

NEW EASY TO FOLLOW USER GUIDES

CLOUD

FOR BEGINNERS

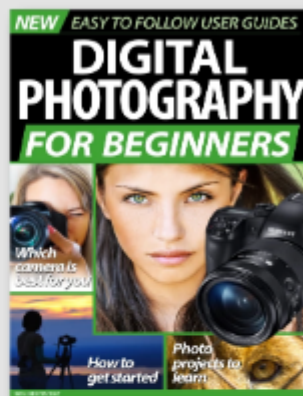
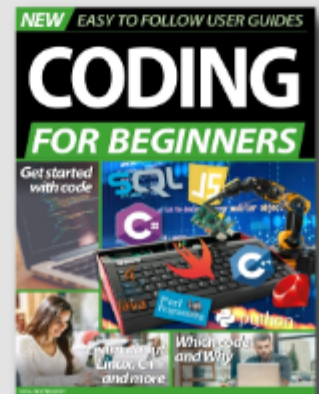


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CLOUD

FOR BEGINNERS

Starting something new can be daunting. Learning a skill or mastering a new piece of hardware is tough. Even tougher if you have no-one at hand to help. Conversely as the complexity of our consumer technology increases, the size of the requisite instruction manual decreases or in some cases it simply disappears. At numerous times in our lives we have all been "beginners", there is no shame in that fact and rightly so. How many times have you asked aloud, "What does this button do?" "Why doesn't that work?" "What do you mean it doesn't do that?" "HELP!". At the start of any new journey or adventure we are all beginners but fortunately for you we are here to stand beside you at every stage.

Over this extensive series of titles we will be looking in great depth at the latest consumer electronics, software, hobbies and trends out of the box! We will guide you step-by-step through using all aspects of the technology that you may have been previously apprehensive at attempting. Let our expert guide help you build your technology understanding and skills, taking you from a novice to a confident and experienced user.

Over the page our journey begins. We would wish you luck but we're sure with our support you won't need it.



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"...we guide you through this jargon-filled minefield and point out the benefits of what the cloud can do for you..."

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Cloud For Beginners

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What is Cloud Computing?

The way we use technology is ever changing. It's an evolution of how and where we access our private, personal and work related data. From the earliest days of the home computer, accessing data and entertainment from cassettes, to the rise of the Internet and terabytes of storage, technology has revolutionised the way we interact with the world around us.

One particular form of this technological evolution is the cloud. The cloud is a term used often without knowing exactly what 'the cloud' is, what it does, how it works and what it can offer both the home and business user. The cloud offers many great benefits for those who use it. Storage, email, development, collaboration, sharing, streaming, the list goes on.

Throughout the following pages we look at what makes up the cloud, how it works and what's on offer for both the consumer and business user. We look at better ways for you to implement the cloud into your business or lifestyle, and even how you can go about creating your own personal cloud.

The future of work and entertainment lies in the cloud. So let's see what silver linings cast a gleam on this modern way of life.



The Definition of the Cloud

What is the cloud? Where is it? What can you do with it? How does it work? These and more are questions that home and business users ask on a regular basis. The term 'cloud computing' has been bandied about for so long, it's become just another technology phrase; what does it mean though?



SILVER LININGS

The meaning of the cloud has changed somewhat in recent years, more as it became the new buzz-word that pundits and marketing executives liked to throw about. In its most basic, layman's terms, cloud computing is simply accessing some form of digital resource or service, that isn't installed locally on your computer.

For the home, consumer user, that could mean accessing Gmail, Google Drive, Dropbox or, in some circumstances, even viewing content through the likes of Netflix or listening to music via Spotify. It's a loose interpretation of what a cloud is but essentially it's the same.

From the point of view of the Small Medium Enterprise (SME), it's a way of consolidating digital resources into an on demand, online and accessible solution. This way, mobile workers can access the company's content, as can any clients and there isn't necessarily a need to employ technical expertise to constantly maintain the company servers and hardware. The ability to offer those shared resources without the technical or financial impact of setting it up or keeping it maintained is another benefit of using a cloud solution. Therefore it makes a more appealing proposition to both consumer and SME users.

In 2011 the National Institute of Standards and Technology (NIST) brought together a final definition of the term cloud

computing. "Cloud computing is a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g. networks, servers, storage, applications and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction".

The NIST then went on to list five essential characteristics of cloud computing: on-demand self-service, broad network access, resource pooling, rapid elasticity or expansion and measured service. Furthermore there are three listed Service Models: software, platform and infrastructure, and four Deployment Models: public, community, hybrid and private.

The cloud, therefore, has quite a wide definition, encompassing almost everything we do and interact with on a daily basis. Throughout this book, we'll take a deeper look into the cloud and see what it's made of, how it works for you as an individual or business user and how we can build our own cloud service.



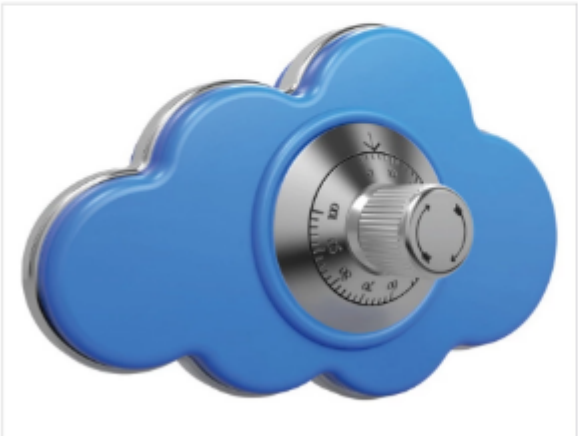
CLOUD BENEFITS

We'll look more into the cloud later but for now here are some of the benefits a company or an individual can expect from cloud computing.

PAY AS YOU GO



SECURITY AND DISASTER ASSISTANCE



OFF-SITE DATA STORAGE



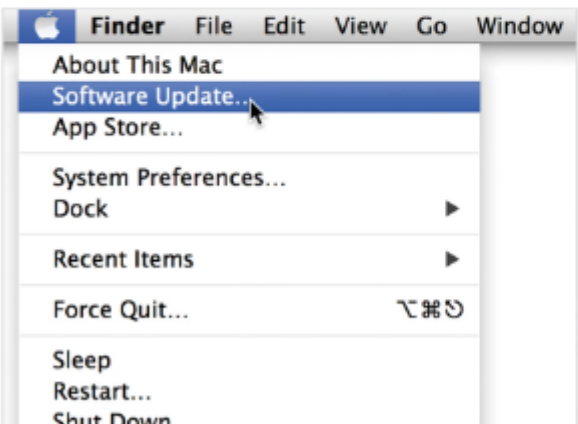
LOWER COST OF OWNERSHIP



ACCESS FROM ANYWHERE



AUTOMATIC AND EASILY UPGRADED





History of the Cloud

So now you have the generally accepted definition of the cloud, it's fair to look at how the term came into being. Surprisingly, although not actually called a 'cloud' until much later in its life, the concept behind the cloud can be traced back to the very beginnings of the modern computer age.

FROM CUMULUS TO CIRRUS

The considered and accepted evolution of the cloud, from concept to daily use, starts as far back as the 1950s.

1955

According to popular myth, John McCarthy, the computer scientist who coined the term 'artificial intelligence', dreamed up the concept of computing time-sharing. In those days computing cost millions of dollars, so McCarthy came up with the idea of renting time-shared computing resources to companies who couldn't afford the technology. This is regarded as the beginning of the cloud concept.



1972

IBM developed its mainframe VM/370 or Virtual Machine Facility/370, system in 1972. Using the Hercules Emulator program, scientists were able to access the VM/370 in multiple virtual machine states all from a single system.



1969

J.C.R Licklider developed ARPANET (Advanced Research Projects Agency Network), a network that eventually became the basis of the Internet. Using McCarthy's initial concept, Licklider's vision was "for everyone on the globe to be interconnected and accessing programs and data at any site, from anywhere".



1980-1989

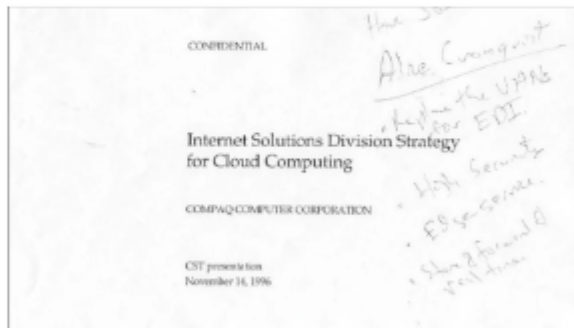
Throughout the 1980s the home computer boom and improved communications technology saw consumers and business users accessing remote resources via 300 bits-per-second modems. Ethernet was standardised and through MS-DOS, Novell and other companies, resources housed on servers elsewhere in the world became accessible to all through Bulletin Boards and the like.





1990 - 1998

The Internet grew exponentially throughout the 90s. As a result, the first instance of the term 'cloud computing' was used by a group of Compaq Computer engineers. It was in a 1996 presentation entitled 'Internet Solution Division Strategy for Cloud Computing' and was a vision for the company's future business model.



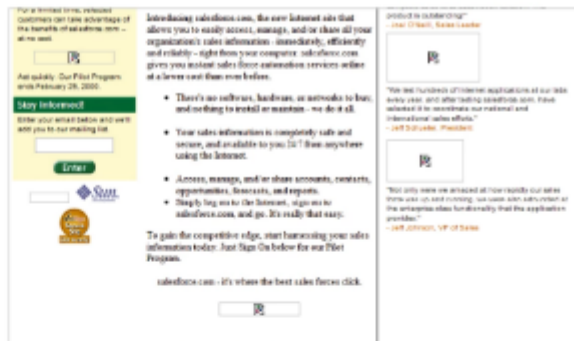
2006

Expanding on the Web Services model, Amazon launched its Elastic Compute Cloud (EC2) in 2006. EC2 was designed to provide scalable resources in the cloud, with users being able to configure the service with minimal management.



1999

In 1999 the cloud computing concept began in earnest, with the launch of Salesforce.com. Salesforce used the now maturing Internet to offer shared sales information for a company, along with collaboration, storage and reporting through a web-based portal. This paved the way for other companies to deliver both apps and improved content over the Internet.



2006 - 2012

Google's growth and domination of the Internet saw the company release its Google Apps cloud-based services in 2006. Later, in 2011, Apple announced its own cloud storage solution, Apple iCloud and in 2012 Google Drive was launched, bringing together all the cloud definitions under a single service.



2002

Another major milestone in the cloud's history was the launch of Amazon Web Services in 2002. This service provided a cloud-based suite of resources that ticked every aspect of the cloud definition. It was easily expanded, offered storage, computation and virtualisation.



2012 - 2017

The use of more powerful mobile devices, better networks and faster access to the Internet has resulted in a huge cloud boom in recent years. It is estimated that at the end of 2016, money spent on cloud services was in the region of \$1.4 trillion and that growth isn't looking to slow down anytime soon.





Types of Cloud Services

The cloud offers different services based on what the user or company demands. It's most basic use is simple storage, as seen in Google Drive, Dropbox and so on but its design also means that the technology can become remarkably complex the more you delve into it.

ON DEMAND AVAILABILITY

Cloud services come in many guises and bewildering acronyms. Here are ten of the more popular cloud services and what they mean exactly.

BAAS

BAAS (Backup As A Service) is a fast growing cloud service thanks to the lower cost of storage. For example, a company can now back up its entire systems onto a cloud provider's BAAS. It's secure and should the office be destroyed in an all-consuming fire, the data is still safe in a remote location.



DAAS

DAAS (Desktop As A Service) enables the worker to use their main desktop from any device anywhere in the world. This is desktop virtualisation, where your Windows, Mac or Linux desktop is accessed via the cloud, along with all your icons, work, shortcuts and so on.



CAAS

CAAS (Communications As A Service) sounds more complex than it actually is. Simply put, CAAS is a cloud-based telecoms, messaging and video conferencing solution that uses a company mobile phone plan, with cloud integration to the company's resources. Skype is another remote video calling service and at a push, so are Facebook and Twitter.



DBAAS

DBAAS (Database As A Service) leaves the administration of a company database to the cloud service provider. Instead, workers can just concentrate on using the database, whilst companies can cut out the DB admin overhead.



**HAAS**

HAAS (Hardware As A Service) although somewhat different from other cloud-based solutions, allows a company to rent all of its hardware from the provider. Computers, printers, phones, tablets and so on are all under lease from the supplier.

**PAAS**

PAAS (Platform As A Service) is the combination of both hardware and software development. This services offers developers a platform to code and test their software on various different hardware and operating system models.

**IDAAS**

IDAAS (Identity As A Service) is a cloud-based identity and user management service, that can help secure access to resources, both virtual and physical, through various layers of security. For example, thumbprint reader software and iris detection access is handled via IDAAS.

**SAAS**

SAAS (Software As A Service) covers the likes of Gmail, YouTube and even Netflix. It gives access to a full service housed in the cloud, where the company needs to simply either populate it or just pay for what they want. Essentially, it's the entire cloud setup under a single title.

**IAAS**

IAAS (Infrastructure As A Service) covers servers and networking in the cloud. A company can have all or a part of its core network based in the cloud, offering different resources to different users.

**STaaS**

STaaS (Storage As A Service) is where you simply buy cloud-based storage. For example, a company could provide STaaS for all its workers, allowing them access to cloud storage, as opposed to the company's in-house storage. Google Drive and Dropbox are such examples of STaaS.





Cloud Problems

While the cloud may sound like the ideal solution to any company or individual's technology needs, it isn't without its concerns. Due to the nature of the cloud, an issue with just a single element could effectively bring a business to a virtual stand-still.

CONCERNS IN THE CLOUD

With the responsibility of entire company fortunes and user's private data, cloud providers do their best to limit problems but they do appear from time to time.

UPGRADES

While an excellent benefit, automatic upgrades in the cloud can have a negative effect too. For example, in 2011

Amazon's EC2 suffered a huge outage as a planned upgrade went horribly wrong. Storage went off-line and in some extreme cases customers lost data.



NOT ALWAYS ONLINE

Working from the cloud is all fine and well but what happens when the connection goes down? A lack of Internet access can leave

entire companies with workers staring at blank screens.



MOUNTING COSTS

Although the initial cost of cloud ownership is much cheaper than a traditional

on-site solution, as the service grows so can the cost to the company. Social gaming company Zynga moved away from using cloud based services when the costs started to rise beyond \$150 million.



CLOUD PROVIDER OUTAGE

In comparison to the previous concern, what

would happen should the cloud provider's access to the outside world fail? Thankfully it doesn't happen too often, due to geo-redundancy but even big names such as Microsoft, Google and Amazon have lost connection to cloud servers in the past.





CONTRACT WOES

Although the situation is getting better, you, as a company or user, are at the mercy of the cloud providers' terms and conditions. If you need cloud access 99% of the time but the provider only offers 80%, then you're stuck with the contract or you'll need to look elsewhere.



LOCKED INTO THE CLOUD

The cloud model presents a valid case for many businesses but what happens when they want to scale back to an in-house solution? The cost of migrating data, buying equipment, hiring staff and so on can quickly mount.



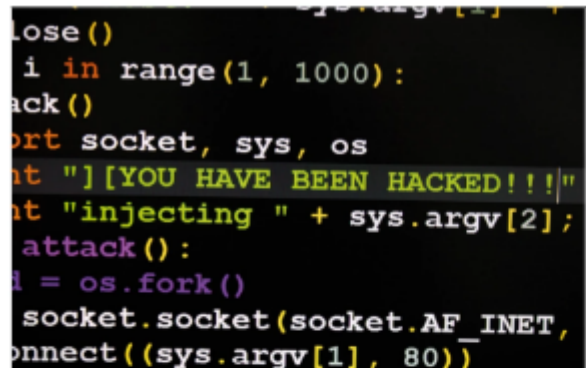
GOVERNMENT ACCESS

New snooping and anti-privacy laws in many countries mean that at the government level your cloud data can be accessed. Naturally, the government in question will require a warrant but some cloud providers can't do anything when issued. Microsoft, for example, have moved some services to different jurisdictions to avoid U.S. government intervention.



HACKING

Cloud computing is very secure but sometimes there are examples where data is hacked and presented to the world. The infamous Frappening incident, where numerous celebrities had their private pictures leaked from hacked Apple iCloud accounts is one of the more recent examples.



ONLINE HELPDESK

Cutting down on in-house IT and technical staff may sound like a great cost-cutting exercise, as using a cloud provider means all your technical needs are handled elsewhere. However, it's not always the best solution. Having technical staff on the ground will always beat having to phone in an issue or request.



CHANGE ISN'T ALWAYS GOOD

Alterations to cloud-based applications, front end web pages, portals and other elements that workers are constantly using can be damaging. People do tend to fear significant changes in technology; take Windows 7 to Windows 8.1 or different Office versions, for example. Retraining and fire fighting technical issues can become costly in time and expertise.





Anatomy of the Cloud

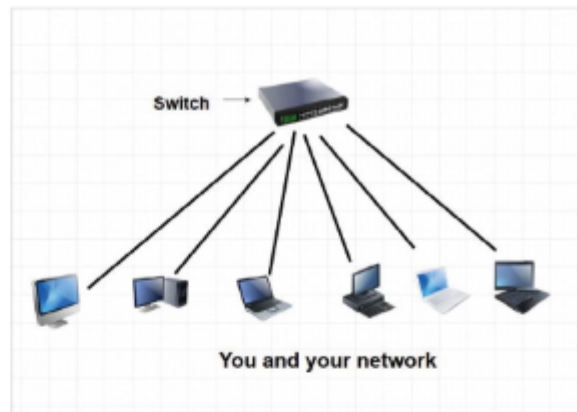
Talking about connected technologies, all accessing a central cloud infrastructure across several geo-redundant datacentres can be a little difficult to visualise. How is it all connected, where do you and your computer or device fit in to the big picture?

CLOUD STRUCTURES

Let's take a moment to build the anatomy of the cloud, from the ground up. Starting with you, the user, sat in front of your computer or device.

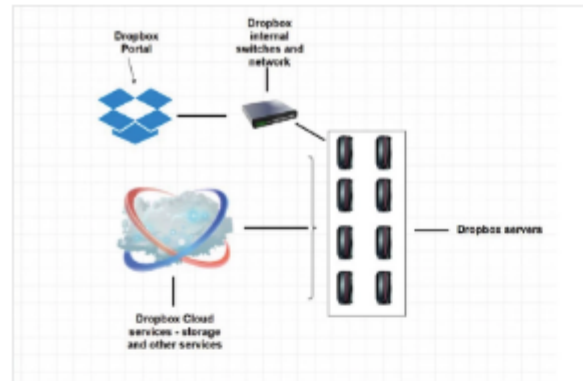
STEP 1

While connecting to a cloud resource may seem seamless, there's actually a lot going on in between you and where the actual item you're viewing is stored. Starting with you, either as a home user or in the workplace, there's the PCs, Macs, tablets and so on, all connected to a home or work network via a switch.



STEP 3

Dropbox is naturally also connected to the Internet, through a similar sort of process; although it's a little more complex for something as big as Dropbox. The Dropbox portal, to put it simply, connects to the Dropbox internal network of servers and through various layers of software all combine to form the cloud resource you're accessing.



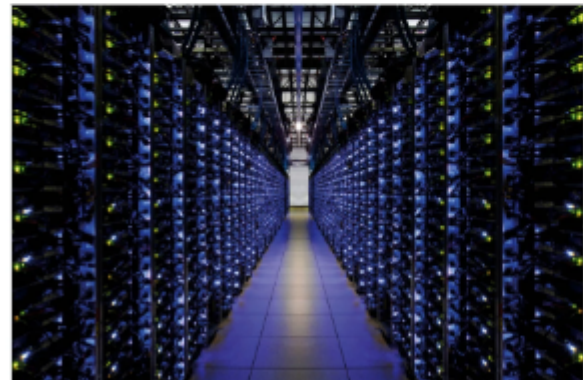
STEP 2

The switch, or switches, are connected to a router; this in turn provides the link to the Internet via an ISP (Internet Service Provider). We'll view the Internet here as a separate connection, where you'll browse for websites and such. Connection to a cloud service is usually through a portal, or website; let's use Dropbox as an example here.



