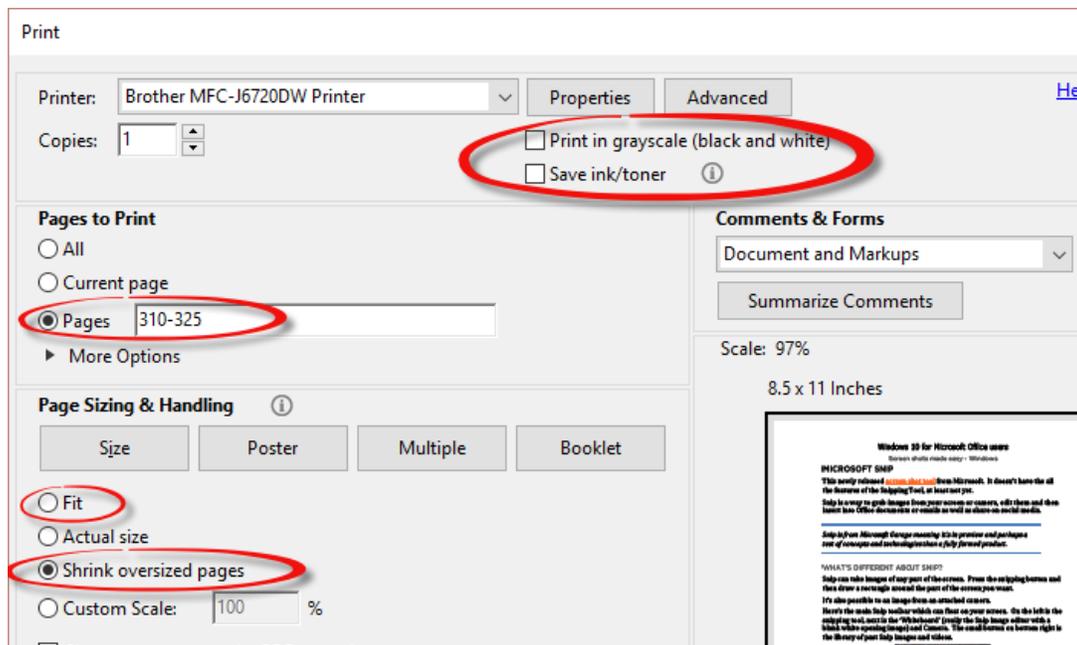
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Endnotes - Ebook power

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- Each page is numbered in the bottom right corner.

Adobe Acrobat has some great features like search and bookmarks that make navigating the book much easier than a paper version. We love a printed

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Endnotes - Ebook power

book as much as anyone, but for reference and how to material like this, the ebook option is worth trying.

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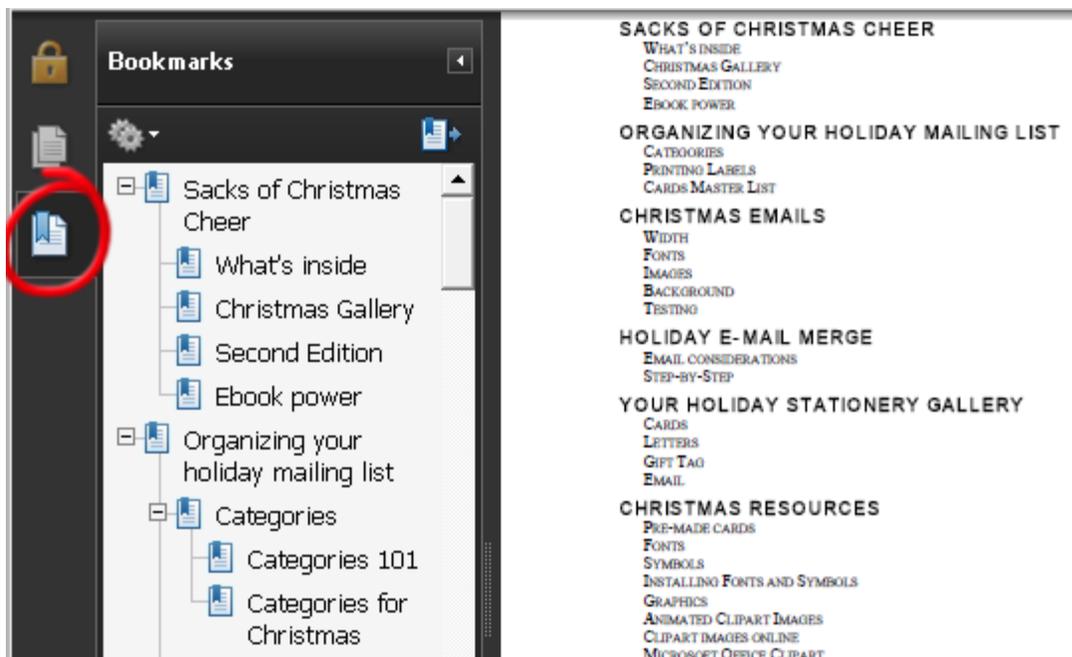
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The Table of Contents and Bookmarks view have the same clickable links