STEP 4

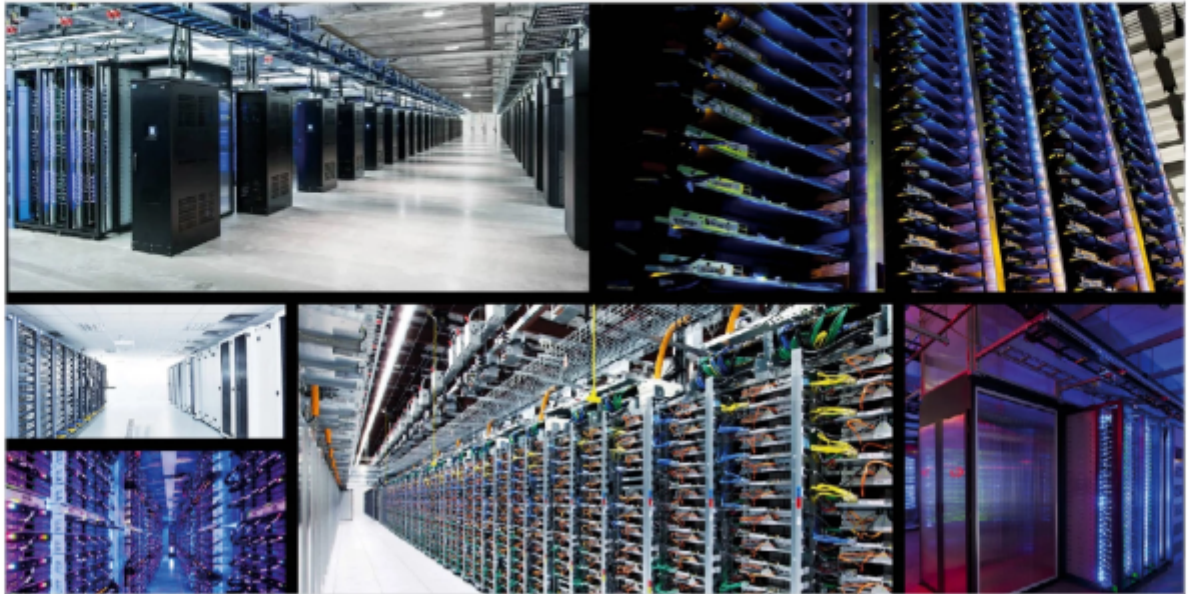
Essentially, each of those Dropbox servers provides storage and computing power. Combined they form a huge cluster of available storage and computing power. The software that the Dropbox servers run, via the portal front end to the user, is what makes up the cloud. These clusters of servers could be located anywhere in the world.





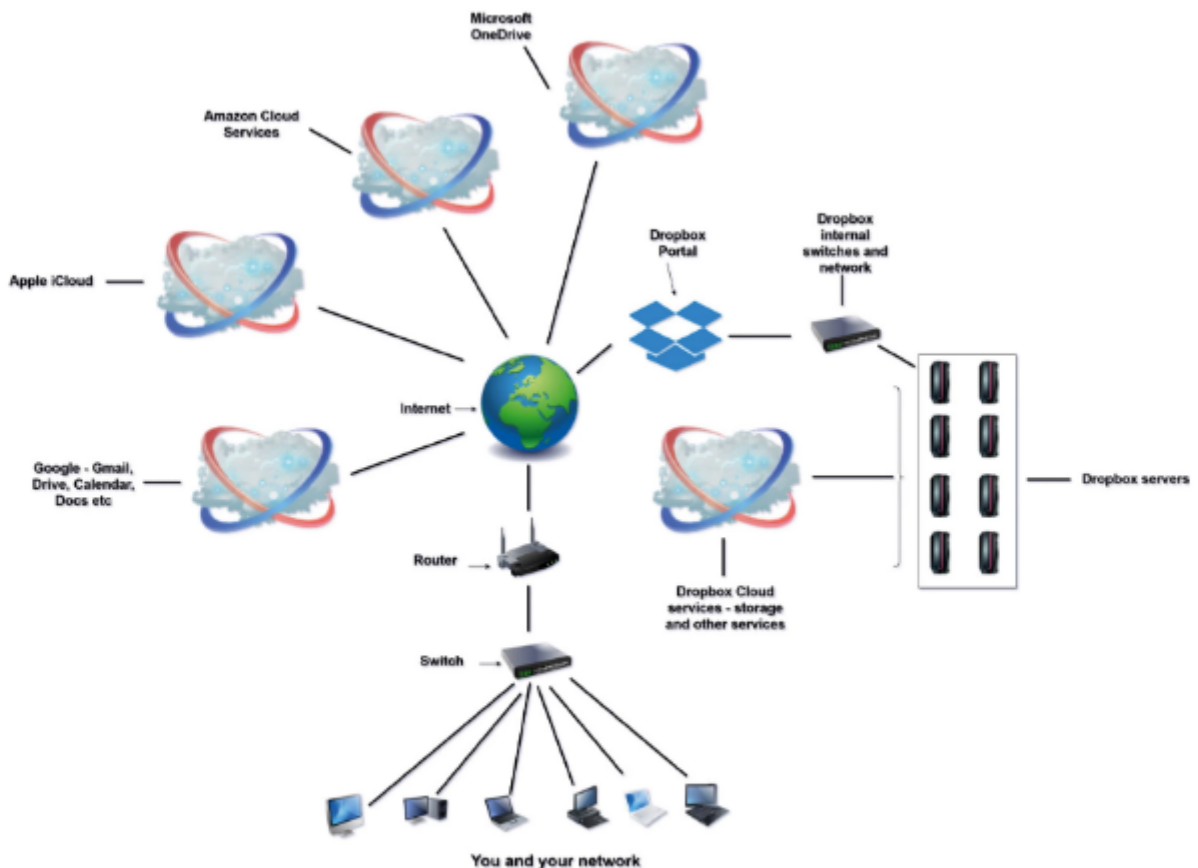
STEP 5

Although the technology used in each of the cloud services you access is a complex system of security, access, scanning, load balancing and performance, the basic principal is the same. Any cloud service is simply a datacentre of hundreds of connected servers providing storage and processing power, designed for easy access to the public and commerce.



STEP 6

Now take the basic anatomy of the entire structure and multiply that by several million. This is, to a certain degree, the entire makeup of the world's cloud services. Each cloud provider offering space on its cluster of servers for storage, virtualisation, telecoms, email and all other cloud service types available.





Why Cloud?

Why should you use a cloud computing solution when having your own in-house IT setup is the more traditional way? What is it that makes using a cloud provider more sense in today's interconnected world?

AHEAD IN THE CLOUD

We've touched on a few areas and benefits of using a cloud provider for your business and home use, so let's break these down a little more.

FLEXIBILITY

Cloud based solutions are incredibly flexible in their design. They can grow as your business needs increase and they can be scaled back should your requirement lessen. It's this level of operational agility, or elasticity, that makes a cloud solution perfect for the business and consumer IT model.



AUTOMATIC UPDATES

Updating a server is a time-consuming and fairly stressful affair. Making sure the relevant security patch is in place and that once applied everything works the same way as it did previously takes considerable planning. Using a cloud on the other hand, takes that stress away from you, as the engineers off-site handle the cloud's servers.



DISASTER RECOVERY

Businesses, of any size, and home users should be concerned with building a robust disaster recovery solution. The loss of personal files or critical business data in the event of a localised catastrophe is a nightmare situation but it can be quick and easy to recover if the data is stored in a remote cloud location.



REDUCED COSTS

Cloud computing is a pay-as-you-go model, in that you simply invest in what you need at that particular point. Using this in conjunction with the elasticity of a cloud means that you pay for more services or storage as you and your business grows.





COLLABORATION

Using the cloud means that you and your co-workers are able to gain access to the company's data as a single unit. This makes collaborating on a project far easier with remote workers or teams on the other side of the planet. Data updates are in real-time, and the workflow is far less confusing.



SECURITY

Although there are incidents of cloud hacking, keeping data in the cloud is regarded as being far more secure than having the data available locally. Lost laptops, USB flash drives, hard drives recovered from old computers can all be a huge security risk, with each containing data, bank details and images.



ACCESS FROM ANYWHERE

As long as a worker or individual has access to the Internet, then they are able to access the cloud solution behind the company. This means you can utilise expertise from around the world, without the expense of relocation. Home users can also upload images and documents from any Internet capable device.



COMPETITIVENESS

Potentially using a cloud model to run your business can greatly improve your competitiveness in the marketplace. You have access to 24/7 servers and cutting edge applications and can keep the costs down by only paying for what you use.



DOCUMENT CONTROL

When you have umpteen users all working off a single document, you eventually come across conflicting copies and formats. By using a cloud model, document control is kept in line by all users working from a single, stored document source. In addition, the digital storage cost of multiple documents emailed to and from users is drastically cut down.



GREEN COMPUTING

The datacentres that house cloud services are vast, energy hungry places. However, since you only use the computing resources you pay for, as does everyone else in the cloud, the overall energy required by the datacentre is as minimal as possible. No wasted power makes for a greener carbon footprint than a traditional server room setup.





Basic Consumer Cloud Services

The cloud focuses a lot on businesses and what a company can get from it to make itself more successful, often with very little regard to what the home user can get. Thankfully, the consumer isn't completely left out in the cold where the cloud is concerned.

HOME CLOUDS

Agile business models and elaborate disaster recovery plans aren't always at the forefront of what the average user wants from a cloud service. So what can the consumer expect?

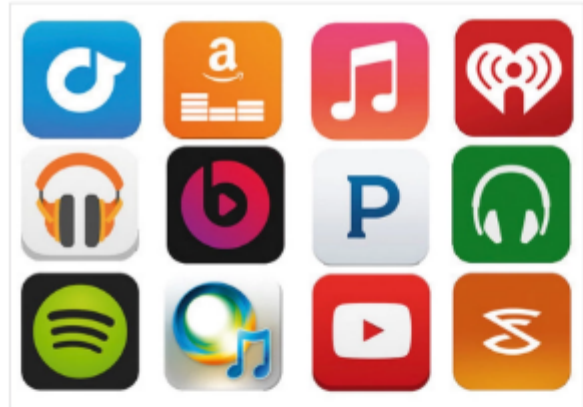
STORAGE

The biggest section of the consumer cloud market is undoubtedly on-line storage. The likes of Dropbox, Google, Microsoft and Apple all cater for the home user with up to 5GB, or more in some circumstances, storage available. It's all accessed via a friendly and easy to use portal, while integrating all your devices.



MUSIC STREAMING

Thanks to cloud services we no longer have to own the music we want to listen to. Music streaming services such as Spotify and Audiobox, all offer the ability to push your musical choices to any device that's connected to the company's portal.



EMAIL ACCESS

The second biggest consumer cloud service is email. Webmail has taken off in the last decade or so, moving away from traditional ISP or work-based email and offering the user an area where space is plenty, and there are very few restrictions applied.



MAPPING AND GPS

Looking for a new house? Most people will automatically open up Google Maps or Earth to view their potential new home, to see just how big the back garden really is. Likewise, GPS from such sources as Here, Waze and OpenStreetMap are helping the consumer find their way around.





SOCIAL MEDIA

We're all familiar with social networking but it doesn't always strike people that social media is in some ways a cloud service. Loosely speaking, it's a cloud communications (CAAS) service, where users share information and connect to other users via a central service or portal, such as Facebook, Twitter and so on.



REMOTE ACCESS

Being able to access your own, or someone else's, desktop remotely is a great help to those who need to share a screen or aid a family member with a problem. Teamviewer, and other companies, make this easy through its cloud-based services.



VIDEO STREAMING

Netflix is by far the most popular of the video streaming, cloud-based services. In 2015, the company shut down its last datacentre and now adopts a 100% cloud-based structure, being fully reliant on Amazon's Web Services.



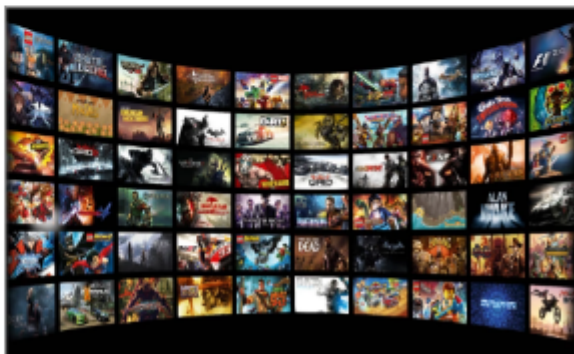
ANONYMITY

Gaining in popularity is VPNAAS (Virtual Private Networking As A Service). This is a cloud-based service used to hide a user's IP address and allow them to gain access to content held in other countries. It's still early days but the service is growing.



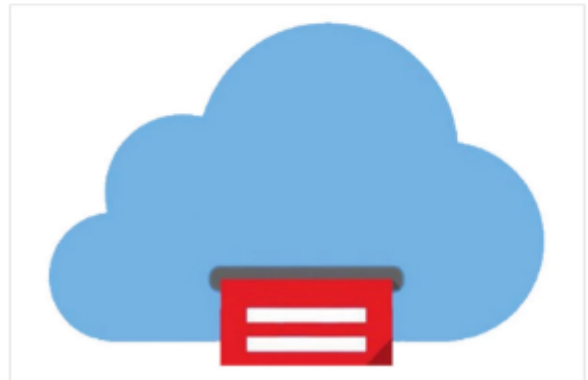
GAMING

Since cloud computing has become significantly more powerful it's now possible to enjoy gaming over the cloud. GAAS, or Gaming As A Service, is a fast growing market where you're able to play anything from triple-A titles to some of the classics from the past, and all from within a cloud service.



PRINTING

Cloud printing is a service that allows you to print over the Internet from anywhere, on any device. You can add and share your printers and print from any type of application. Google Cloud Print is one such example, with the likes of HP following suit.





Apple iCloud

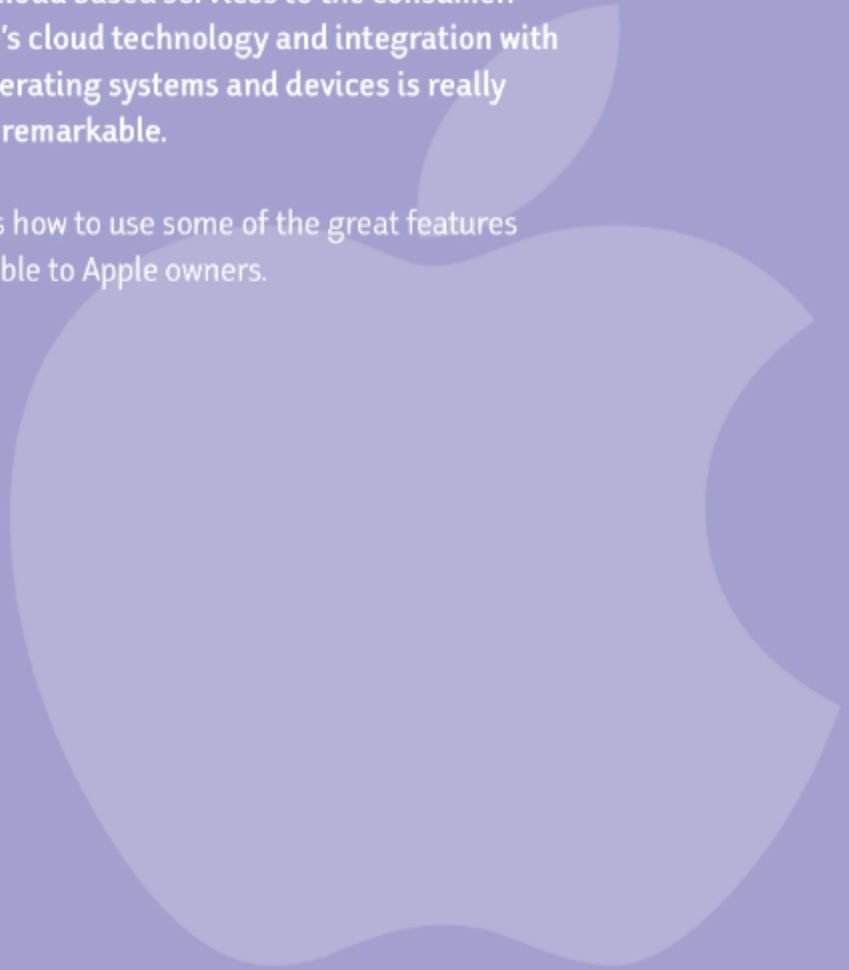




Apple iCloud

The Cupertino company has invested countless millions into bringing one of the best cloud based services to the consumer. Apple's cloud technology and integration with its operating systems and devices is really quite remarkable.

Here's how to use some of the great features available to Apple owners.





Apple iCloud

Apple's foray into user cloud services was launched in 2011, replacing the company's MobileMe service. iCloud is one of the most used consumer cloud services in the world, with well over seven hundred million users.

FOUR FAB FEATURES OF iCloud

iCloud offers much more than just online storage. Apple has worked hard to deliver a complete cloud solution for its users, making their devices act as one whilst still offering unparalleled service.

FAB FEATURE 1

iTunes in the Cloud is a great service. Whatever you've purchased in the iTunes, iBooks and App

Stores are immediately accessible on all your Apple devices. You can see what you've bought in the past and download past purchases to any of your devices.



FAB FEATURE 3

The iCloud Photo Library is one of the service's most talked about features. You're able to sync your

photos across all devices, share photos, invite others to add photos and you can even access them from non-Mac devices and computers through the iCloud webpage.



FAB FEATURE 2

You can back up your Safari links, bookmarks, Reading List, and even view open webpages on

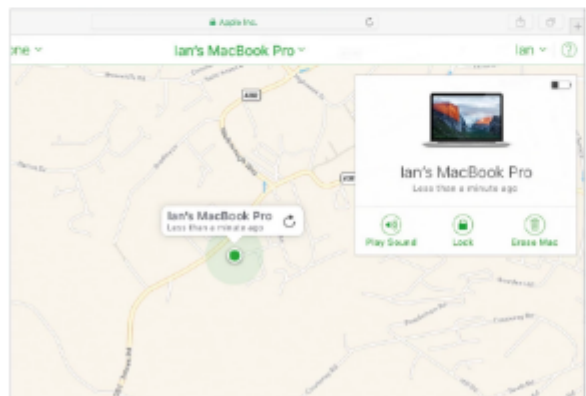
other devices. Safari in iCloud is very easy to set up and with it you can easily move from one device to the next, seamlessly browsing as you go.



FAB FEATURE 4

Find My Mac is another excellent element of the iCloud service.

When set up correctly you're able to locate any lost or stolen Apple devices, lock them so no one can tamper with them, remotely erase the data held on them and make them emit a noise so you can find them nearby.





Upgrading iCloud Drive

A new iCloud account comes with 5GB of free storage available. If you use your iCloud Drive a lot though, you may run out of space, especially if you also back up your iOS device to the cloud.

MORE iCloud

Thankfully, it's easy to purchase more storage for your iCloud Drive. This four step solution will help you out, and the price plan is reasonable too.

STEP 1

To upgrade the iCloud storage on your MacBook, first go to the Apple menu and open the System Preferences. Click on the iCloud option, found in the third row, on the left.



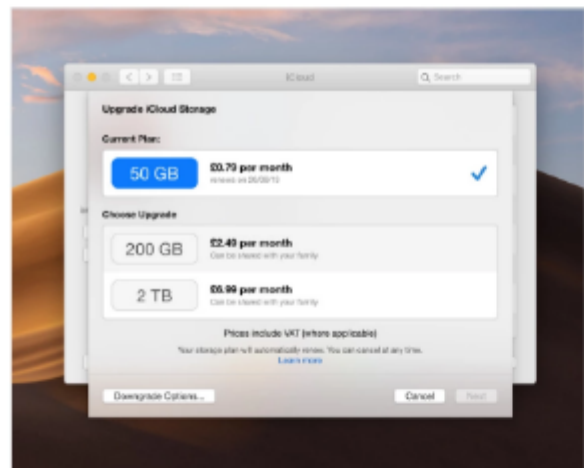
STEP 2

In the bottom right corner of this window, there's a button marked Manage..., click it. From the next screen, you can delete documents and data from your iCloud Drive if you wish.



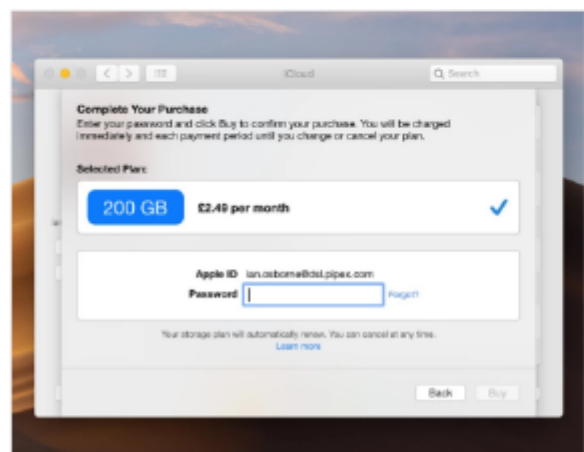
STEP 3

Click Change Storage Plan..., located in the top right. On the next screen, you're shown your current plan and options to upgrade for a higher monthly fee. Click on one to choose, followed by Next.



STEP 4

Click the Downgrade Options if you want a smaller, cheaper plan. When asked, input your Apple ID and password and you are immediately switched to the new iCloud storage plan.





How to Use Apple's iCloud Services

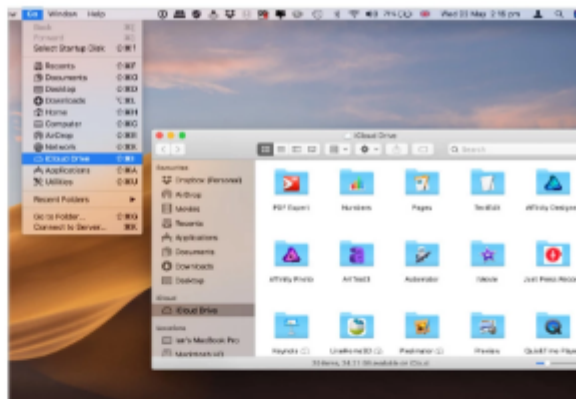
Keep your important files safe in remote online storage and have them instantly accessible from all your Apple devices (your Mac, iPhone and your iPad), with Apple's revolutionary cloud storage service iCloud. The files you want to keep safe have never been safer or easier to access.

STORING YOUR FILES IN ICLOUD

Storing your files in iCloud is as simple as moving them to a folder. They are then synced with iCloud.

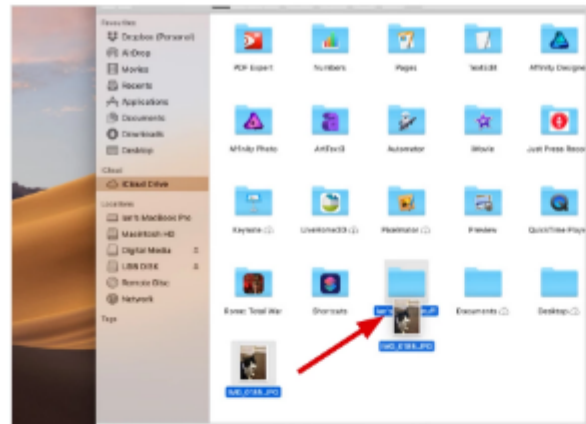
STEP 1

Click on your desktop to see Finder, then open iCloud Drive from the Go menu. You may need to log into iCloud using your Apple ID. You can see a Finder window showing the contents of your iCloud drive folder, with folders for some apps that store output in iCloud.



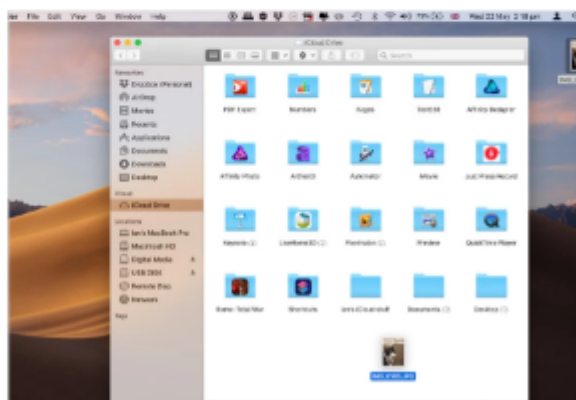
STEP 3

You can organise your iCloud folder like any other folder and even create new folders within it. To move files into a new folder in your iCloud Drive, just drag and drop them where you want.



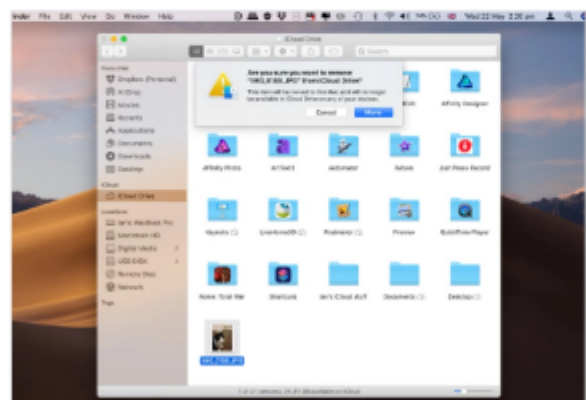
STEP 2

To save any files into your iCloud Drive folder, simply drag them from your desktop and drop them in the open iCloud window. They are now stored remotely and accessible from any connected Apple device.



STEP 4

To move files out of iCloud storage and back to your hard drive, just drag them out of the iCloud folder and onto your desktop. You will be asked to confirm the move.





MESSAGES IN ICLOUD

iCloud can sync all your Messages so you don't miss conversations on your Apple devices.

STEP 1

If you want to sync your messages across all your devices using iCloud, open the Messages app and in the Messages menu, click on Preferences.



STEP 2

Tick Screen Sharing, and select it. Choose whether you want all users to use Screen Sharing, or opt for a select few using the +/- icons.



DELETE DOCUMENTS & DATA



You can delete the iCloud documents and data used by an app from System Preferences. Click the iCloud icon, then click the Manage button. Find the app you want to clear out, highlight it and click Delete documents & data. This cannot be undone.

MAIL, CALENDARS AND CONTACTS

Sync all your contacts and email inboxes with other Macs, and iOS devices on the same iCloud account.

STEP 1

Open up the Apple menu, and select System Preferences to bring up the System Preferences options. Click on Internet Accounts.



STEP 2

Click on the iCloud option in the left sidebar to see which apps will sync via your iCloud account. If any are unchecked, check them.



STEP 3

Your mail (provided it's configured), contacts and calendars will now be available for all your other Macs and iOS devices you may have with iCloud enabled.





iCloud Photo Library

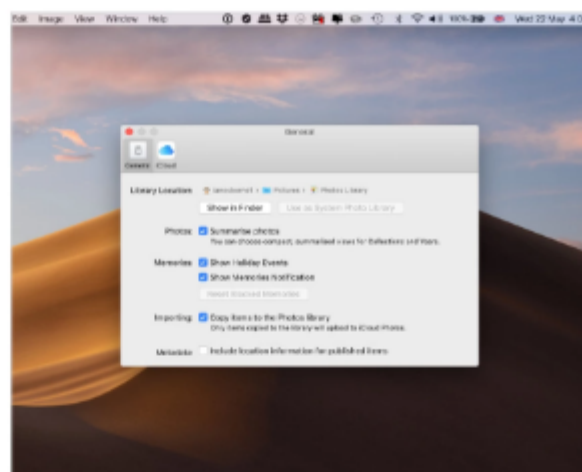
iCloud Photo Library lets you store all your photos in the cloud and view them on all your devices. Despite the bad press of recent years, chiefly the leak of celebrity images via iCloud, it's still regarded as an excellent and secure online storage solution.

USING ICLOUD PHOTO LIBRARY

You're able to view all your stored photos from any of your Apple devices but you're also able to view them from the iCloud website; for those times when you're not at an Apple device.

STEP 1

To enable iCloud Photo Library on your MacBook, first of all, open the Photos app and in the Photo drop-down menu, select Preferences (as shown).



STEP 3

You can choose between Download Originals to the Mac, to keep a backup copy of your library on your MacBook, or Optimise Mac Storage to leave it all on the cloud.



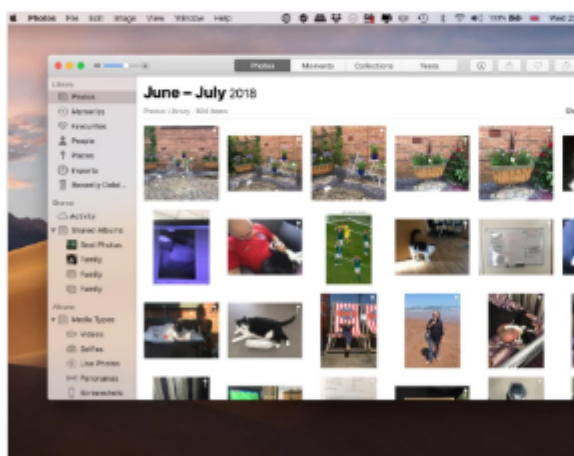
STEP 2

In the Preferences window, click on iCloud and then tick the box labelled iCloud Photo Library. Your photos now upload to your iCloud; this may take some time, depending on how many images you have stored.



STEP 4

Now do the same on any other Macs you have. Any duplicates should be resolved by iCloud as you go. Naturally, you only need a backup of your library on one Mac.





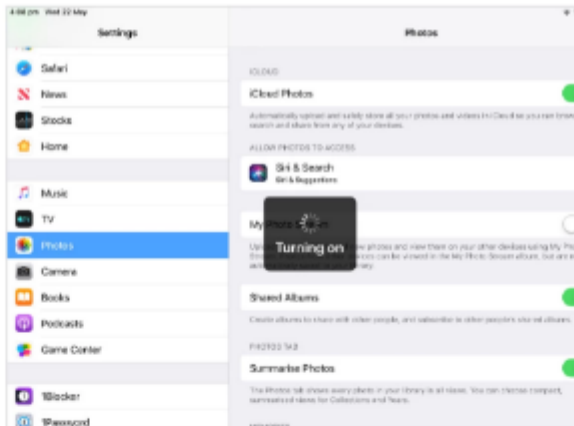
STEP 5

To sync your iOS device's Photos app with your iCloud Photo Library, first open the Settings app from the home screen. It's the one that resembles a machine cog, bottom left of the screen.



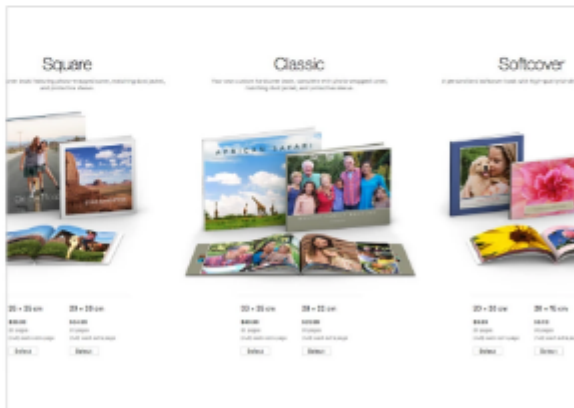
STEP 6

Scroll down and tap Photos in the left-hand column, then in the right-hand column, switch on iCloud Photos at the top to enable syncing and upload your device's photos to iCloud.



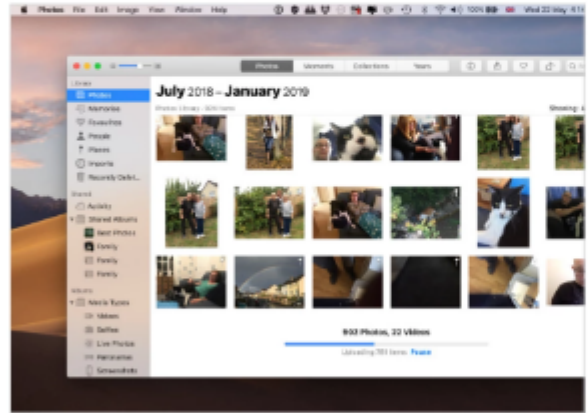
STEP 7

If you have projects such as calendars, photo books, cards and other such items, created before Apple ceased to offer these services, they might not be synced.



STEP 8

All your photographs are shown as thumbnails, and you can select and import them at will. Here we're importing photos stored on an iPad onto a Mac using Photos.



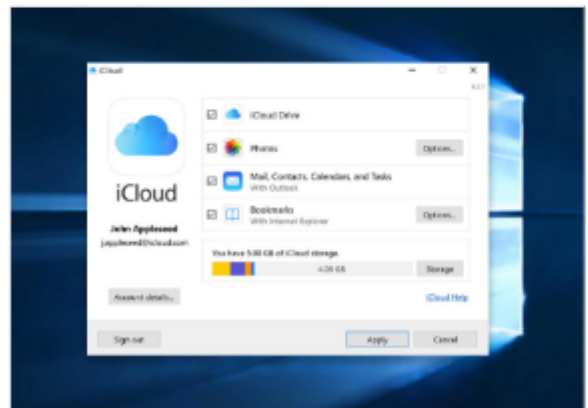
STEP 9

You can also review your photos via the iCloud webpage, as mentioned earlier. Simply navigate to www.icloud.com, log into your iCloud account and open the Photos web application.



STEP 10

You can even review your iCloud settings from an Internet connected device or computer (other than a Mac) and manage various settings within.





Safari in iCloud

With iCloud, browsing history, bookmarks and passwords can be synced with just a few clicks. Apple has gone to great lengths to ensure ease of use for its user base when dealing with its cloud services.

ON SAFARI

Apple's iCloud is surprisingly powerful when it comes to consolidating all your Apple preferences, especially your Safari content.

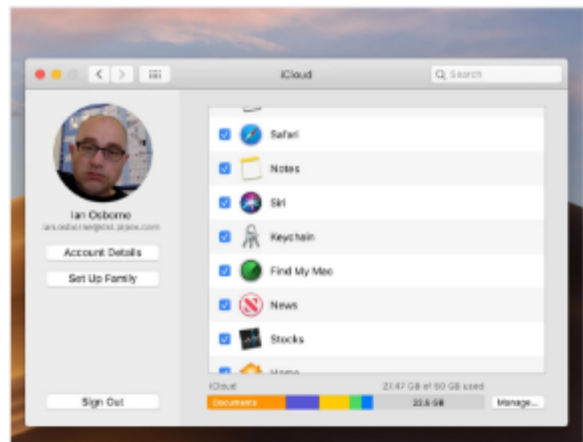
STEP 1

To let iCloud share all your information from Safari across your devices, you need to enable Safari in the iCloud preferences. To do this, first go to the Apple menu and select System Preferences.



STEP 3

Find Safari in the list that appears in the main window and click to tick the checkbox next to it. You can now access all your bookmarks and your reading list on your other Apple devices, providing they're linked to the same iCloud account and also have Safari ticked.



STEP 2

Click on the iCloud icon. It's found in the middle row, left-hand side.



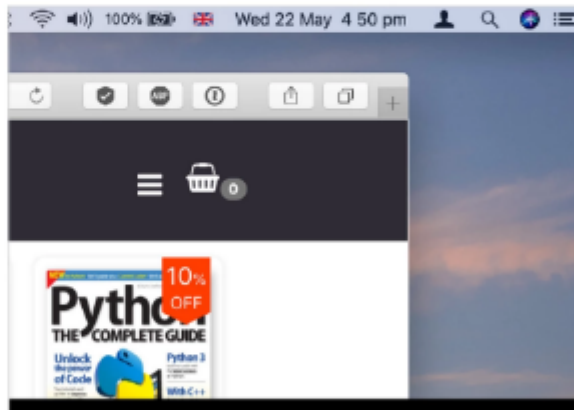
STEP 4

If you have tabs open in Safari on another Mac or iOS device, you can access them via the cloud. First open Safari as normal.

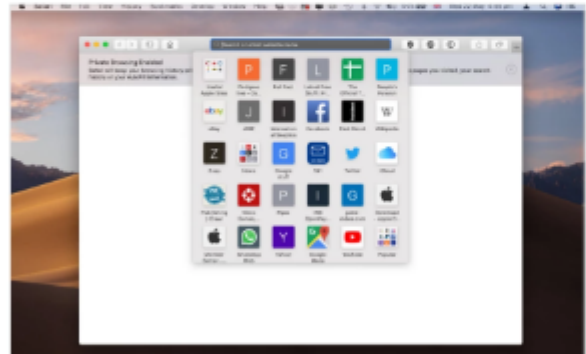


**STEP 5**

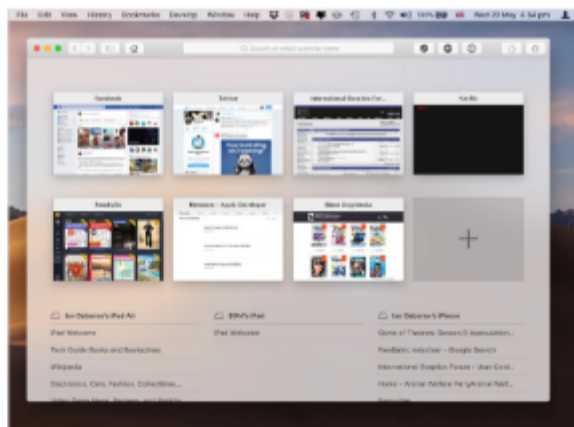
Click on the Tabs icon in the top right of the Safari window, next to the Share button; this will bring up the Tabs view and your shared Safari browsing information.

**STEP 8**

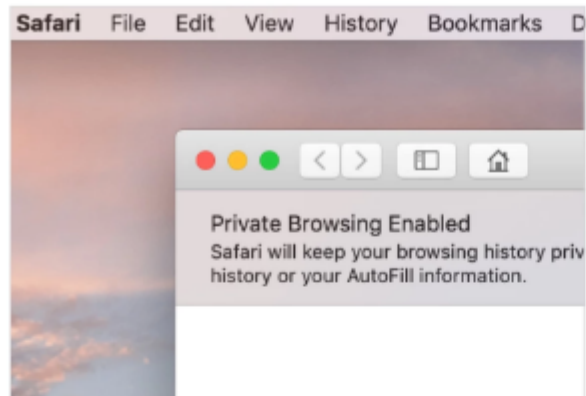
A Private Browsing window has a black URL bar instead of the usual white. In this window, Safari tabs aren't made available to other computers through the cloud. The computer also won't store any browsing information such as website history, searches and autofill information.

**STEP 6**

You can now see any websites open on other devices. If no tabs are open on other devices, you just see a confirmation window. Click on one of them to open it in a new tab.

**STEP 9**

To turn off Private Browsing, close the active Private Window and any tabs you have opened when viewing via this window. To activate Private Browsing again, you'll need to reopen a new Private Window.

**STEP 7**

If you want to keep Safari enabled in iCloud but don't want open tabs to be available on other devices, you need to turn on Private Browsing in Safari. To turn on Private Browsing, select New Private Window in the File menu.

**STEP 10**

Remember that Private Browsing is always off by default when you start Safari, even if it was enabled the last time you quit. If you want to browse privately you need to enable Private Browsing manually every time you launch Safari.





How to Use the iCloud Keychain

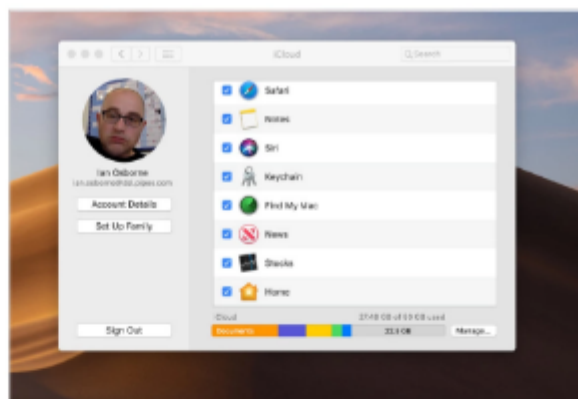
Do you get sick of entering your username and password every time you go on an Internet forum or shopping site? With iCloud Keychain, you can store all your password information on the cloud and sync it between your Apple devices using iCloud.

SETTING UP THE KEYCHAIN

iCloud Keychain is a great way of storing passwords in the cloud, so you don't have to remember them. Follow this procedure to set it up.

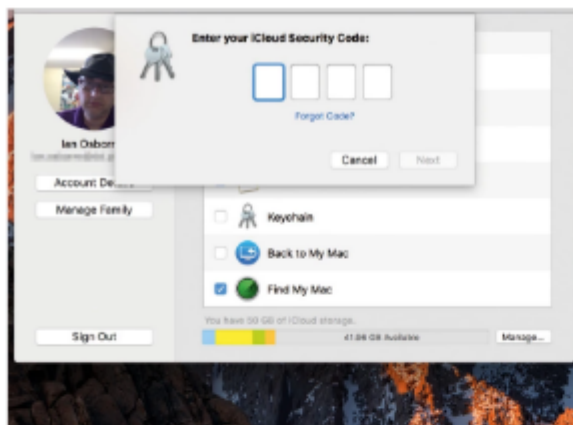
STEP 1

First of all, open System Preferences from the Apple menu in the top-left corner of the screen, and click on the iCloud icon. If iCloud Keychain isn't ticked, tick it now and follow the on-screen instructions to get started.



STEP 3

It's then saved to your iCloud Keychain and synced across your Apple devices. If you ever need to see your password, open the Keychain Access app (it's in the Applications > Utilities folder).



STEP 2

When you sign up for an account on a website in Safari, maybe to join a forum or register for a newsletter, Safari suggests a password to use. You can use that password at the click of a button.



STEP 4

Find and double-click on the account you wish to view, then in the pop-up window, click the Show Password box. Type your admin password in the next window and the password is shown.





iCloud Desktop Documents and Folders

With recent versions of macOS and iOS, you can not only store documents on your iCloud but also files and folders on our desktop. It's done automatically, so a file on your Mac's desktop is accessible from your iOS device, and other Macs.

DESKTOP DOCS FROM ANYWHERE

The process is surprisingly easy and highlights just how good iCloud is implemented into Mac technologies. Remember, this will only work if all devices are on the same iCloud account.

STEP 1

To switch on iCloud Desktop Documents and folders on your MacBook, open System Preferences and click on iCloud. Click on the Options button next to iCloud Drive and then tick the box next to Desktop & Documents Folders. It may take some time to set up.



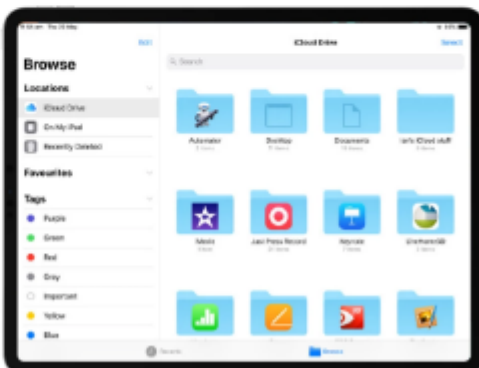
STEP 3

Documents and data that are left on your MacBook's desktop can now be accessed through the iCloud Drive folder of any MacBook or iOS device signed into the same iCloud account. All Macs must be running Sierra and all iPhones, iPads and iPod touches must have iOS 10.