## Windows 10 for Microsoft Office users

Endnotes - Ebook power

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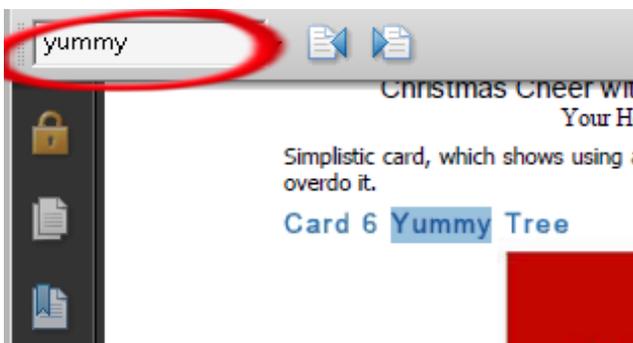
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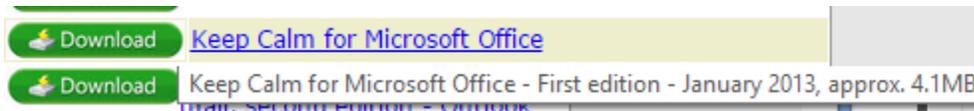
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*We notify customers of updates/upgrades via occasional emails to past customers and, of course in the Office Watch newsletters.*

---

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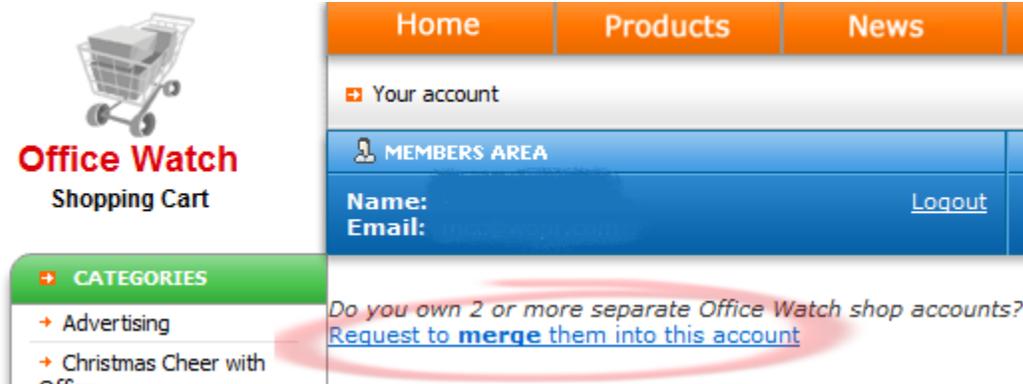
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Endnotes - Your Office Watch e-books