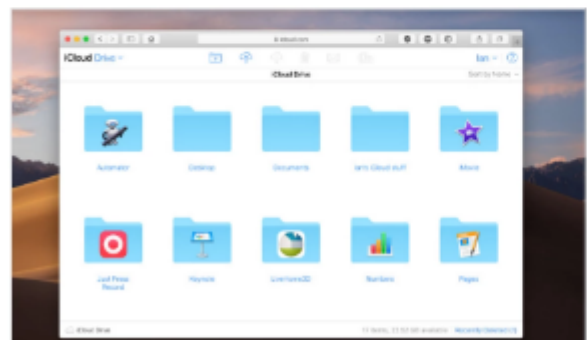
STEP 2

If you don't have it already, install the iCloud Drive app on an iOS device by downloading it free from the App Store. On your Home screen, open the app. There's a new folder called Desktop. All files stored on your MacBook's desktop are also shown in here.



STEP 4

You can also access your Desktop Documents and Folders using the iCloud website. Just point your browser to www.icloud.com and sign in. Open the iCloud Drive and the Desktop folder will be present. You can do this on any Internet-capable device, regardless of its operating system.







Google Cloud Services

There's no denying the impact that Google has had on the evolution of the Internet and how we work online. The cloud services offered by the technology giant are without doubt some of the best you can use, from home and business user points of view.

Let's see what services are available at the consumer level and how to implement them better.





What are Google Cloud Apps?

Google has invested billions into building and delivering a range of cloud-based services and apps for the home and office. Email, document editing, spreadsheet creation, website building, storage and collaborations are all covered with an easy to use and familiar interface.

THE GOOGLE WAY

Although there are a considerable number of Google apps available, these ten are by far the more popular for both home and office use.

EMAIL

GMAIL Gmail is one of the most popular web-based, cloud, email solutions available today. With everything from custom themes to cross-platform compatibility, it's little wonder that there are over one billion active Gmail accounts.



DOCS

With Google Docs you're able to write, edit and collaborate with anyone. This cloud app is accessible from any connected device and the documents can be saved as Microsoft Word, Rich Text, Plain Text, ePub and even as a web page.



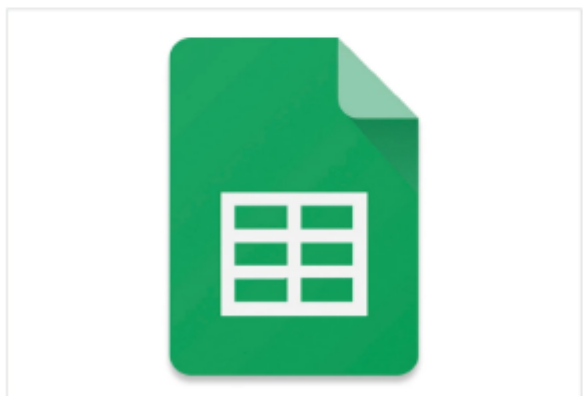
DRIVE

Google Drive is the company's mass cloud storage solution. With 15GB of storage available for free and solutions for up to 30TB for a considerable monthly fee, Drive is considered one of the better SAAS for both home and business use.



SHEETS

Alongside the ability to create documents, Google offers us the chance to create, edit and collaborate with online spreadsheets. Sheets works very much the same as Docs, in that it's a cloud-based app available from any online device and allows you to save in the popular office formats.





SLIDES

As you can well imagine, Slides completes the more popular office-based productivity apps with an online presentation cloud app. There are numerous templates available and as before you can save the presentation in a variety of different formats.



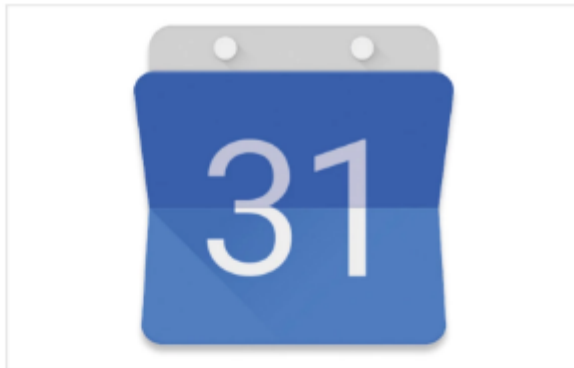
HANGOUTS

Described as a unified, cloud-based communications service, Google Hangouts is where you can participate in text, voice or video chats with other individuals or in groups. It's built into Gmail and Google+ and is also available in mobile versions.



CALENDAR

Google Calendar is a feature-rich cloud-based app that allows you to add events and share them with your friends, family and co-workers. You can import predefined calendar templates, international holidays and celebrations; also create email-based agendas and much more.



GOOGLE+

Google's answer to a social networking platform hasn't quite taken off as well as its other cloud apps; or the other major social networking platforms. It can integrate all the other Google services, is easy to use and consists of several elements to help the user interact with their content.



SITES

Although not quite as popular as it once was, Google Sites has seen a bit of an upgrade in recent years. To bring it in line with the other Google cloud apps, this web page creation app is now far easier to use and manage and integrate with other Google apps.



PHOTOS

Google Photos is a photo and video sharing cloud service that was launched in mid 2015. With it you can auto-backup all your images from your Google account enabled devices, as well as edit and share your media.





Google Drive

Google Drive is one of the most used cloud-based storage services available today. With both free and priced solutions to suit the needs of the home and SMB user, there's plenty to like about it.

FOUR FAB FEATURES OF GOOGLE DRIVE

There are plenty of great features to sink your teeth into with Google Drive but here are four of the main reasons why it's so popular.

FAB FEATURE 1

15GB of free space is pretty impressive, even by today's high volume standards. If you need more

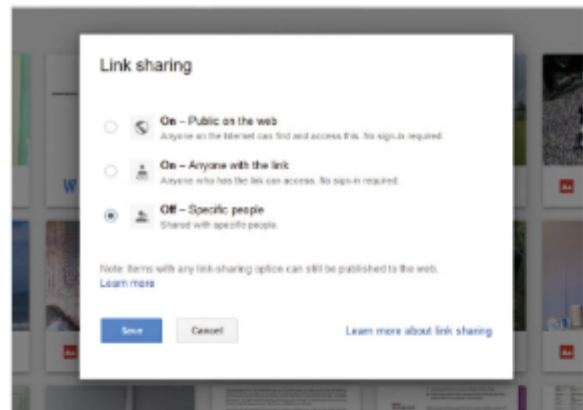
though, you can upgrade to 100GB for just £1.59 per month or 1TB of storage for a mere £7.99 per month. For the SMB user, you can even go up to 30TB for £239.99 per month.



FAB FEATURE 3

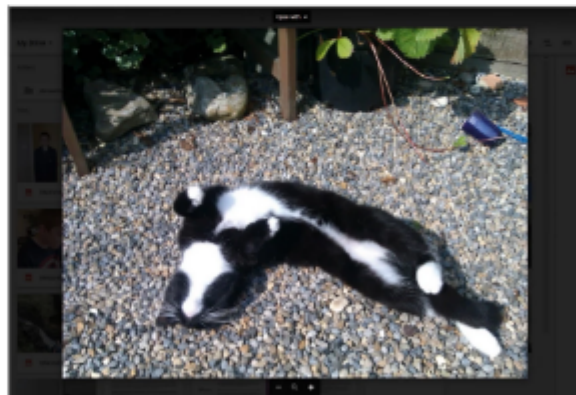
Collaboration is one of them most important aspects, and features, of the modern cloud storage service.

Google Drive's contents are private until you opt to share them either individually or with a group. You can even create a publicly accessed share for your Drive contents.



FAB FEATURE 2

You can upload any kind of file type into Google Drive, be it a Microsoft Office created file, PDF, image, video or audio. You can even view the contents of Adobe and Microsoft-based file types, as well as archive and text files, from within Drive.



FAB FEATURE 4

Security is always at the forefront of most users' minds when it comes to cloud computing. Thankfully, Google

Drive is a really secure service. It uses a military standard 256-bit AES encryption cipher and a two-step verification process that can interact with your security.





Gmail

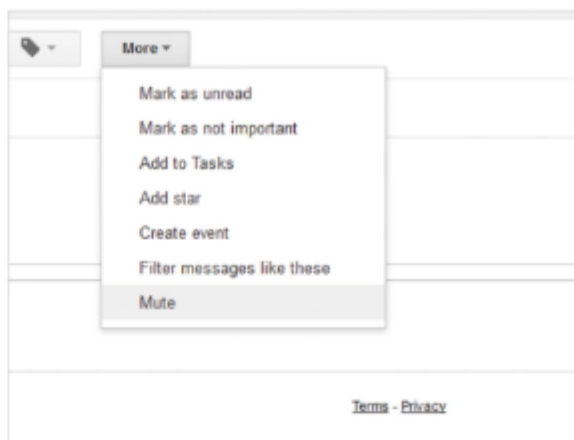
Gmail is one of the best webmail services available for the home and business user. While it may lack some of the advanced features that an in-house email server can offer, there's still a lot you can do with Gmail's easy to use interface.

FOUR FAB FEATURES OF GMAIL

Sending and receiving an email is just the tip of the Gmail iceberg. Hidden below the surface are numerous fab features, here are our four favourites.

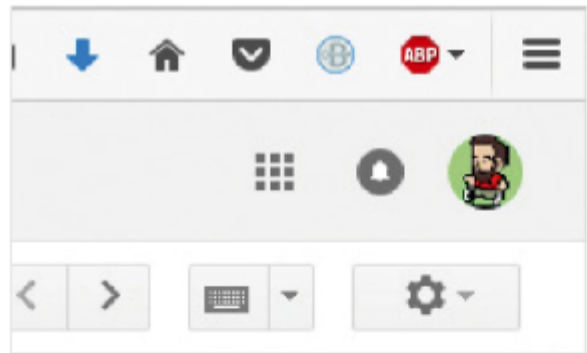
FAB FEATURE 1

Group emails are great, but they can become a distraction when you're trying to work. Clicking on the More button in a group-wide email and selecting Mute will let you get the message conversations but without the notifications.



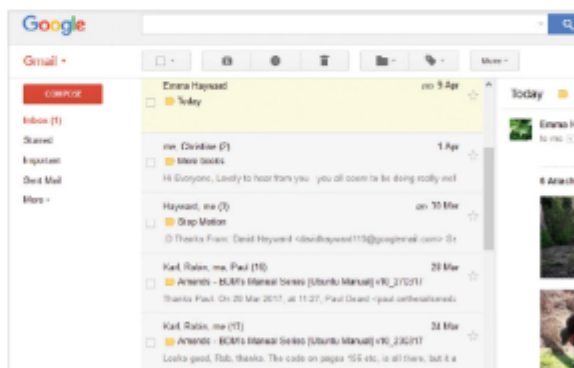
FAB FEATURE 3

You can easily switch between multiple Gmail accounts by clicking on your profile image in the top-right corner of the Gmail interface. However, you can also quick change by entering a number into the Gmail address. For example: <https://mail.google.com/mail/u/0/#inbox>, for one account, <https://mail.google.com/mail/u/1/#inbox>, for another, and so on.



FAB FEATURE 2

Gmail Labs are available through the cog icon in the top right-hand side of your Gmail page; click on Settings and then the Labs tab. In here are numerous experimental but very useful features; enable Preview Pane, for example and Save Changes. There's now a new Toggle Split Plane Mode box in the upper right, click this for different preview views.



FAB FEATURE 4

Clicking on the cog icon followed by Settings will present you with a bewildering number of features that you can activate and use within Gmail. Add a signature, Desktop Notifications, Personal Level Indicators, create Labels, use a new Theme, send mail as another account, create filters and block addresses, and even alter the default text style, there's plenty to include.





Calendar

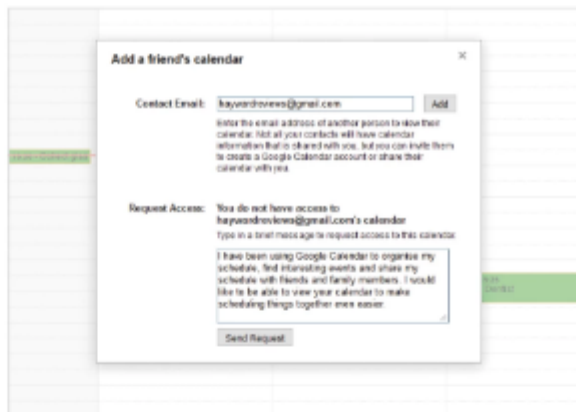
Google's Calendar cloud app can do far more than simply let you know when your doctor's appointment is due. With it you can share multiple calendars, create countdown timers, get daily agendas to your inbox and much more.

FOUR FAB FEATURES OF GOOGLE CALENDAR

There are a surprising number of features that you can browse through within Calendar but for the sake of brevity here are our fab four.

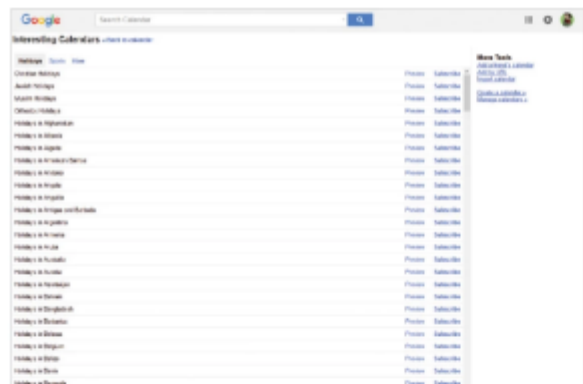
FAB FEATURE 1

You can easily add another Google account user's calendar to your own views by clicking on the 'Add a Friend's Calendar' box under the Other Calendars option. This will launch a separate window that will send a message to the other user's mail account requesting permission.



FAB FEATURE 3

You can import all sorts of interesting calendars by clicking on the down arrow next to Other Calendars and choosing Browse Interesting Calendars from the menu. You can now subscribe to calendars displaying international holidays, sporting events, phases of the moon, sunrise and sunset times for your locale and more.



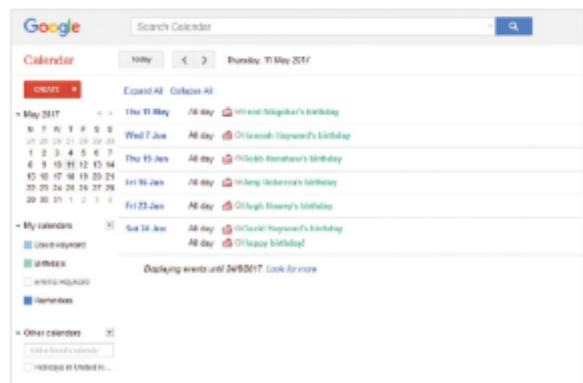
FAB FEATURE 2

It's surprisingly easy to add a video call to any appointment in Calendar. All you need to do is click on the Create button, set up the event and click Add Video Call. When the invitees receive their Calendar event email, there will be a link to take them to a Google Hangouts video chat session.



FAB FEATURE 4

The various Calendar views: Day, Week, Month and 4 Days are fairly self-explanatory. However, the Agenda view lists your events or appointments in chronological order, with the ability to expand and edit each event accordingly. If you have the Birthdays option enabled in My Calendars, you can even have your Google contacts' birthdays included.





Docs

On the surface Google docs may appear to be just another, simplistic word processor, albeit one that's online and cloud-based. However, dig a little deeper and you'll come across some surprisingly powerful features.

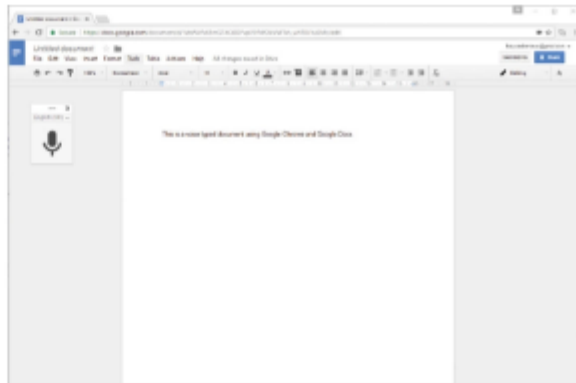
FOUR FAB FEATURES OF DOCS

Google Docs is really quite a remarkable service. Not only can you create, edit and share documents, you can also use a range of amazing features.

FAB FEATURE 1

The days of using the keyboard for entering text are severely numbered. If you use Google Chrome, and you

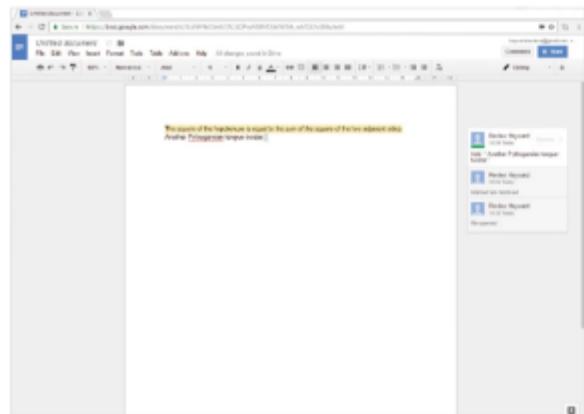
have a microphone attached to your system, click the Tools option in the Docs menu, followed by Voice Typing. Make sure the microphone is working and click its icon to start talking. Click the icon again to stop Voice Typing.



FAB FEATURE 3

When you're collaborating on a document with numerous people it can be difficult to track changes.

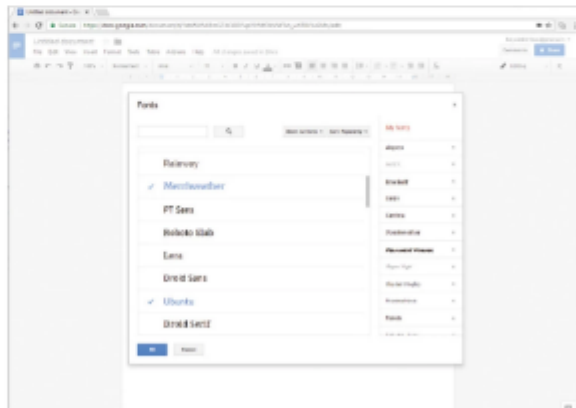
Click on the pencil icon in the top right corner of the Docs interface and select Suggesting. This will now track changes and allow other collaborators to accept or reject the edit.



FAB FEATURE 2

Docs has a good number of fonts to choose from when creating a new document. If you want though,

simply click on the fonts box, followed by More Fonts. This will bring up a new window displaying hundreds more to choose from. Just click a font to start using it.



FAB FEATURE 4

While collaborating, keeping track of a document's revision history is

equally as important as tracking its on-the-fly changes. Click on File followed by See Revision History, to view the entire history of the chosen document.





Google+

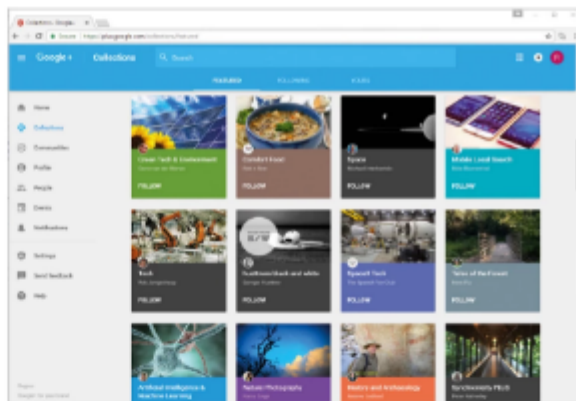
Although it's not used as much as other social media platforms, Google+ is still a powerful cloud network to use personally or as a business portal. You can add important information, create communities and join other like-minded users.

FOUR FAB FEATURES OF GOOGLE+

Google+ is an ever-changing interface, with the company adding or removing concepts and the way community and individual posts are viewed. Here are four great features that work as of now.

FAB FEATURE 1

You can opt to follow Collections based on a shared interest from other Google+ users and communities. For example, selecting Star Wars will display all the relevant and new Star Wars related posts. You can even create your own Collection.



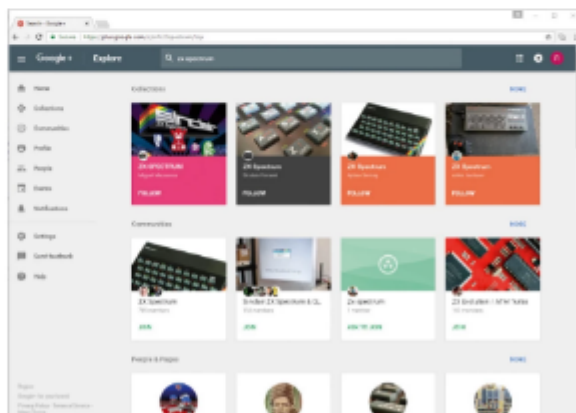
FAB FEATURE 3

You can create and set up Events and Hangouts from within Google+, bringing your friends and wider community together either in person or as a video or text Hangout. Business users can create corporate events and include co-workers and clients.



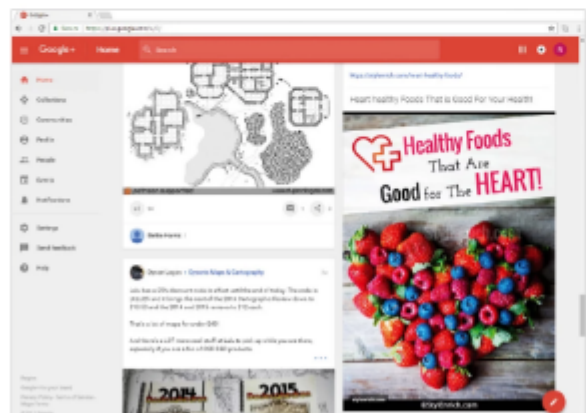
FAB FEATURE 2

As with Collections, Communities are groups created on a specific subject that can range across any topic you can possibly think of. Individuals and businesses can create a Community and engage other users in a direct connection and discussion.



FAB FEATURE 4

Google has recently updated the look of Google+, making it easier to view your feeds and those of the communities and People you follow. Clicking on the Home button will bring up the latest content posted by your connections.





Photos

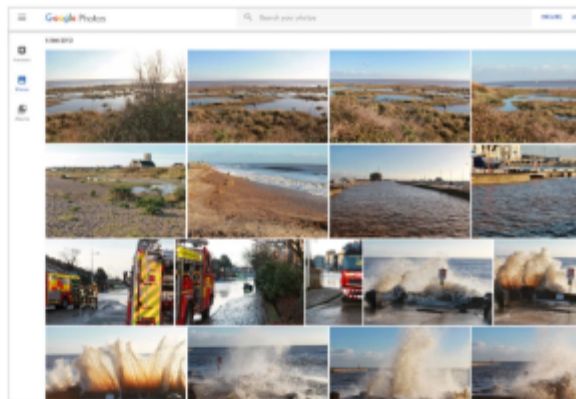
We live in a world where most of us now carry a reasonably powerful digital camera around with us. Our smartphones are regularly used to take images of events and important times in our lives. It's important then that they are backed up to a cloud service.

FOUR FAB FEATURES OF PHOTOS

Google Photos was released mid 2015 and is designed to automatically backup your device's photos to the Google account cloud; but there's more to this cloud service than you initially think.

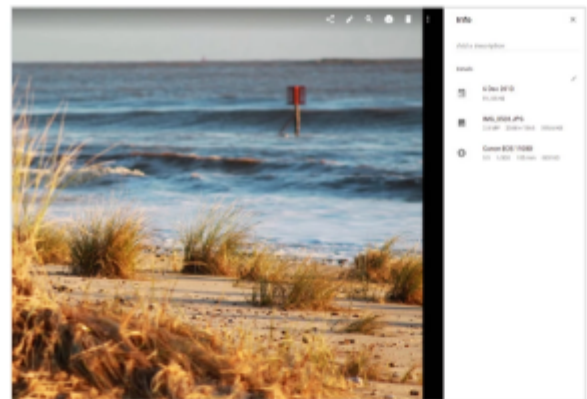
FAB FEATURE 1

Automatic backups are important to many users, particularly of their images. Imagine taking an important picture, only to drop your device into the sea moments later. Providing you have a good connection, that image will be backed-up and categorised with a time and date stamp.



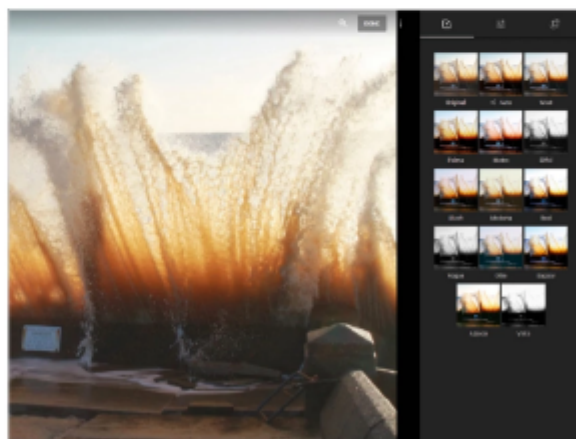
FAB FEATURE 3

You can even upload images that haven't been taken by a smartphone. What's more, if you click on the Info button for a non-smartphone image it tells you which device took the picture and the device's settings at the time the picture was taken.



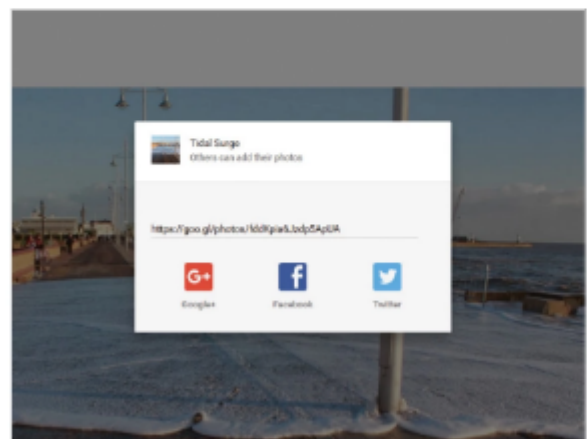
FAB FEATURE 2

Each image stored in Photos can be edited with a number of filters, along with having the contrast and colours altered and rotating. The effects are minimal but with the right image they can be quite stunning.



FAB FEATURE 4

You can easily share your images by creating a Shared Album or by sharing individual images with your Gmail and Google+ contacts. You can even post the image to Google+, Facebook or Twitter.





How to Use Google Drive

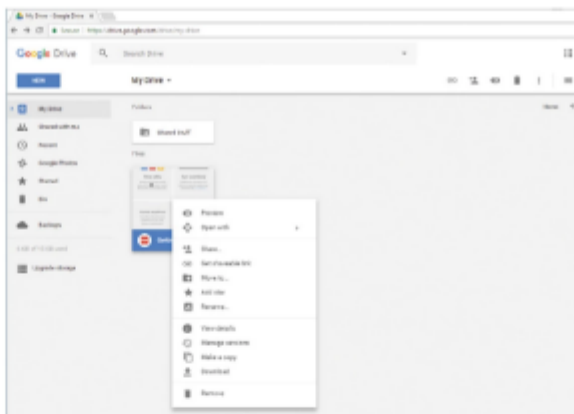
Google Drive is a great cloud storage solution for both the home and SMB user but is it easy to use? If you're new to storing and sharing in the cloud then the terminology used can be quite daunting. Happily, it's not that difficult.

UPLOADING TO DRIVE

Let's take a look at how to get started with Google Drive and upload your first files. Note that these files are copied to Google Drive, not moved; so they remain on your computer.

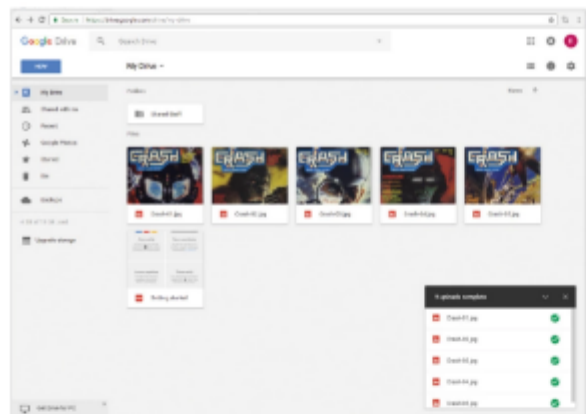
STEP 1

The first obvious step is to go to www.drive.google.com in your browser and sign up for a free Google account, or sign in to your existing one. The Drive UI is simply laid out, with various controls along the left-hand side, settings and info options along the top; and you can right-click within the main section for more options.



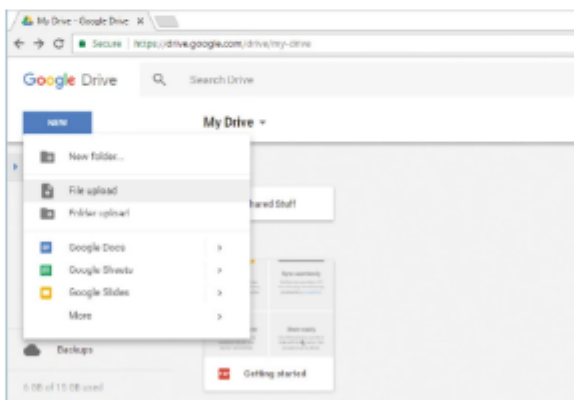
STEP 3

This will launch an Explorer window or your local operating system File Manager. Locate the file(s) you want to upload, left click to select (multiple files are fine) and click Open. You can see a progress box has appeared detailing the names of the files to upload and whether they have successfully uploaded or not.



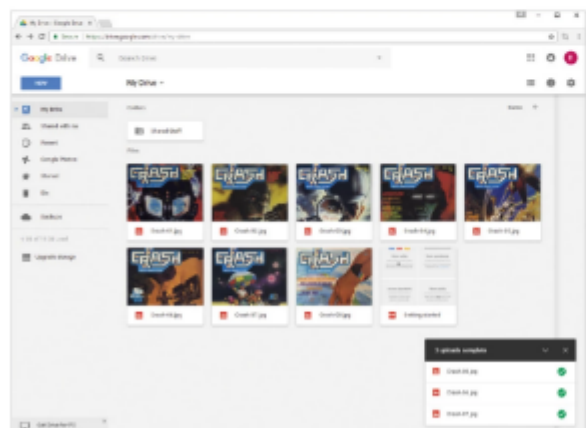
STEP 2

There are two ways in which you can upload a file to the web-based version of Drive. First, click on the New button. This will present you with a menu offering to upload a file, folder, new folder or a new file based on Google's Docs, Sheets, Slides and other apps. Click on File Upload for now.



STEP 4

The other way to upload is to simply drag and drop any files. Open up your OS File Manager, find the files you want to upload, highlight them all with a left-click, and while still holding down the left mouse button, drag them into the main Files section in Drive.



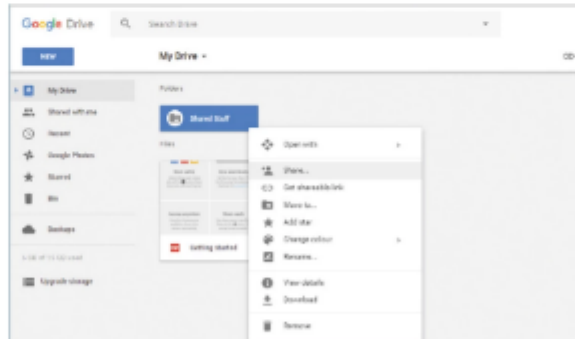


SHARING DRIVE CONTENT

Ideally you share Drive contents through folders. Click the **New** button, then **New Folder** from the menu. Rename the **New Folder** to 'Shared Stuff' (or whatever you want) and click **Create**.

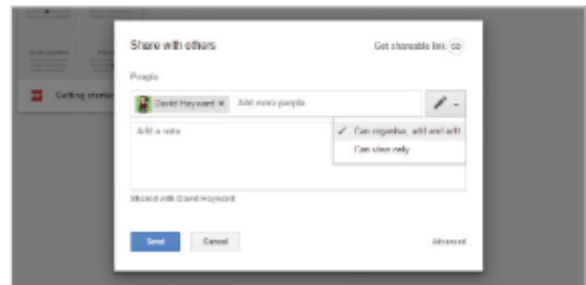
STEP 1

The folder will appear above the uploaded files. You can move the files by highlighting them all and dragging them into the new folder. The new **Shared Stuff** folder is now populated with the uploaded files. Right-click the folder and choose **Share** from the menu.



STEP 2

In the **Share With Others** window, enter the email addresses of the people who can access the new folder. Clicking the pen icon will grant different permissions to the shared folder. When you've entered the emails of those to share with, click on **Send**. This will send an email to the addressees detailing how to access the shared folder.

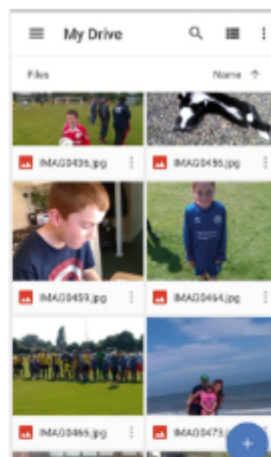


DEVICE AND DESKTOP APPS

Google Drive is available as an app for your device, **Android** or **iOS**, or as a **desktop app** for **Windows** and **Mac** users.

STEP 1

Android users should have the Google Drive app already loaded by default, if not it's easily installed via the **Google Play Store**. Apple device owners can download and install **Google Drive** from the **iTunes store**. When installed, simply login with your **Google** credentials and you have access to your **Drive** area.



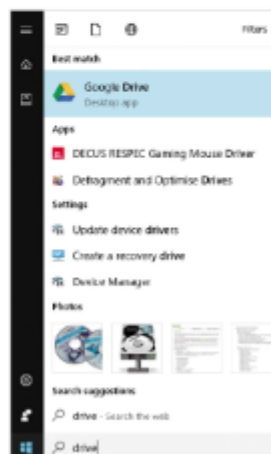
STEP 3

When it launches, the **Drive** app asks you to sign-in to your **Google** account. After signing in, **Drive** will display some information regarding how it works. Click the **Next** button to work through the info. You are asked which folders from your **Documents** area you want to sync. This is a backup to **Drive** of your locally stored docs.



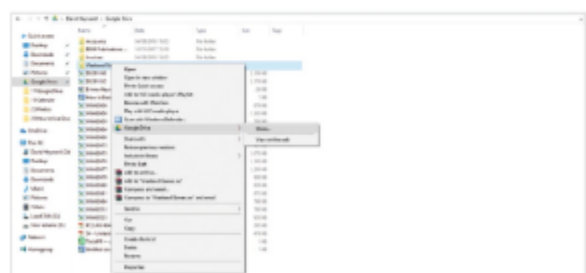
STEP 2

For desktop users, browse to www.google.com/drive/download and download the file for your particular operating system. Double-click the downloaded file to start the installation of the **Drive** desktop app. The **Drive** icon should appear in the taskbar of **Windows**, if not click on the **Start** button and search for 'Drive'.



STEP 4

Select folders you want to backup, followed by **Next**; you can choose other locations via the **Folder Location** box at the top. Click **Done** when you're finished. **Drive** will now be located in the **Quick Access** area of **Explorer**. Dump anything in there to backup to **Drive** or right-click > **Google Drive** > **Share** to share a folder with others.





How to Use Gmail

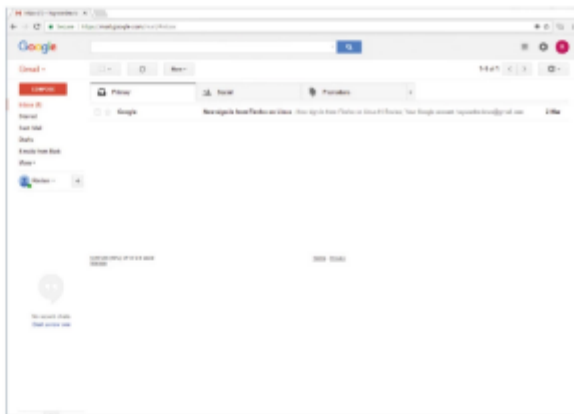
Gmail is probably the most popular of the cloud, web-based email services available today. In its time it has implemented some groundbreaking features, making the interface easy to navigate, use and read.

USING GMAIL

Here's a guide to all you need to know about starting to use Gmail; and maybe a few things you didn't know that it's capable of too.

STEP 1

Start by heading over to www.mail.google.com and signing into your Google account. The first time user will see an introduction email from the Gmail team and a notification asking you if you want to enable desktop notifications for new, incoming email. It's a handy feature to use, so click the link provided.



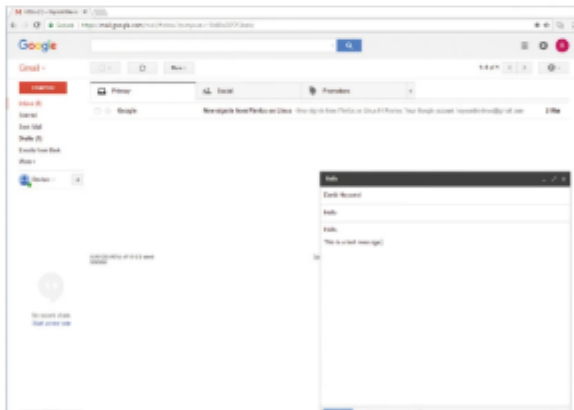
STEP 3

Any replies you get will appear in your Primary email tab. Note the number next to the reply, this indicates the number of replies in the email conversation. Just click on the message, followed by Reply, to continue the email thread.



STEP 2

To send an email to someone simply click on the Compose button and enter their email address into the 'To:' section of the New Message box. Enter a Subject title for the email and in the main box enter the content of the message. Click on Send when you're ready to send the email.



STEP 4

The default layout of Gmail groups categories together: Primary, Social and Promotions. If you want to change the layout, click on: the cog > Settings > Inbox. In the Categories section you can add or remove any of the labelled categories by ticking or unticking the relevant boxes.





ADDING A SIGNATURE

Adding a signature is an excellent way to allow others to contact you, get more business and look more professional. Here's how to add one to Gmail.

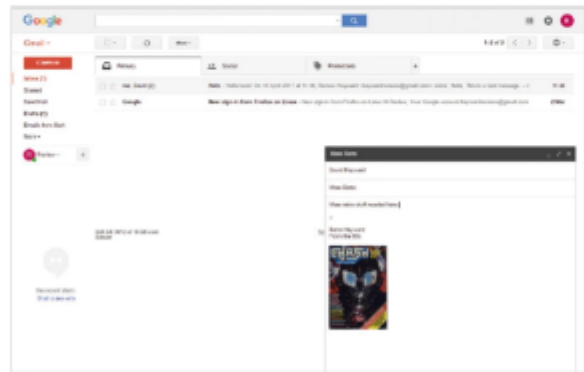
STEP 1

Enter the Settings section again, via the cog (top right), then Settings. In the General tab scroll down to the Signature section. In the text box provided you can type in your contact details, such as phone number, business address and so on. You can even change colours, fonts and add a company logo as an image if you want to.



STEP 2

Scroll down to the bottom of the General tab and click the Save Changes button. Now when you click on Compose, to create a new email, your signature will appear at the bottom of the message.

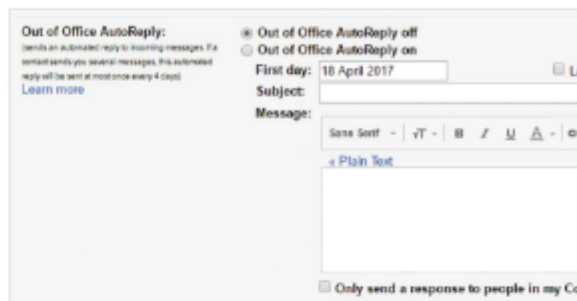


OTHER USEFUL SETTINGS

There are quite a lot of settings to be found within Gmail. We've looked at some of them previously but here are some more useful day-to-day options.

STEP 1

Within the General tab again, scroll to the bottom of the page and you'll notice the Out of Office Auto-reply function. Here you can, obviously, set a first and last day timed auto-reply to anyone who tries to email your address during your absence.



STEP 3

If you want to manage more than one account, and you don't want to constantly swap accounts, enter the Settings and click on the Accounts and Import tab. In here you can check emails from other accounts, send emails as different Google accounts and even import emails and contacts from other email providers, such as Yahoo.



STEP 2

Labels are a great way to sort and store your emails. You can easily create Labels by expanding the options to the left of the main Gmail interface and use Create New Label. You can also click on the Manage Labels option to show or hide, edit or nest current Labels under other Labels.



STEP 4

Sadly abusive or negative emails are a fact of life. However, you can opt to block certain emails by entering the Settings > Filters and Blocked Addresses section. Filtering though isn't just about blocking unwanted contacts. With filters, you can opt to auto-move any incoming emails to certain Labels based on your filter rules.





How to Use Calendar

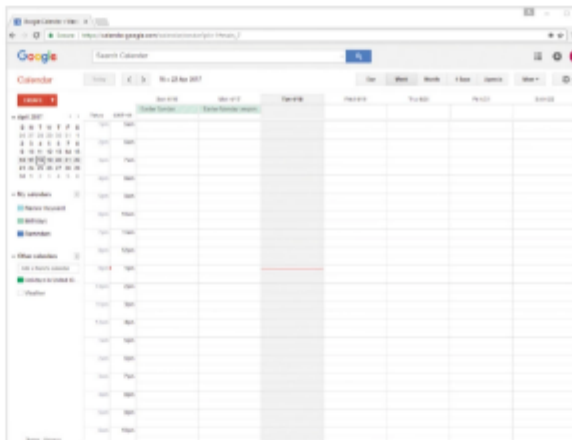
Google Calendar is a great cloud based organisational service. With it you can keep track of your own appointments and events, as well as for other members of your family or your co-workers; and as with the other Google cloud apps, it's easy to use.

CREATING EVENTS

Let's start by creating a basic event and setting up a Gmail reminder for it. We can then work through adding others to the event as well as attachments.