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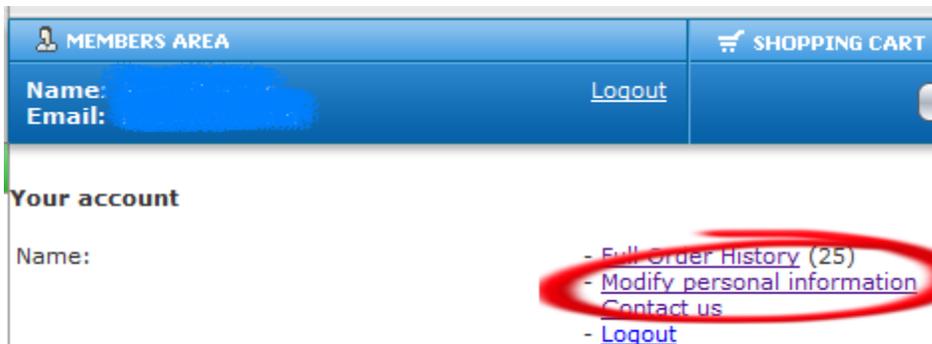


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Endnotes - Feedback

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If there is an account at the store using that email address, an email will be sent to that address immediately with a password reminder.

Please check the spam filters on your computer and perhaps also your ISP or company since lost password messages are often mistaken as spam and not delivered.

### FEEDBACK

We always welcome feedback from readers – it gives us ideas and perspectives to help us make future articles and editions of this book even better.

Please email [EbookFeedback@office-watch.com](mailto:EbookFeedback@office-watch.com) we regret that we can't reply to individual messages – that pesky limit of 24 hours in each day. Rest assured we read all your comments and they do contribute to any future editions.

## HOW WE MADE THIS E-BOOK

This book was written with Microsoft Word 2016 releases

## REVISION HISTORY

### **August 2016**

2<sup>nd</sup> edition. 'Anniversary' update changes plus many new chapters and sections:

- Update options plus recommended pre and post update tasks.
- Microsoft Account security (two factor authentication)
- Fast Access to programs
- Multiple Users
- Virtual Hard Drives
- Remote Desktop
- Virtual Private Networking
- Wifi – a dedicated chapter on Wifi basics and tricks.
- Mobile Hotspot
- Defender
- Repair and Recovery

### **March 2016**

- Virtual Desktops chapter added
- Office Mobile apps chapter added
- Miracast chapter renamed to Wireless Extra Screen. Added tip about updating firmware on Microsoft adapter.

### **November 2015**

- First edition released in time for the Nov. 2015 update to Windows 10.

## CREDITS

Peter Deegan: Author

Phil Young: proofreading and nit-picking

Some parts of this book have appeared in Office Watch newsletters in a slightly different form.

As always, Office-Watch.com ebooks would not be possible without the help of people like Claude Almer, Katharine Vernon, Maryjane Almer, Peter

## Windows 10 for Microsoft Office users

### Endnotes - Copyright Notice

McDonell, Peter Verstage and the Gray family plus all the Office Watch readers who contribute their thoughts and ideas on a daily basis.

All prices are in US dollars unless stated otherwise. Prices were correct at the time of writing but can and do vary over time. Microsoft, Windows, Microsoft Office, Access, Word, Excel, PowerPoint, Outlook, OneNote and doubtless many other terms are trademarks of Microsoft Corporation.

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### OFFICE 2016: THE REAL STARTUP GUIDE

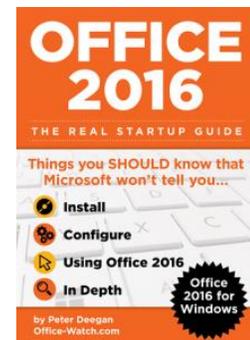
[Office 2016: the real startup guide](#) is the latest in our popular series of comprehensive guides to buying, preparing, installing and configuring Office.

We'll help you properly prepare for installing Office 2016 the best way and for the least cost.

After all it's probably the most used piece of software on your computer, aside from Windows itself - so it's worth getting right.

We'll give you information that Microsoft doesn't provide 'up front' so that you can make a properly informed installation and configuration

Around 260 pages, full color, fully updated, with discounts for Office-Watch.com subscribers. [Buy now](#).



### ORGANIZING OUTLOOK EMAIL

*"A practical guide to taming the messages that arrive in your Outlook 2016/2013/2010 Inbox with step-by-step instructions and tips from people who've used Outlook since 1996."*

## Windows 10 for Microsoft Office users

Office Watch ebooks - Privacy & Security in Microsoft Office

There are all sorts of features in Outlook to help you arrange your email, some obvious, others not so obvious.

We'll take you through all the features available from simple moving of messages to adding Categories, Flags, Reminders and much more with examples and plenty of color images to illustrate.

**Attachments** - how to preview, open, manage and delete attachments.

**Viewing** and **sorting** messages in various views.

**Searching** is an important part of Outlook so we look at it in considerable detail. There's simple searches through to complex finds as well as the invaluable **Search Folders**.

There's many **anti-spam** features in **Outlook**. **Organizing Outlook Email** looks at all the options with advice on which to use and, crucially, which to avoid. The book explains how modern spam filters work with **Outlook** being just one part of the process.

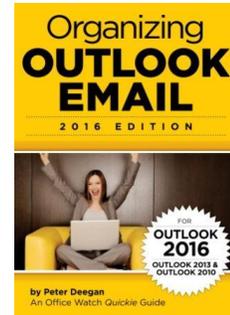
We'll show you how to get Outlook to do some of the arranging and management of messages for you.

**Quick Steps** let you create your own buttons to reduce multi-step tasks to a single click

**Outlook Rules** are very powerful and you'll be able to harness that power with our step-by-step examples.

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**Available now** - immediate delivery.



## PRIVACY & SECURITY IN MICROSOFT OFFICE

Protecting your information from prying eyes, theft and deliberate attack.

## Windows 10 for Microsoft Office users

Office Watch ebooks - Eye-Catching Signs with Word

The security and encryption options available within Microsoft Office and Windows. We show you how to use what is already in Windows and Office for reasonable security at no extra cost.

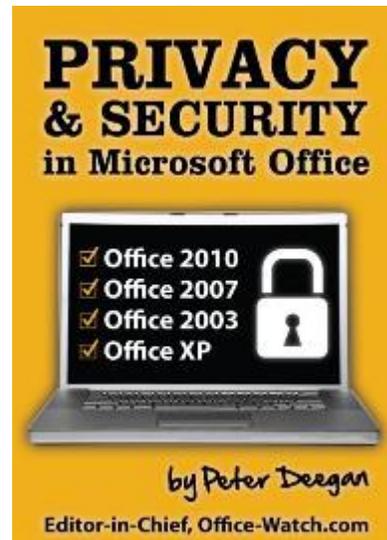
There is practical, step-by-step, information that you can use right away. We'll tell you not only how to secure your data but also how it can be revealed with or without your knowledge. Knowing how information can be unlocked is important in case something goes wrong (eg a password is forgotten) and also so you can judge how secure a feature or option really is.

Sending digitally signed and encrypted messages can involve helping the receiver understand what's going on. This ebook has some examples of how signed messages appear (or not) in various email clients.

There's often a lot of focus on communication security like secure web sites but less on vulnerabilities on an individual computer. We have a look at how to protect your computer from prying eyes, the accidental opportunist and the deliberate hacker.

We've covered Office 2007, Office 2003, Office XP and Office 2010 in one ebook – making it great value with a long 'shelf life'.

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**Step-by-step** guide to making an effective sign from blank page to finished product.

**Tips** for advanced users. Easy access to common symbols, choosing page orientation, selecting a page border.

A **gallery of examples** ready for you to use or edit to your needs.

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A **gallery of examples** ready for you to use or edit to your needs.



### Certificate Gallery

Our exclusive Certificate Gallery includes professionally designed certificates as Word documents on topics like:

Achievement "... has broken sales records"

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Participation "... was at the course"

The gallery examples at right are from the Premium Edition.

### Premium Edition

You want more? Our Premium Edition has even more example certificates and advice:

Step-by-step instructions on printing **many certificates from a list** of recipients (in Excel, Access or other source). How to convert raw data (like a grade) into something that looks good. printing out only some certificates (top students) and sorting.