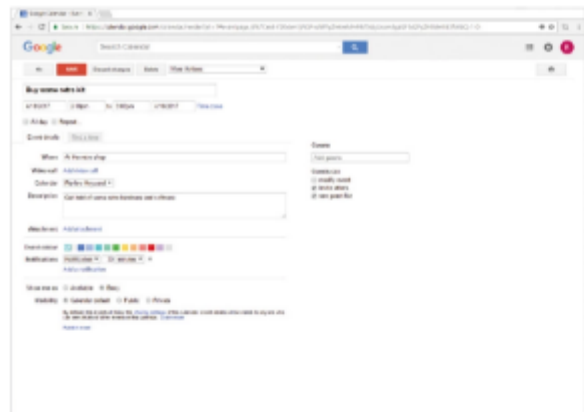
STEP 1

Open up Google Calendar by browsing to www.calendar.google.com. From there the default view will be Weekly, which can be altered by clicking on one of the options along the top: Day, Month and 4 Days. The Agenda option splits the view into upcoming events.



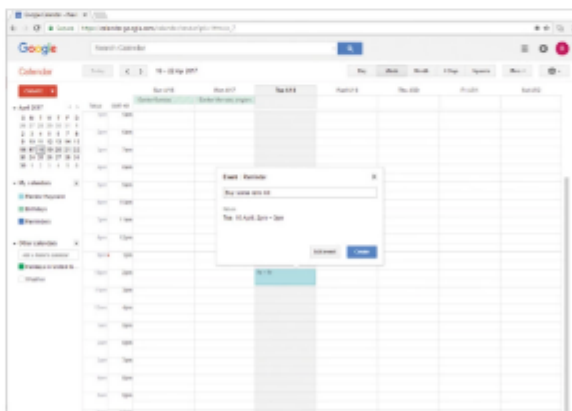
STEP 3

When you have the basic Event set up and named, click on the Create button to enable the event in the Calendar timeline. Double-click the event in the timeline and you can further fine-tune the timings and enter such details as where the event will take place, a description of it and colour coding.



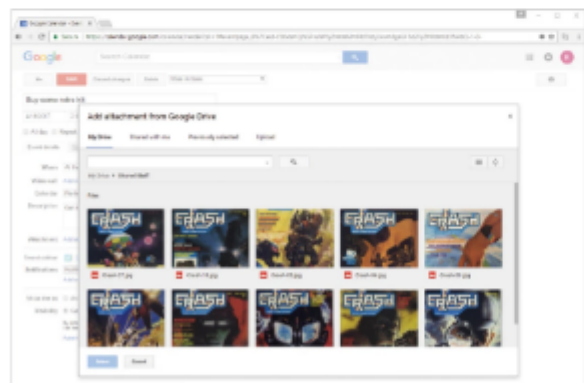
STEP 2

Left-click anywhere in Calendar to create an event. The Event box will pop-up, allowing you to enter a name for the event, and depending on which day and time you clicked, the timings for the it too. Click on the Reminder tab and you can set up when an email reminder will be sent to you for the event.



STEP 4

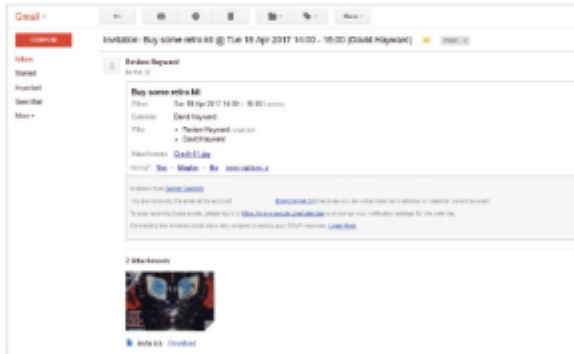
In the event's settings, you can include other participants by entering their email into the Guests text box. Adding additional files to an event, such as an agenda or menu, can be done by clicking on the Add Attachment link in the Attachment section. It defaults to Drive for attachments but you can upload from your device or computer too.





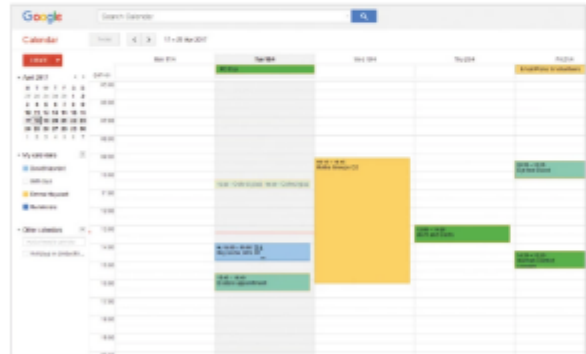
STEP 5

When you have fine-tuned the event, click on the Save button; if you've added any participants you'll be prompted to send them an invitation via Gmail. The email the participant receives details the event's particulars, adds an option to say whether they're going or not and includes the attachment.



STEP 8

Your Calendar timeline will now be populated with your own Events, as well as those of your family or co-workers. Depending on the level of permissions and access the other person granted you, you'll also be able to add collaborative events across all the shared calendar timelines.



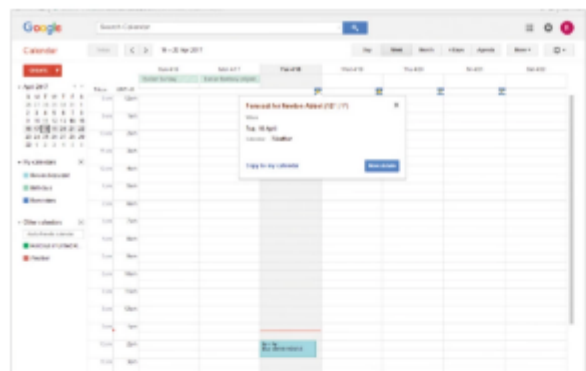
STEP 6

You can add family members and co-worker's calendars to your own view, allowing them to see yours in return and adding any shared events. Under the Other Calendars options, enter the other person's email address. This will launch a Send Request message to their Gmail account. You can customise the message or just click Send Request to complete the action.



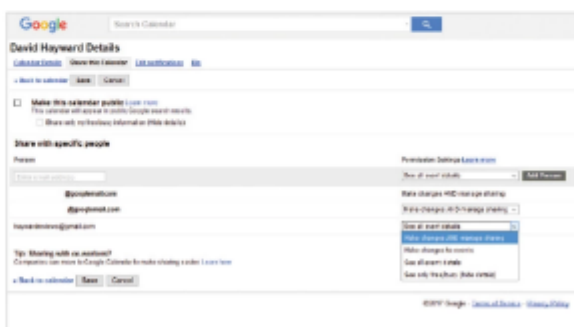
STEP 9

When arranging events for mobile workers it's always handy to see what the weather forecast will be like on the day of the event in question. Click on the cog > Settings and scroll down to Location. Enter your location, or the location of the event, and below that click either °C or °F for the Show Weather option.



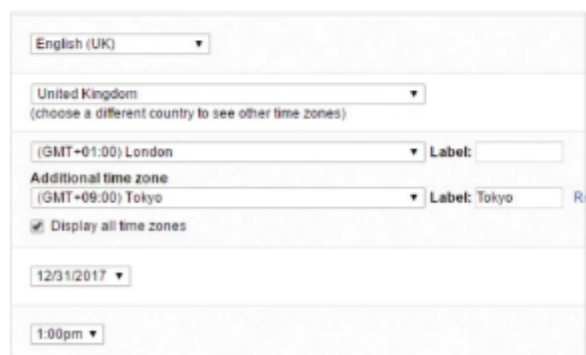
STEP 7

The other Calendar user will receive a link to click if they want to grant you access to their Calendar. This will launch a new Calendar window on their computer, detailing the types of access the original Calendar request sender will have to their Calendar timeline. The other user can click Save to accept the additional user to their Calendar.



STEP 10

When arranging an event with someone on the other side of the world, it's customary to include their time zone to avoid a video call at 2am. In the Settings, next to Your Current Time Zone, click on the Show Additional Time Zones to add the other localised time to your calendar event.





How to Use Docs

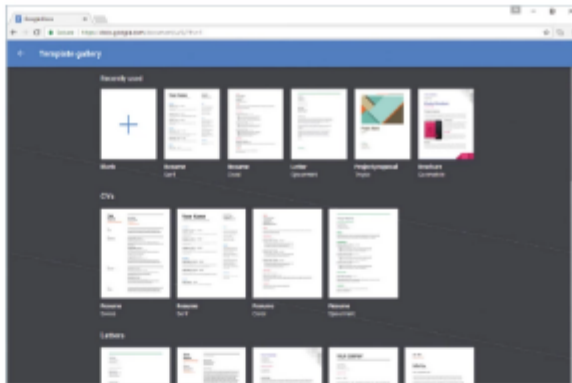
Google Docs is a great cloud resource for creating and sharing files with friends, family and co-workers around the world. As a cloud service, it's considered as one of the best that's freely available.

USING GOOGLE DOCS

We've briefly looked at some of the features of Google Docs, so let's look at how to getting it working for you, both at home or at work.

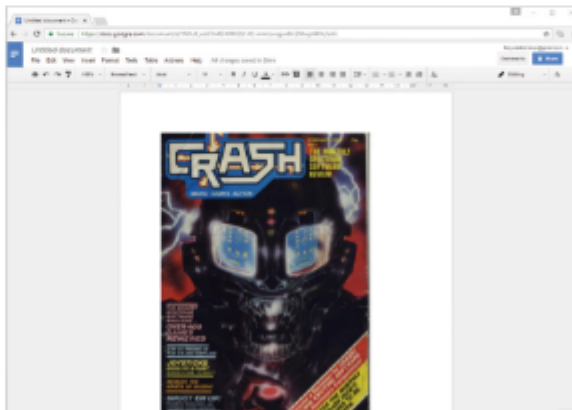
STEP 1

Open up Google Docs by navigating to www.docs.google.com. The default view displays the Template Gallery, and an option to create a new, Blank document. You can expand the Template Gallery by clicking on the up and down arrows next to the words Template Gallery. CVs, Letters, Work and Educational type documents are available to edit and use.



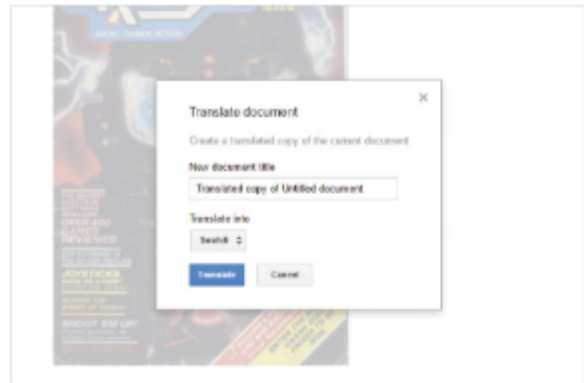
STEP 2

Clicking on a Blank document displays a familiar-looking word processing environment. You can change the formatting, fonts, add hyperlinks, insert graphs, charts, images and even create tables. Images used can be loaded from your Google Drive folders or from your local device or computer.



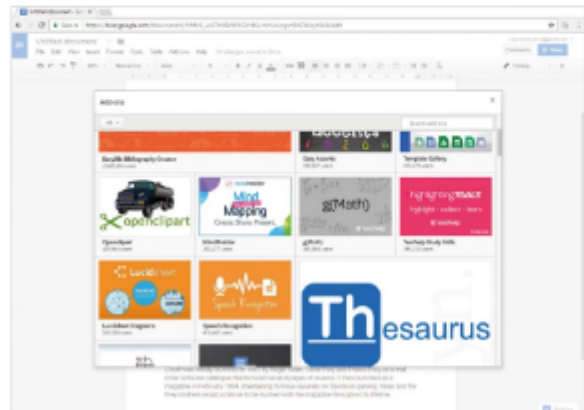
STEP 3

Along the top menu are numerous options, many of which are available in fully comprehensive word processors, such as Microsoft Word. Google Docs though adds a few extras in there. Clicking on Tools > Translate Document, for example, uses Google cloud-based Translate feature to convert your text to various languages.



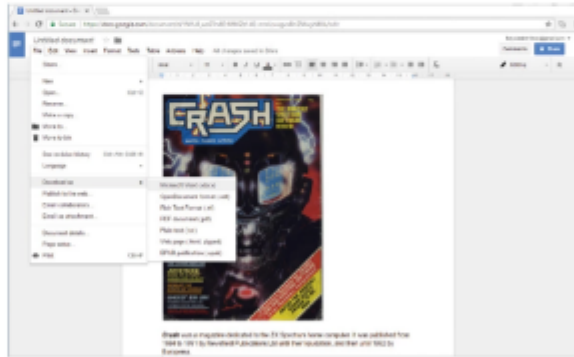
STEP 4

Furthermore, clicking on the Add-ons option opens up a new window whereby you can include a huge range of added extras to help make Docs a little more feature-rich. There's clip art, Mathematics add-ons, a calculator function, music notation, diagram drawing add-ons and many more.



**STEP 5**

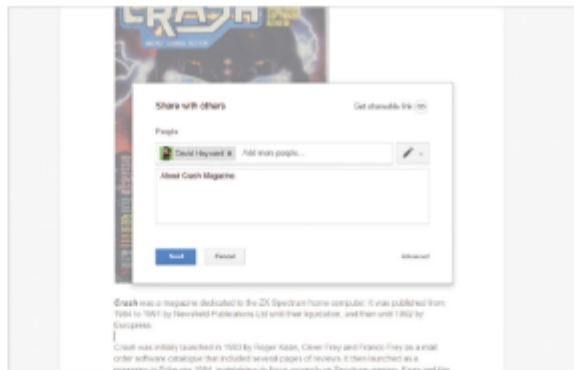
Once you've finished your document, you can download it as any of the popular file formats: Microsoft Docx, OpenDocument odt, Adobe PDF or just as a Rich Text document. You can also publish it as a web page or email to others, all from the File option in the top menu bar.

**STEP 8**

The editing of an online document is helped greatly thanks to the Editing, Suggesting and Viewing options found under the pen icon in the top right of the Docs toolbar. Using the Suggesting option will allow collaborators to remark on any changes made in the document.

**STEP 6**

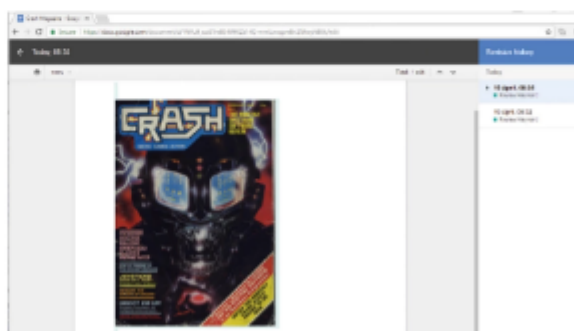
Sharing the work with others for viewing or collaboration can be done via the File menu, and the Share option. Clicking this will ask you to save your document, if you haven't already, and add other's email addresses in the same way as you'd share files and folders in Google Drive.

**STEP 9**

Using Tools > Explore or clicking on the star icon in the bottom right of the screen, will launch the Explore feature. Explore allows you research elements connected with the document you're writing, as well as performing a Google search. This allows you to include relevant data and even add images.

**STEP 7**

The other collaborators will receive an email with a link that takes them to the shared document. From there, they are able to edit and add content and review any added content by the other collaborators. By clicking File > See Revision History, you can view all the changes made, with handy colour coding for each collaborator.

**STEP 10**

If you want to directly include a collaborator in any of the comments you make for the document, you can do so by opening the comment, by moving the mouse to the left of the document's 'paper' and clicking the Add a Comment button, and entering an '@' symbol followed by their Google account.





How to Use Google Photos

Google has tried to take the best aspects of other social media imaging platforms and combine them into its Photo cloud repository. The service uses image analysis technology to group similar photos and videos, making them easier to view, share and edit.

USING PHOTOS

It's not just about sharing images though. Google Photos is a great cloud backup service for all your devices. Plus there's a lot more to discover.

STEP 1

Google Photos is available for a desktop computer at www.photos.google.com, as well as available via the Google Play Store and Apple App Store. The apps work differently. Instead of uploading thousands of your photos, they provide previews so the device's memory isn't used up completely with images and videos.



STEP 2

The default web page view takes you directly to the Photos section, where you can start to upload from either your mobile device or by dragging and dropping directly into the main section of Photos. You can also click the Upload link in the top right to use your OS File Manager to choose the photos.



STEP 3

You can create Albums, Shared Albums, Animations and Collages from within the Create link in the top right of the Photos interface. To begin with, click on Create followed by Album. This will launch a new page that you can drag and drop your photos into. You'll have two choices when uploading, High Quality and Original.

Upload size

Choose how you want to upload photos & videos. Your preference is saved in settings. [Get help deciding](#)

- High quality (free unlimited storage)**
Great visual quality at reduced file size
- Original (10.2 GB storage left)**
Full resolution that counts against your quota

STEP 4

The High Quality option will resize any image to 16 Megapixels, 24 x 16 inches, and any video will be resized to HD 1080p. This compresses the images, effectively not taking up any space in your Google account and offering you unlimited space. Original Quality will keep the image's resolution and take up space in your Google account's 15GB storage.

Choose the upload size of your photos and videos

You can change the quality of your photos and videos to suit your preferences, or to free up storage space in your Google Drive.

1. Open photos.google.com/settings
2. Select high quality or original quality for future uploads.

High quality

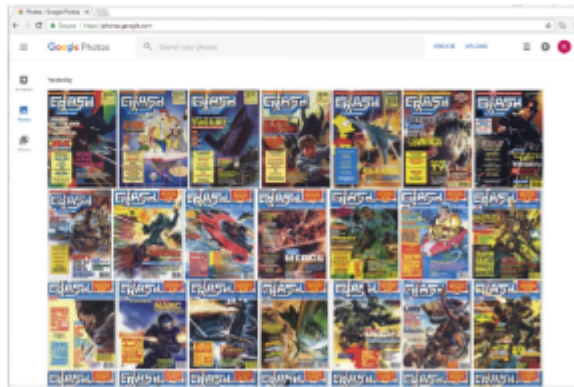
- **Unlimited free storage**
- Photos are compressed to save space. If a photo is larger than 16 MP it will be resized to 16 MP.
- You can print good quality 16 MP photos in sizes up to 24 inches x 16 inches.
- Videos higher than 1080p will be resized to high-definition 1080p. A video with 1080p or less will look close to the original.

Original quality

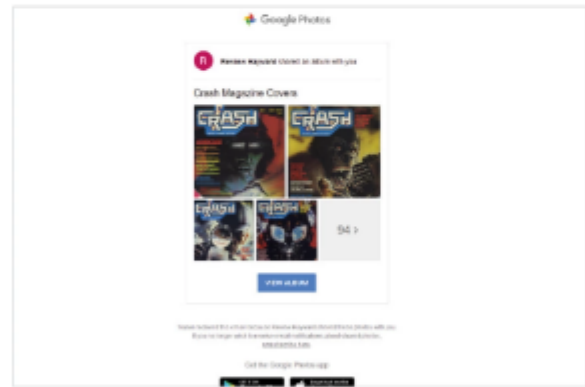
- **Limited free storage** that uses storage in your Google account. Check your storage here. If you go over this limit, learn how to buy storage.
- If you have a Pixel phone, you'll get free unlimited storage at original quality. You won't be able to use high

**STEP 5**

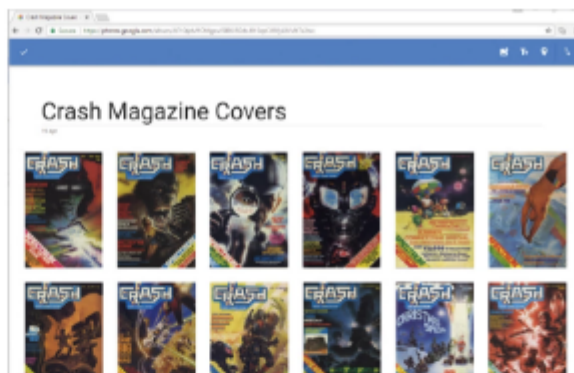
Most users opt for the High Quality choice, as many images are now well over 16MP. When you've made your choice, click Continue to upload the images. Once the images are uploaded they will be displayed in the main Photos area.

**STEP 8**

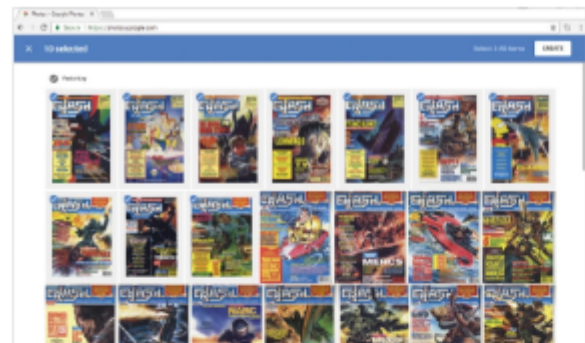
When you've added all the people you want to share the album with, click on the blue-coloured arrow icon in the bottom right of the pop-up window to automatically generate an email that will provide a link for the other person to follow to the shared album.

**STEP 6**

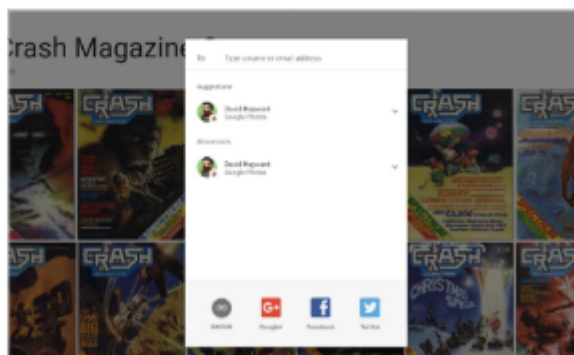
Click on Albums from the sidebar and you'll notice the new Album you uploaded the images into. Click this and you can name the Album using the text box above the contents. You can move individual images around and add Text boxes between sections of the images. Click the tick in the top left when you're done.