**Extra examples** -- more than **16 extra** professionally designed certificates. Word documents ready for you to use.

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Office Watch ebooks - Christmas Cheer with Word

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- **Step-by-step** guide organizing your Outlook Contacts list to send Christmas cards or emails.
- **Holiday mail merge** - step-by-step to create letters or emails for the holiday season.
- **Greeting Cards** - make you own personal Christmas cards
- **Letters** - make your annual 'family' letter something special with pre-made designs and tips for including pictures.
- **Gift Tags** - make your own gift cards.
- A **gallery of examples** of exclusively designed cards, letters and gift tags ready for you to use or edit to your needs. **Sixty documents** are included with previews, explanation and suggested uses.
- **Fonts** - our choice of free Christmas fonts with suggested uses
- **Graphics and Pictures** - links to sites with Christmas imagery plus instructions on how to use them in your documents. Recommended Page Borders available in Word.
- **Bonus graphics** -- over 35 original seasonal graphics ready to use in your own documents.
- **'Christmas Sack'** – a collection of popular lyrics and verse for easy reference and copying into your own documents
- Links to sites full of Christmas related images and resources.



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# APPENDIX

*This is a direct copy of the Windows 10 [retail](#) license agreement (as at Nov 2015) that you can search.*

*As noted below, this isn't the entirety of what you 'agree' to when using a Microsoft product or service. Some of the other relevant legalese are:*

- Windows 10 Privacy Statement <http://aka.ms/privacy>
- Microsoft Services Agreement <http://aka.ms/msa>
- Adobe Flash Player License Terms <http://aka.ms/adobeflash>

## WINDOWS 10 LICENSE AGREEMENT

### MICROSOFT SOFTWARE LICENSE TERMS

#### WINDOWS OPERATING SYSTEM

**Last updated July 2015**

**IF YOU LIVE IN (OR IF YOUR PRINCIPAL PLACE OF BUSINESS IS IN) THE UNITED STATES, PLEASE READ THE BINDING ARBITRATION CLAUSE AND CLASS ACTION WAIVER IN SECTION 10. IT AFFECTS HOW DISPUTES ARE RESOLVED.**

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This agreement describes your rights and the conditions upon which you may use the Windows software. You should review the entire agreement, including any supplemental license terms that accompany the software and any linked terms, because all of the terms are important and together create this agreement that applies to you. You can review linked terms by pasting the (aka.ms/) link into a browser window.

**By accepting this agreement or using the software, you agree to all of these terms, and consent to the transmission of certain information**

# Organizing Outlook Email

## Appendix - Windows 10 License Agreement

**during activation and during your use of the software as per the privacy statement described in Section 3. If you do not accept and comply with these terms, you may not use the software or its features.** You may contact the device manufacturer or installer, or your retailer if you purchased the software directly, to determine its return policy and return the software or device for a refund or credit under that policy. You must comply with that policy, which might require you to return the software with the entire device on which the software is installed for a refund or credit, if any.

### 1. Overview.

**a. Applicability.** This agreement applies to the Windows software that is preinstalled on your device, or acquired from a retailer and installed by you, the media on which you received the software (if any), any fonts, icons, images or sound files included with the software, and also any Microsoft updates, upgrades, supplements or services for the software, unless other terms come with them. It also applies to Windows apps developed by Microsoft that provide functionality such as contacts, music, photos and news that are included with and are a part of Windows. If this agreement contains terms regarding a feature or service not available on your device, then those terms do not apply.

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# Organizing Outlook Email

## Appendix - Windows 10 License Agreement

(v) To the extent included with Windows, Word, Excel, PowerPoint and OneNote are licensed for your personal, non-commercial use, unless you have commercial use rights under a separate agreement.

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**a. License.** The software is licensed, not sold. Under this agreement, we grant you the right to install and run one instance of the software on your device (the licensed device), for use by one person at a time, so long as you comply with all the terms of this agreement. Updating or upgrading from non-genuine software with software from Microsoft or authorized sources does not make your original version or the updated/upgraded version genuine, and in that situation, you do not have a license to use the software.

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**d. Multi use scenarios.**

## Organizing Outlook Email

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- 3. **Privacy; Consent to Use of Data.** Your privacy is important to us. Some of the software features send or receive information when using those features. Many of these features can be switched off in the user interface, or you can choose not to use them. By accepting this agreement and using the

## Organizing Outlook Email

### Appendix - Windows 10 License Agreement

software you agree that Microsoft may collect, use, and disclose the information as described in the Microsoft Privacy Statement ([aka.ms/privacy](https://aka.ms/privacy)), and as may be described in the user interface associated with the software features.

**4. Transfer.** The provisions of this section do not apply if you acquired the software as a consumer in Germany or in any of the countries listed on this site ([aka.ms/transfer](https://aka.ms/transfer)), in which case any transfer of the software to a third party, and the right to use it, must comply with applicable law.

**a. Software preinstalled on device.** If you acquired the software preinstalled on a device (and also if you upgraded from software preinstalled on a device), you may transfer the license to use the software directly to another user, only with the licensed device. The transfer must include the software and, if provided with the device, an authentic Windows label including the product key. Before any permitted transfer, the other party must agree that this agreement applies to the transfer and use of the software.

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**6. Updates.** The software periodically checks for system and app updates, and downloads and installs them for you. You may obtain updates only from Microsoft or authorized sources, and Microsoft may need to update your system to provide you with those updates. By accepting this agreement, you agree to receive these types of automatic updates without any additional notice.

**7. Downgrade Rights.** If you acquired a device from a manufacturer or installer with a Professional version of Windows preinstalled on it, you may use either a Windows 8.1 Pro or Windows 7 Professional version, but only for so long as Microsoft provides support for that earlier version as set forth in ([aka.ms/windowslifecycle](http://aka.ms/windowslifecycle)). This agreement applies to your use of the earlier versions. If the earlier version includes different components, any terms for those components in the agreement that comes with the earlier version apply to your use of such components. Neither the manufacturer or installer, nor Microsoft, is obligated to supply earlier versions to you. You must obtain the earlier version separately, for which you may be charged a fee. At any time, you may replace an earlier version with the version you originally acquired.

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**9. Support and Refund Procedures.**

**a. For software preinstalled on a device.** For the software generally, contact the device manufacturer or installer for support options. Refer to the support number provided with the software. For updates and supplements obtained directly from Microsoft, Microsoft may provide limited support services for properly licensed software as described at ([aka.ms/mssupport](http://aka.ms/mssupport)). If you are seeking a refund, contact the manufacturer or installer to determine its refund policies. You must comply with those policies, which might require you to return the software with the entire device on which the software is installed for a refund.

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**b. For software acquired from a retailer.** Microsoft provides limited support services for properly licensed software as described at ([aka.ms/mssupport](https://aka.ms/mssupport)). If you purchased the software from a retailer and are seeking a refund, and you cannot obtain one where you acquired the software, contact Microsoft for information about Microsoft's refund policies. See ([aka.ms/msoffices](https://aka.ms/msoffices)), or in North America, call (800) MICROSOFT or see ([aka.ms/nareturns](https://aka.ms/nareturns)).

#### **10. Binding Arbitration and Class Action Waiver if You Live in (or if a Business Your Principal Place of Business is in) the United States.**

We hope we never have a dispute, but if we do, you and we agree to try for 60 days to resolve it informally. If we can't, you and we agree to **binding individual arbitration before the American Arbitration Association ("AAA") under the Federal Arbitration Act ("FAA"), and not to sue in court in front of a judge or jury.** Instead, a neutral arbitrator will decide and the arbitrator's decision will be final except for a limited right of appeal under the FAA. **Class action lawsuits, class-wide arbitrations, private attorney-general actions, and any other proceeding where someone acts in a representative capacity aren't allowed. Nor is combining individual proceedings without the consent of all parties.** "We," "our," and "us" includes Microsoft, the device manufacturer, and software installer.

**a. Disputes covered—everything except IP.** The term "dispute" is as broad as it can be. It includes any claim or controversy between you and the manufacturer or installer, or you and Microsoft, concerning the software, its price, or this agreement, under any legal theory including contract, warranty, tort, statute, or regulation, **except disputes relating to the enforcement or validity of your, your licensors', our, or our licensors' intellectual property rights.**

**b. Mail a Notice of Dispute first.** If you have a dispute and our customer service representatives can't resolve it, send a Notice of Dispute by U.S. Mail to the manufacturer or installer, ATTN: LEGAL DEPARTMENT. If your dispute is with Microsoft, mail it to Microsoft Corporation, ATTN: LCA ARBITRATION, One Microsoft Way, Redmond, WA 98052-6399. Tell us your name, address, how to contact you, what the problem is, and what you want. A form is available at ([aka.ms/disputeform](https://aka.ms/disputeform)). We'll do the same if we have a dispute with you. After 60 days, you or we may start an arbitration if the dispute is unresolved.