**STEP 9**

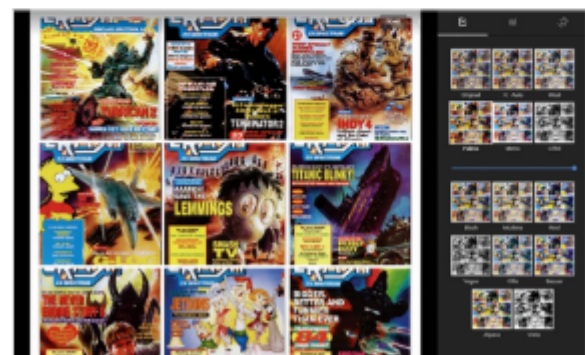
Using the Create option again, select Animation. This will open the uploaded images, allowing you to choose up to fifty images from the collection. Left-click each image or hold Shift to select multiple images. When you've selected the images, click on the Create button. Photos will create a slideshow animation based on the selected photos.

**STEP 7**

You can now share the new album by hovering over the album's image and clicking on the three vertical dots that appear in the top right corner, followed by Share Album. This works very much in the same way as the other Google cloud apps, in that you can enter a user's email address and add a message.

**STEP 10**

Again, using the Create option, select Collage. You can choose up to nine images from your uploaded content to create a Collage. As before, left-click each image, using Shift to select multiple images at once. When you're ready, click Create. You can click the pen icon to edit the image colours and brightness levels.





All About Google Stadia

Google's announcement at the 2019 Gamers Development Conference regarding its newest project has certainly shaken up the world of technology. Will it change how we play games?



What is Google Stadia?

Stadia is Google's future vision of gaming, where gaming can be conducted from a single place, on virtually any hardware, without the need for eye-wateringly expensive consoles or monster PC gaming rigs.

The current scenario follows: Imagine you're watching a YouTube gaming channel, with the presenter playing the latest title – let's say Assassin's Creed. You like what you see, and you want to give the game a go. With Stadia, there will be a new button implemented within YouTube that, once pressed, will begin to stream the game to the hardware you're currently using.

This of course means that the actual 'grunt', the graphical and processing power needed to run a high-end, triple-A rated game, will take place on Google's servers; in the cloud. This eliminates the need for you



to own a £1000+ gaming system or console in the living room, as you'll be able to play, or more accurately, stream the game direct to your TV via relatively simplistic hardware. So with the game running directly from one of Google's data centres, you won't need hardware accelerated elements. Which means you could, in theory at the moment, play it from any device that's capable of connecting to the Internet.

This opens up a whole new gaming experience as, potentially at least, it could mean that any smartTV would possibly be capable of playing said game. And since a run-of-the-mill smartTV isn't particularly powerful, in terms of processing power, it also means that the likes of tablets, phones, and even a Raspberry Pi, could, maybe, be turned into fully-blown gaming system that would put a PS4 to shame.

Google are stating that Stadia will be able to get you from the press of the Play Now button, and into the game in as little as five seconds. And the company also states that it'll be easy to seamlessly move the gaming

Stadia Official Specs

- Custom 2.7GHz hyper-threaded x86 CPU with AVX2 SIMD and 9.5MB L2+L3 cache
- Custom AMD GPU with HBM2 memory and 56 compute units, capable of 10.7 teraflops
- 16GB of RAM with up to 484GB/s of performance
- SSD cloud storage



How Stadia Works

Google Stadia is a hardware free game streaming service that will enable players to play a catalogue of game titles on a large variety of devices. All you will need to play is a joypad, a screen and an Internet connection.

Stadia will allow play on existing desktops/laptops computers, Smart TVs, tablets and smartphones. Play is enabled via the Stadia controller that may indeed resemble a traditional joypad, yet is much more than that. Unique features exclusive to the joypad, include the ability to capture and share your gaming footage directly to YouTube.

So basically get your device online, connect your joypad and press play, that's it!

experience from one device to another, taking over from where you left off.

As well as the streaming technology employed here, Google is also looking to include its own Stadia controller. This will be a unique controller, much in the same design fashion as a traditional Xbox controller, but with some added extras. The controller will be capable of connecting directly, via Wi-Fi, to the game that's being streamed from the Google data centre and identifying which screen/device it is you're viewing, linking it with the game session that's running in the cloud. This setup ensures that you'll be getting the best possible experience, without the unnecessary lag associated with other controllers; where there's delays in communications between console/PC, game, and session.

There's also two new, and important, buttons to the Stadia Controller. The Capture button will be able to save and share your gaming session back out to YouTube, and the Google Assist button allows players to access the controller's built-in microphone to get help from the assistant with in-game features.

Google's Data Centres

The technological driving force behind Stadia is the Google Data centre network. The Stadia platform is built on top the already existing supercomputer clusters, spread around the world and linked with high-speed optical fibre and undersea cables to the 7,500-plus edge node locations.

The edge nodes are spread throughout the world, and the more of them there are, the likelihood of one being closer to you is greatly enhanced. And,

as you're likely to be closer to one these edge nodes, that means the ping – the amount of time taken for a digital packet to be sent and received to and from your device to the edge node – will be significantly lower, resulting in faster access and a better, almost seamless gaming experience.

This increased performance from Google's edge nodes has an at-launch specification of up to 4K, 60fps, HDR and surround sound. Pretty impressive considering that level of specification is hard enough to get right with a device that's physically connected to your TV. These edge nodes are essentially a global cache for the Google infrastructure, allowing Internet service providers the ability to deploy Google-supplied servers from inside the ISP's own network, boosting the connectivity of Google's services from directly within the provider you're connected to.

As for hardware, Google's infrastructure runs to an estimated one million-plus servers. Each of these servers, specifically the ones that going to be dedicated to the Stadia project and streaming, are made of a cluster of 2.7GHz custom x86 processors, with each having access to 16GB of memory, and L2 and L3 caches of 9.5MB. There's also a new, custom GPU involved, from AMD, and while both Google and AMD are being relatively quiet about the GPU specs, we do know that each GPU will be capable of 10.7 teraflops of power, with 56 compute units and around 8GB – 16GB of HBM2 memory. Now bear in mind that's just a single server.

The entire Stadia network will be made up of thousands of these servers, all communicating with one another, and sharing their resources across the whole. Considering a single server is already a PS4 beater, and will happily put a powerful gaming PC through its paces, there's certainly enough resources for a global gaming network.





Inside Project Stream

Project Stadia is built on the 2018 project Stream, which had Google stream the then latest Assassin's Creed game via the Google Chrome browser.

The project was open a few hundred individuals at the time, testing the backbone of the network, as well as the software behind the streaming. Obviously, these were early days in terms of game streaming directly from a remote server to the browser, although Google aren't the first to do so.



Back in 2016 a game streaming company called Rainway launched an app that allows you to play all your games, regardless of whether they're on Steam, [Battle.NET](#), Origin, or Uplay, via a browser. By using the custom Rainway gaming protocol, the company can stream the games you own to your other hardware no matter what the host operating system is.

And this is all free of charge, and it works extremely well. Project Stream, however, wasn't as big of a success as Google would have you first believe. The major issue with Project Stream was lag, with many of the testers commenting on how poor the connection to the server was, especially when playing a graphically complex game like Assassin's Creed. A lot of the gamers commented on the fact that the game was locked to 30fps, and downscaled to 720p. It's one thing to be able to view a website over your connection to a server, but to play a real-time game, with as much detail involved as the example games used, is something else entirely.

However, Google has obviously learned from its mistakes and the experience it had with Project Stream. For the company to announce Stadia with as much gusto, and bandying words around such as 4k, even 8k, and so on, means that its most likely nailed down the issues it had with Project Stream.

Bandwidth for Gaming

How much bandwidth is needed to stream games is one of the most asked questions to ISPs and game service providers. Back in 2015, the FCC, the Federal Communications Commission, detailed that the absolute minimum connection speed to the Internet in order to play an online 'game' was 1Mbps. While that doesn't sound too bad, bear in mind that the game itself would need to be played in a very low resolution, while no one else is using the line, and there's barely anyone playing the game elsewhere in the world.

For Stadia to work correctly, and in the sort of high-end resolutions that triple-A games require to look as good as they're programmed to, will require a little more bandwidth. Although there's no set bandwidth speed issued by Google as of yet, the previous project, Stream, required an absolute minimum of 25Mbps. In theory, this should get you 1080p gaming at around 60fps of good quality. In reality, Project Stream managed about half that on 25Mbps. And, if you're thinking of playing the latest game via Stadia in 4K, then you're going to need some serious bandwidth.

To be fair, we don't know at present how much bandwidth will be 'ideal'. In most circumstances, you can probably get away with 50 to 75Mbps for a good experience. Aim much higher for better visuals, though.





Stadia Official Controller

The Stadia controller is going to be one of the main access points for the new project, although Google are saying that you'll still be able to use your keyboard, mouse and other controllers. Visually, it looks similar to that of an Xbox controller, but here are some key points worth noting with regards to Google's new piece of hardware:

- A Google Stadia controller can be used to play on non-smart TVs, via Chromecast.
- The Stadia controller connects directly the Stadia service over Wi-Fi - not to the Chromecast/smartTV/ Device function or Bluetooth. The device receives the data from the Stadia service and displays it on your TV.
- A Google Stadia controller is not going to work with every TV setup. You can use any USB controller (Xbox, PlayStation, third party or anything else USB) to play Google Stadia. The only screen needing a workaround for a non-Stadia controller is a non-smart TV: you will need to play on a device with an HDMI output like your laptop and connect that to your old TV.
- The Stadia controller has the standard gamepad functions, plus two new ones: a Share function, which controls things like streaming your game as you play and so on; and the other is a voice-command function that uses Google Assistant technology.
- If you're using the Stadia controller, you can use voice commands to launch games with other players and friends.



Google Infrastructure

While it may not be everyone's cup of tea, we rather enjoy reading about and salivating over the incredible power behind a data centre. Google's data centres are among the biggest on the planet, and combined generate some of the highest processor numbers in supercomputing. But it's not all hardware, here's a collection of some of Google's software side technology:

- **Google Web Server (GWS)** – custom Linux-based Web server that Google uses for its online services.
- **Storage systems: Colossus** – the cluster-level file system that replaced the Google File System.
- **BigTable** – a high performance NoSQL database service for large analytical and operational workloads.
- **Spanner** – a globally-distributed NewSQL database.
- **Google F1** – a distributed, relational database that replaced MySQL.
- **Chubby lock service** – provides coarse-grained locking and reliable, low-volume storage for loosely coupled distributed systems.
- **Programming languages** – C++, Java and Python dominate.

Indexing/search systems:

- **Caffeine** – a continuous indexing system launched in 2010 to replace TeraGoogle.
- **Hummingbird** – major search index algorithm introduced in 2013.
- **Borg** – a cluster manager that runs hundreds of thousands of jobs from thousands of applications across multiple clusters on thousands of machines.

With each Stadia node being capable of creating several hundred virtual machines with which to stream the games. This means that thousands of Stadia-built servers, on top of the Google network, can serve hundreds of thousands of game sessions.

In conclusion is the Stadia going to change the way we play games? Well it wouldn't be the first time Google have changed the face of technology and how we interact with it.



STADIA





Microsoft Cloud Services

Microsoft's involvement with consumer-level cloud services is equally as impressive as that of Google and Apple. Not only does the Redmond company offer all the usual storage, email and sharing services normally associated with cloud computing but it also includes cloud-based versions of Office and other apps.

For the consumer, Microsoft's cloud services are invaluable.



OneDrive

Microsoft's OneDrive is the company's cloud-based storage service for its business and home users. It doesn't offer as much free storage out-of-the-box as Google's offering but the pricing for expansion is quite competitive.

FOUR FAB FEATURES OF ONEDRIVE

OneDrive has some good features on offer to anyone who decides to use it. Here are four of them for you to consider.

FAB FEATURE 1

Although there's only 5GB of storage available, which is still quite a lot for most folks, you can easily upgrade

to 50GB for just £1.99 per month. More than 50GB, is above what the average user will need but you can move up to 1TB of storage for just £5.99 per month.

OneDrive storage plans

5 GB	Free
Basic	50 GB £1.99/month
Personal	1 TB for 1 user £5.99/month
Home	1 TB each for 5 users £7.99/month
Business	1 TB per user See plans

OneDrive + Office 365 plans

Office 365 comes with 1 TB of storage and the full installed Office applications, such as Word, Excel and PowerPoint, on your PC, Mac or iPad.

OneDrive for Business + Office 365 plans

With OneDrive for Business and Office 365, easily manage your work files, share them and collaborate with others from any device.

FAB FEATURE 2

A great feature of OneDrive is the facility that allows you to browse the contents of your desktop PC or laptop.

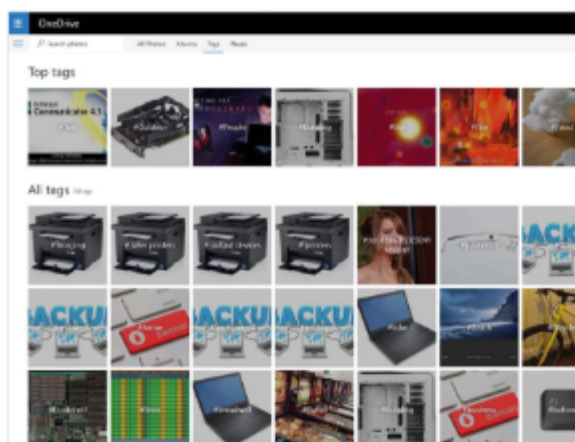
Providing the computer is powered up, connected to the Internet and correctly configured to do so, you can access your hard drives and even network drives, via OneDrive.



FAB FEATURE 3

Photos stored on your OneDrive account can be easily navigated and explored through the All Photos

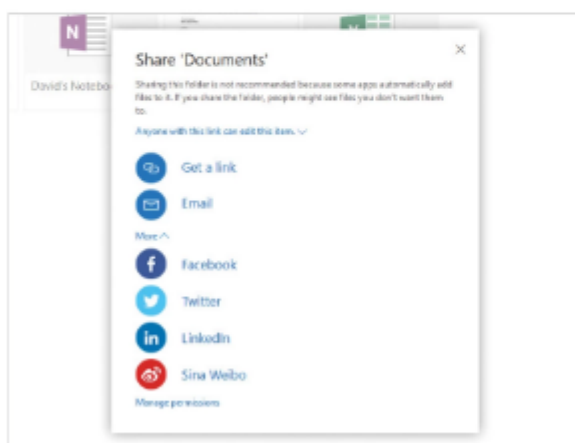
option found in the main OneDrive menu. You can also create Albums and Tags and share them with others.



FAB FEATURE 4

Sharing content from your OneDrive account is exceptionally easy. You can create links to the shared folder,

email the people you're sharing it with or even post the share to any of the popular social media platforms.





Office 365

Office 365 is a hybrid solution, in that it's cloud-based whilst still being installed on your computer; think of it as offering the best of both worlds. Office has come a long way since 1990 and with the integration of cloud features it offers the user an unparalleled productivity portal.

FOUR FAB FEATURES OF OFFICE 365

Microsoft Office is the most used productivity suite in the world and the company strives to continually improve and modernise it for the current generation of users.

FAB FEATURE 1

Microsoft Office 365 is subscription based, which means that the individual apps: Word, Excel,

PowerPoint and so on, are always going to be kept updated to the latest version; this means that there's no concern over compatibility issues with other Office 365 users.

Office 365 Home	Office 365 Personal	Office Home & Student 2016
£79.99 per year	£59.99 per year	£119.99 one-time purchase
Buy now	Buy now	Buy now
Try for free		
Or buy for £7.99 per month	Or buy for £5.99 per month	
Get installed applications plus online storage and more, for up to 5 users.	Get installed applications plus online storage and more, for 1 user.	Get installed applications for 1 PC and more, for 1 user.
<ul style="list-style-type: none"> Fully installed office for PC and Mac 1TB of OneDrive cloud storage (up to up to 1.5 TB) 1 TB of OneDrive cloud storage (up to up to 1.5 TB) 	<ul style="list-style-type: none"> Fully installed office for PC and Mac 1 TB of OneDrive cloud storage 1 TB of OneDrive cloud storage 	<ul style="list-style-type: none"> Fully installed office for PC
Also includes Outlook (PC and Mac) Publisher, Access (PC only)	Also includes Outlook (PC and Mac) Publisher, Access (PC only)	

FAB FEATURE 2

What's more, with this subscription you can also install Office 365 for up to five users in your home, on

desktop PCs or Macs, tablets and phones; and you'll get 1TB of storage with the company's OneDrive cloud service. You can even try it for free for a limited time.

What is Office 365?
Office – even better with an Office 365 subscription.

- Includes the Office 2016 applications
- Install on PC, Mac, tablets, and phones
- Get 1 TB of OneDrive cloud storage
- Plans for individuals and households

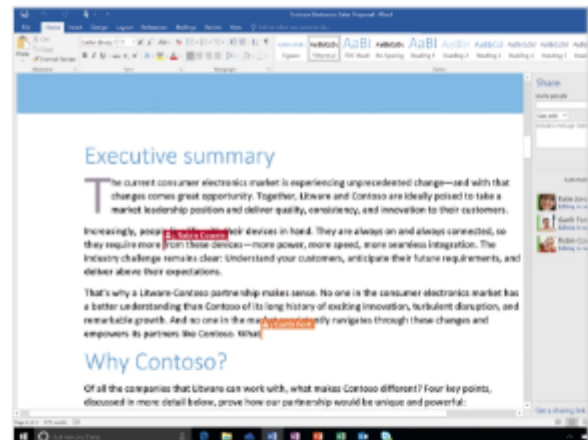
[Try for free](#)

Looking to use Office 365 at work? [Learn more](#)

FAB FEATURE 3

As Office 365 is partly cloud-based, you can set up better collaboration with other users than with previous

Office versions. In Word, Excel or PowerPoint it's possible to have multiple users editing a document at the same time.



FAB FEATURE 4

Collaboration is one of the many benefits of working with a cloud-based service. To be able to have a

number of people working on the same project, maybe around the world, in real-time is singularly impressive. Office 365 takes the collaboration element a step further, allowing you to launch a Skype session from within a working document if needed.





What are Microsoft's Cloud Apps?

Like Google, Microsoft has invested a considerable amount of money bringing its cloud applications to private and small business users, as well as much bigger enterprise clients. OneDrive is the more prominent cloud service that the company offers; however, they have also unleashed their Office apps to the cloud.

OFFICE IN THE CLOUDS

There are quite a lot of cloud services on offer from the Redmond based company but for the sakes of the end, consumer user, these are by far the most utilised.

ONEDRIVE

OneDrive is Microsoft's answer to cloud storage for both consumers and business users alike. The basic plan comes in with a free 5GB of storage available but you can soon expand that to 50GB or 1TB, and all for a fairly reasonable monthly fee.



EXCEL ONLINE

As you would expect, it's not just word processing that Microsoft has exported to its cloud servers. Excel is also available via the Office Online portal and again, using your Microsoft account, you can use a fully functional, modern version of the popular spreadsheet app.



WORD ONLINE

You may not be aware of this, but the world's most used word processor is available as a cloud application. We are of course talking about MS Word. Using the latest version of Word, you can login to your Microsoft account and use the online version in your browser, as you would the desktop version.



POWERPOINT ONLINE

Often ridiculed as the bane of the office meeting, Microsoft's PowerPoint has a bit of a bad reputation. You can't deny though what a powerful and well used resource it actually is. If you don't have a locally installed version, then the company's new cloud-based app will suit you just as well.





ONENOTE ONLINE

Microsoft's OneNote may not be used quite as much by the consumer or home

user as its other Office apps but it's still a remarkably handy tool to have. You can use this digital notebook to share notes with multiple users along with drawings, screen clippings and audio commentaries.



CALENDAR

MS Calendar Online is a fairly self-explanatory app. If you use the desktop version with Windows 8.1 or 10, then

you'll be able to get to all your appointments and events via the online, cloud app version.



SWAY

Microsoft Sway is described as a digital storytelling app. It's designed for creating presentations, in an easier to view format than that of PowerPoint; in fact, think of it as an alternative to PowerPoint. There are lots of features and it's certainly worth looking into.



DOCS.COM

Launched in 2015, Microsoft [Docs.com](https://www.docs.com) is the company's answer to Google Docs. A cloud service that works as a documents sharing platform, where users can upload Office based content, and even Minecraft content to their [Docs.com](https://www.docs.com) profiles.



MAIL

Microsoft has had some form of email client since it's early Windows 3.11 days. Outlook replaced MS Mail in later life and although the company has readopted the Mail name once more, it is still essentially Outlook. Mail is the company's cloud-based app that interacts with its cloud based email solution.



OFFICE 365

Office 365 is a slightly different look at a cloud-based service. It's a locally installed suite of Office programs but it's sold through on a subscription basis and updates itself as long as you've paid for the subscription. It's designed to interact with Microsoft's cloud services far easier than the traditional desktop Office; in many ways, it's a hybrid cloud service.