**c. Small claims court option.** Instead of mailing a Notice of Dispute, and if you meet the court's requirements, you may sue us in small claims court in your county of residence (or if a business your principal place of business) or our principal place of business—King County, Washington USA if your dispute

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is with Microsoft. We hope you'll mail a Notice of Dispute and give us 60 days to try to work it out, but you don't have to before going to small claims court.

**d. Arbitration procedure.** The AAA will conduct any arbitration under its Commercial Arbitration Rules (or if you are an individual and use the software for personal or household use, or if the value of the dispute is \$75,000 USD or less whether or not you are an individual or how you use the software, its Consumer Arbitration Rules). For more information, see ([aka.ms/adr](http://aka.ms/adr)) or call 1-800-778-7879. To start an arbitration, submit the form available at ([aka.ms/arbitration](http://aka.ms/arbitration)) to the AAA; mail a copy to the manufacturer or installer (or to Microsoft if your dispute is with Microsoft). In a dispute involving \$25,000 USD or less, any hearing will be telephonic unless the arbitrator finds good cause to hold an in-person hearing instead. Any in-person hearing will take place in your county of residence (or if a business your principal place of business) or our principal place of business—King County, Washington if your dispute is with Microsoft. You choose. The arbitrator may award the same damages to you individually as a court could. The arbitrator may award declaratory or injunctive relief only to you individually to satisfy your individual claim.

**e. Arbitration fees and payments.**

(i) **Disputes involving \$75,000 USD or less.** The manufacturer or installer (or Microsoft if your dispute is with Microsoft) will promptly reimburse your filing fees and pay the AAA's and arbitrator's fees and expenses. If you reject our last written settlement offer made before the arbitrator was appointed, your dispute goes all the way to an arbitrator's decision (called an "award"), and the arbitrator awards you more than this last written offer, the manufacturer or installer (or Microsoft if your dispute is with Microsoft) will: (1) pay the greater of the award or \$1,000 USD; (2) pay your reasonable attorney's fees, if any; and (3) reimburse any expenses (including expert witness fees and costs) that your attorney reasonably accrues for investigating, preparing, and pursuing your claim in arbitration. The arbitrator will determine the amounts unless you and we agree on them.

(ii) **Disputes involving more than \$75,000 USD.** The AAA rules will govern payment of filing fees and the AAA's and arbitrator's fees and expenses.

(iii) **Disputes involving any amount.** If you start an arbitration we won't seek our AAA or arbitrator's fees and expenses, or your filing fees we reimbursed, unless the arbitrator finds the arbitration frivolous or brought for an improper purpose. If we start an arbitration we will pay all filing, AAA, and arbitrator's fees and expenses. We won't seek our attorney's fees or

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### Appendix - Windows 10 License Agreement

expenses from you in any arbitration. Fees and expenses are not counted in determining how much a dispute involves.

**f. Must file within one year.** You and we must file in small claims court or arbitration any claim or dispute (except intellectual property disputes — see Section 10.a.) within one year from when it first could be filed. Otherwise, it's permanently barred.

**g. Severability.** If the class action waiver is found to be illegal or unenforceable as to all or some parts of a dispute, those parts won't be arbitrated but will proceed in court, with the rest proceeding in arbitration. If any other provision of Section 10 is found to be illegal or unenforceable, that provision will be severed but the rest of Section 10 still applies.

**h. Conflict with AAA rules.** This agreement governs if it conflicts with the AAA's Commercial Arbitration Rules or Consumer Arbitration Rules.

**i. Microsoft as party or third-party beneficiary.** If Microsoft is the device manufacturer or if you acquired the software from a retailer, Microsoft is a party to this agreement. Otherwise, Microsoft is not a party but is a third-party beneficiary of your agreement with the manufacturer or installer to resolve disputes through informal negotiation and arbitration.

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**12. Consumer Rights, Regional Variations.** This agreement describes certain legal rights. You may have other rights, including consumer rights, under the laws of your state or country. You may also have rights with respect to the party from which you acquired the software. This agreement does not change those other rights if the laws of your state or country do not permit it to do so. For example, if you acquired the software in one of the below regions, or mandatory country law applies, then the following provisions apply to you:

**a. Australia.** References to "Limited Warranty" are references to the express warranty provided by Microsoft or the manufacturer or installer. This warranty is given in addition to other rights and remedies you may have under law, including your rights and remedies in accordance with the statutory guarantees under the Australian Consumer Law.

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### Appendix - Windows 10 License Agreement

In this section, “goods” refers to the software for which Microsoft or the manufacturer or installer provides the express warranty. Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

**b. Canada.** You may stop receiving updates on your device by turning off Internet access. If and when you re-connect to the Internet, the software will resume checking for and installing updates.

**c. European Union.** The academic use restriction in Section 13.d(i) below does not apply in the jurisdictions listed on this site: (aka.ms/academicuse).

**d. Germany and Austria.**

(i) **Warranty.** The properly licensed software will perform substantially as described in any Microsoft materials that accompany the software. However, the manufacturer or installer, and Microsoft, give no contractual guarantee in relation to the licensed software.

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Subject to the preceding sentence, the manufacturer or installer, or Microsoft will only be liable for slight negligence if the manufacturer or installer or Microsoft is in breach of such material contractual obligations, the fulfillment of which facilitate the due performance of this agreement, the breach of which would endanger the purpose of this agreement and the compliance with which a party may constantly trust in (so-called "cardinal obligations"). In other cases of slight negligence, the manufacturer or installer or Microsoft will not be liable for slight negligence.

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### 13. Additional Notices.

**a. Networks, data and Internet usage.** Some features of the software and services accessed through the software may require your device to access the Internet. Your access and usage (including charges) may be subject to the terms of your cellular or internet provider agreement. Certain features of the software may help you access the Internet more efficiently, but the software’s usage calculations may be different from your service provider’s

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measurements. You are always responsible for (i) understanding and complying with the terms of your own plans and agreements, and (ii) any issues arising from using or accessing networks, including public/open networks. You may use the software to connect to networks, and to share access information about those networks, only if you have permission to do so.

**b. H.264/AVC and MPEG-4 visual standards and VC-1 video**

**standards.** The software may include H.264/MPEG-4 AVC and/or VC-1 decoding technology. MPEG LA, L.L.C. requires this notice:

THIS PRODUCT IS LICENSED UNDER THE AVC, THE VC-1, AND THE MPEG-4 PART 2 VISUAL PATENT PORTFOLIO LICENSES FOR THE PERSONAL AND NON-COMMERCIAL USE OF A CONSUMER TO (i) ENCODE VIDEO IN COMPLIANCE WITH THE ABOVE STANDARDS (“VIDEO STANDARDS”) AND/OR (ii) DECODE AVC, VC-1, AND MPEG-4 PART 2 VIDEO THAT WAS ENCODED BY A CONSUMER ENGAGED IN A PERSONAL AND NON-COMMERCIAL ACTIVITY AND/OR WAS OBTAINED FROM A VIDEO PROVIDER LICENSED TO PROVIDE SUCH VIDEO. NO LICENSE IS GRANTED OR SHALL BE IMPLIED FOR ANY OTHER USE. ADDITIONAL INFORMATION MAY BE OBTAINED FROM MPEG LA, L.L.C. SEE (AKA.MS/MPEGLA).

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- [Windows 10 Privacy Statement \(aka.ms/privacy\)](https://aka.ms/privacy)
- [Microsoft Services Agreement \(aka.ms/msa\)](https://aka.ms/msa)
- [Adobe Flash Player License Terms \(aka.ms/adobeflash\)](https://aka.ms/adobeflash)

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#### **LIMITED WARRANTY**

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