How to Use OneDrive

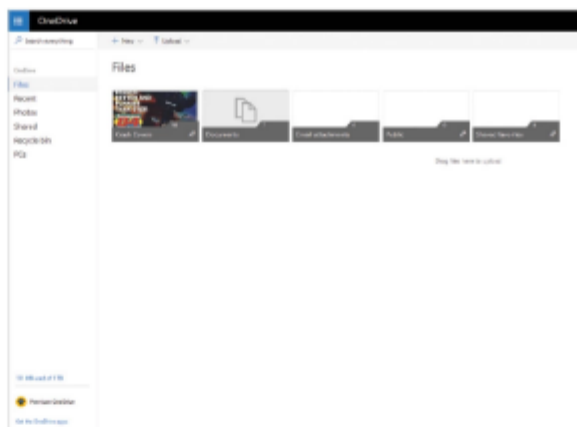
Microsoft's OneDrive may seem like a new concept but it's been available for the last nine years or so; having formally been known as SkyDrive and Windows Live folders. It has seen many upgrades during that time though and is now a far more capable cloud solution.

DO MORE WITH ONEDRIVE

To start using OneDrive you need a Microsoft account. Head on over to www.onedrive.live.com and click the Sign Up For Free button to begin.

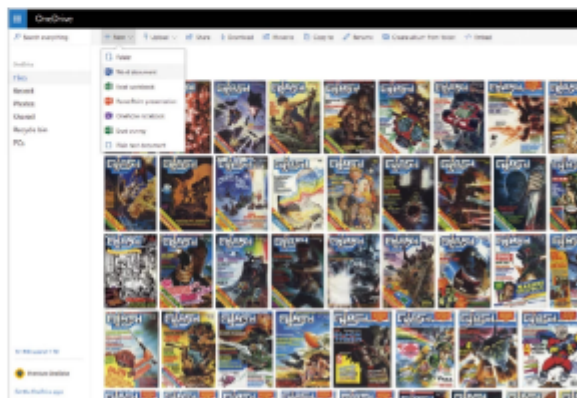
STEP 1

Once you've signed into your OneDrive account you'll be presented with the default Files view. From here you can drag and drop any files and content into your OneDrive window to populate it. You can also click the Upload link at the top of the screen to open your OS File Manger to browse for files or folders.



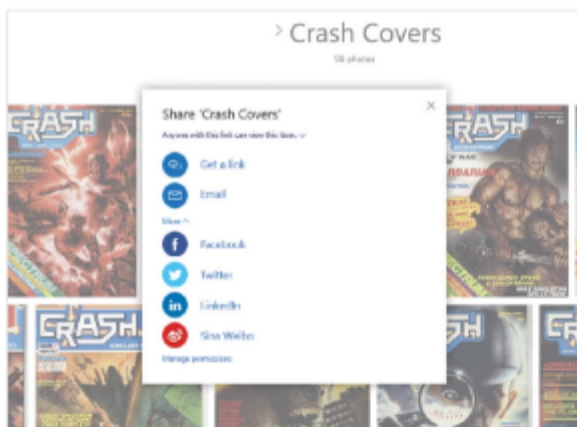
STEP 2

You can create folders within OneDrive by clicking on the New link followed by Folder. You'll then be able to click to enter the new folder and drag files into it, or use the Upload link. You'll also notice that you can create a new Word, Excel, PowerPoint or Plain Text Document, using Office Online.



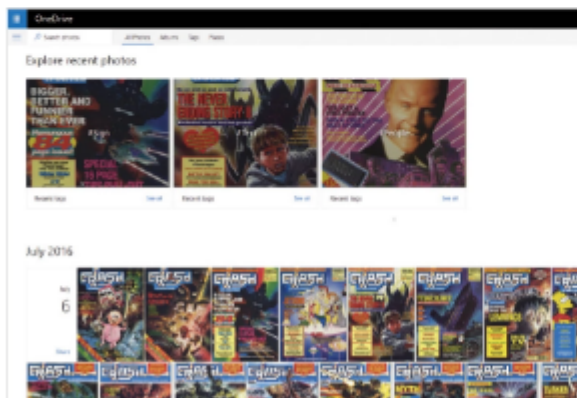
STEP 3

Clicking on the Share link within the new folder will all you to create a link, email or social media post that will enable other people to access and view or edit the contents of the shared folder. You can manage permissions of the other users, as well as retrieve information regarding the contents and set alerts for any edited changes.



STEP 4

The Photos section allows you to view all the uploaded images in your OneDrive account according to date added and by certain tags, such as people, signs or text. This allows you to group and search for any images; handy when you have 1TB of photos to sift through.



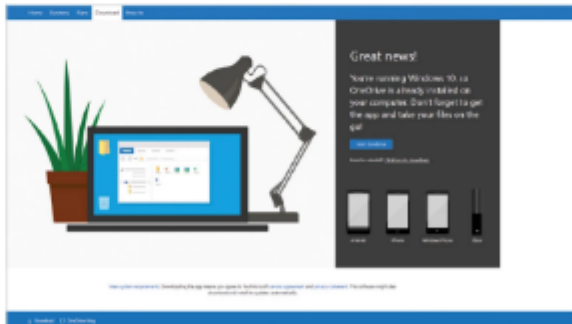


ONEDRIVE DESKTOP

OneDrive is available as a desktop and mobile app. There are some great features on offer, especially with the desktop version.

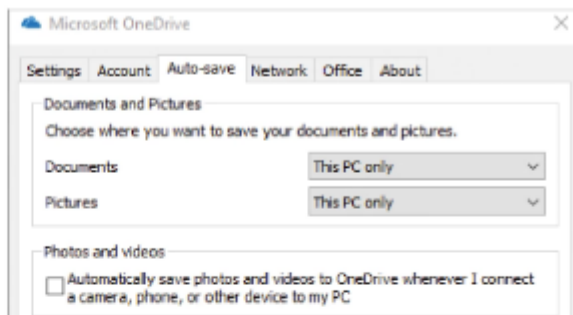
STEP 1

Windows 8.1 and 10 users will automatically have the OneDrive installed with their system; just search for OneDrive after clicking the Windows Start button. Users of earlier Windows versions will need to go to www.onedrive.live.com/about/en-GB/download to get hold of a copy.



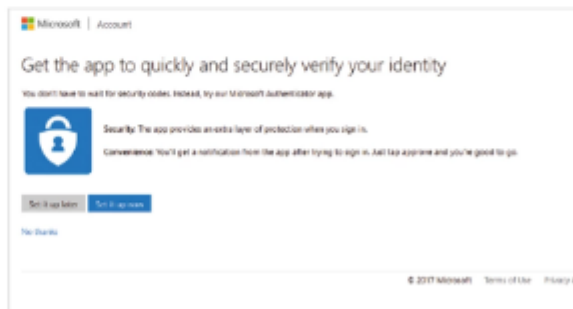
STEP 2

Once installed, OneDrive will automatically set up a folder in your C:\Users\ area, with an icon in the taskbar. Opening the icon will display the amount of storage left on your OneDrive account, which folders you want to automatically backup from your PC to OneDrive, any collaborations with Office 2016/365 and the Fetch feature.



STEP 3

From the Settings tab, under General, within the OneDrive taskbar icon, you'll notice a tick box labelled 'Let me use OneDrive to fetch any of my files on this PC'. Tick this and follow the on-screen instructions to set up the PC and link the security between OneDrive and your computer.



STEP 4

Once you've set your security, return to the web-based version of OneDrive and click on the PCs link in the sidebar. This should open a list of all the computers that have been authenticated and checked by OneDrive. Click on the computer you've just added and you'll be able to browse its hard drives and files.



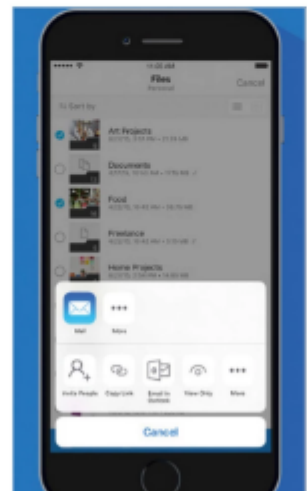
STEP 5

The backup side of the OneDrive desktop app works in much the same way as Google's Drive. All you need to do is copy any files or folders into the OneDrive link in Windows Explorer and they will automatically be uploaded to the OneDrive cloud.



STEP 6

The Android and iOS apps work in the same manner, allowing you to backup any documents, photos and so on, as well as share content with others. You can even edit any existing Office documents with Office Mobile.





How to Use Office 365

Office 365 is the new subscription-based service that Microsoft uses for its productivity suite. Essentially, the apps used within Office 365 are version 2016 but with the subscription model you're constantly updated, have more OneDrive cloud space and other benefits too.

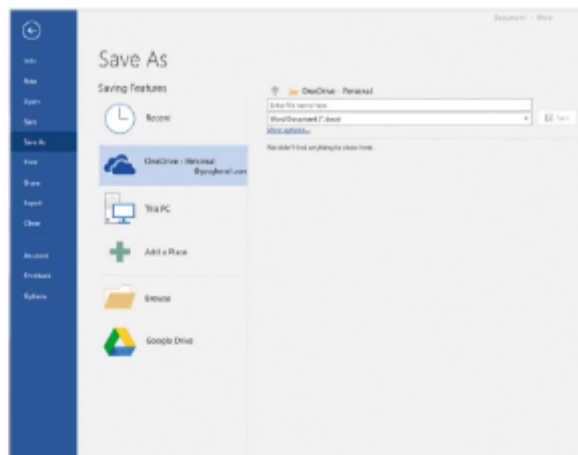
EVERY DAY OFFICE

There are some interesting and clever cloud specific features with Office 365. It's been designed to work seamlessly with online storage and other cloud resources.

STEP 1

As you've purchased a copy of Office 365 you will already be signed in with your Microsoft account. This automatically enables the

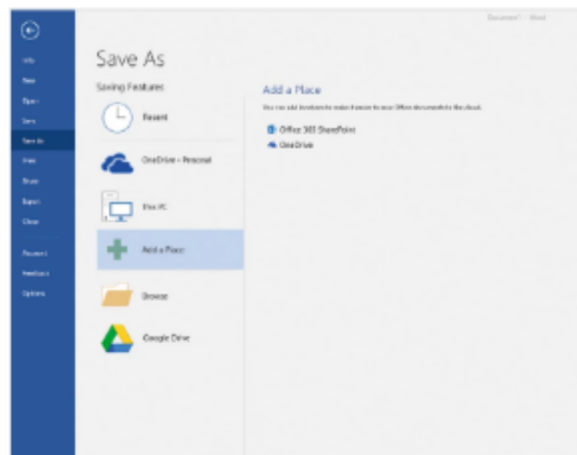
OneDrive interaction with the installed Office apps. So when you click File > Save As, OneDrive will be an option.



STEP 3

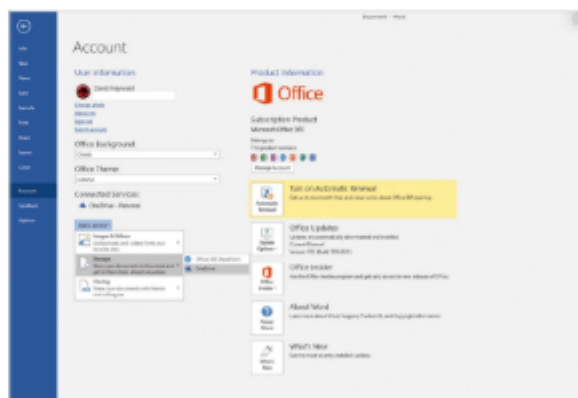
There's also an alternative way to include the OneDrive cloud account if it's not present initially. Click on File > Save As, followed by Add

A Place. Click the OneDrive option and again you'll be able to login to your Microsoft cloud account.



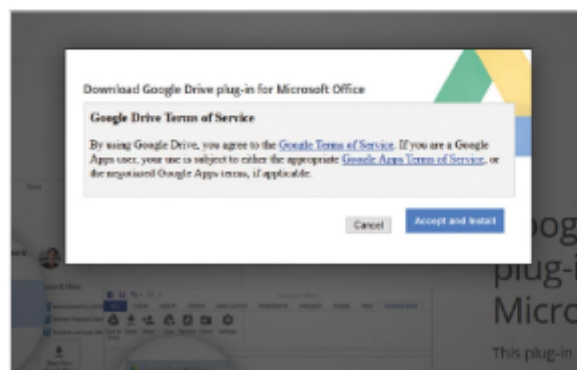
STEP 2

If for some reason Office 365 has failed to connect to your OneDrive cloud account, you can add it by clicking on File > Account, then under the Connected Services option, click the drop-down box labelled Add a Service. Hover over the Storage option and click on OneDrive. This will launch the connection options.



STEP 4

If you want more than one cloud option to save a file to, in particular using Google Drive, there's a handy plug-in that will enable your Google cloud account for Office 365. Start by pointing your browser at www.tools.google.com/dlpage/driveforoffice and clicking the Download button. Then, in the pop-up box, click the Accept and Install button.

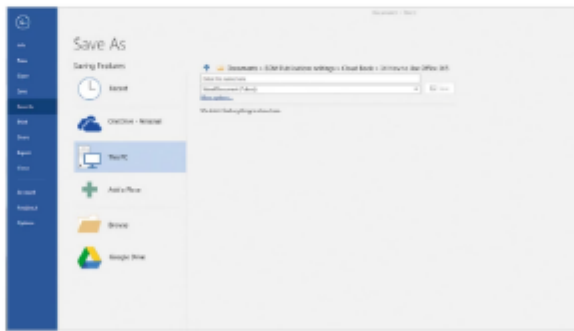




STEP 5

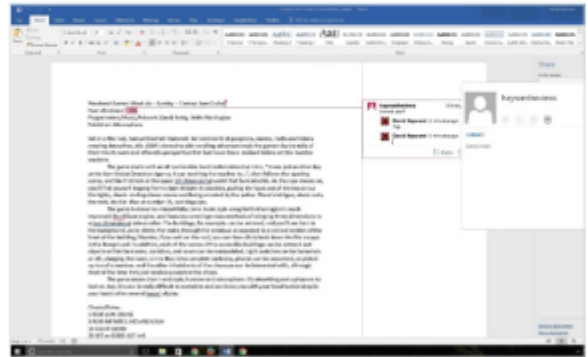
Save the file to your computer, locate with Windows Explorer, make sure all your Office apps are closed and double-click to launch it.

The installation takes just a few seconds and you'll eventually be asked to sign into your Google account. Once done, relaunch an Office 365 app and you'll notice Google Drive added to the save and open locations.



STEP 8

By right-clicking the other collaborators' names in the Sharing section, you're able to send emails, limit their access to the file in question and even launch a Skype session to chat about the document. All these options are available by clicking on the other users within the Share section.



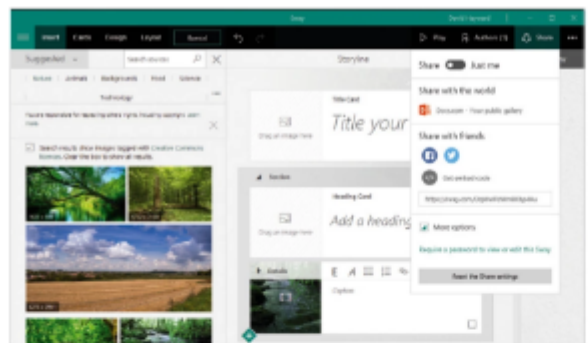
STEP 6

As with its Office Online counterpart, the installed Office 365 apps are able to instantly share a file with other people. You'll notice a Share button in the top right of the Office app, click this and follow the on-screen instructions to start sharing. From there it's just a matter of adding the collaborators' email addresses.



STEP 9

Of course, sharing and collaborations aren't just for the usual Word, Excel and PowerPoint apps. The new app, Sway allows you to create dynamic presentations, or a digital storyboard as Microsoft brands it, and share them to social media platforms or Docs.com. You can do all this from the Share button from the top right-hand corner of Sway.



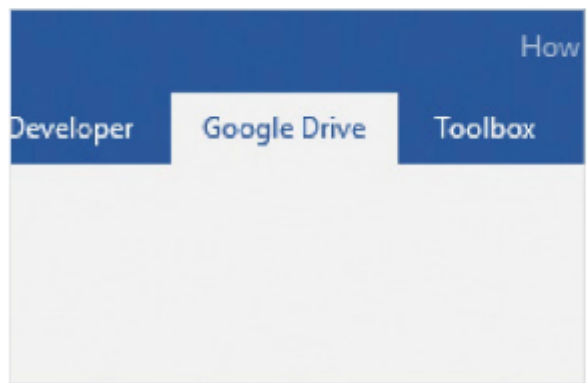
STEP 7

When collaborating with other users, you're actually able to all work on the same document or file at the same time. Changes made from one collaborator to the other, regardless of whether they're using Office Online or installed Office 365, will be instantly updated across all users.



STEP 10

Those who have installed the Google Drive plug-in for Office 365 will notice the inclusion of a new option in the Ribbon bar. The Google Drive ribbon adds options for Save to Drive, Open from Drive, Share with others, and more.





How to Use Office Online

If you're out of the office or away from home and you need to edit an existing Office document or create a new one then Office Online will get you working for free. These versions of Word, Excel, PowerPoint and others are extremely handy, and all you need is a Microsoft account.

OFFICE FOR EVERYONE

Take a moment to sign up for a Microsoft account, then head on over to office.live.com. You'll notice a range of Office icons, click one to get started.

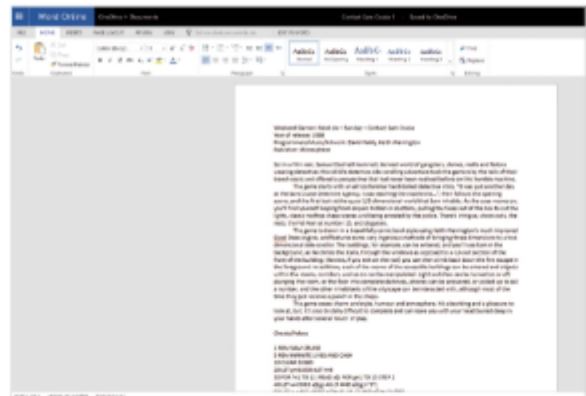
STEP 1

There are ten Office cloud options available from the office.live.com site. The more familiar and well-used Word, Excel and PowerPoint take the first three places, with OneNote, access to your OneDrive account, Mail and so on after. The last option is Docs.com, the Microsoft collaborative portal that's similar to Google Docs.



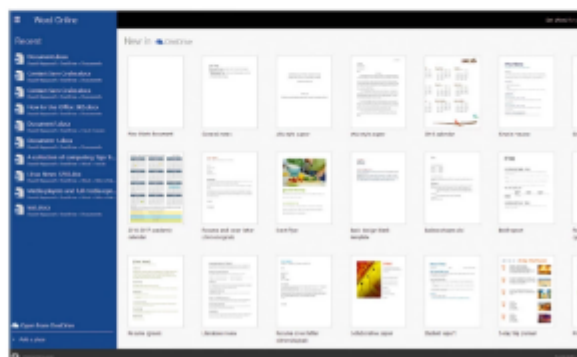
STEP 3

The layout of the individual Office cloud apps is similar to that of the latest version of Office, so you won't need to relearn how to use a particular app. Compatibility is taken care of across older version of Office too, allowing you to load up content from Word 2003 and work with in a .docx format.



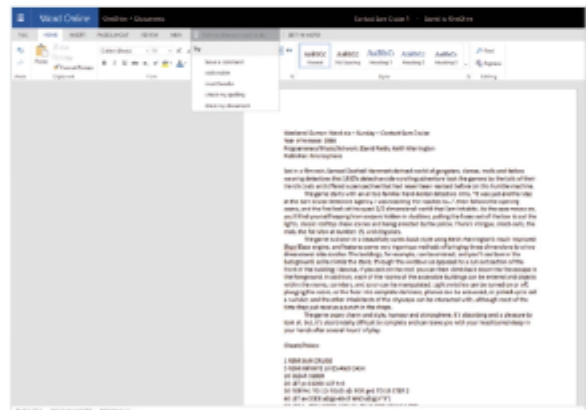
STEP 2

Clicking on each of the Office cloud icons will launch the product, asking you to sign into your Microsoft account and linking the cloud app with your OneDrive account. There are numerous templates to choose from within each of the main Office apps; you can load up one already in your OneDrive account or upload from a local source.



STEP 4

In addition to the usual Ribbon menus, Office Online also incorporates the latest help features from Office 2016 and 365. There's a 'Tell me what you want to do' section in the top menu, which when clicked reveals several suggestions to start you off.





STEP 5

Clicking the 'Edit in Word' link will launch the locally installed version of Office 2016 or 365, so you'll be able to continue working on the file from the desktop installed app, as opposed to the online version of the app. This is handy if the file requires the use of a feature that isn't available with the online version.



STEP 8

All of the files you create within the Office Online cloud apps can be saved to the local system, or a USB stick if you're working off a public computer. You can download and save them as the Office format document they're created in or you can opt to save them as a PDF or an Open Document file, ODT.



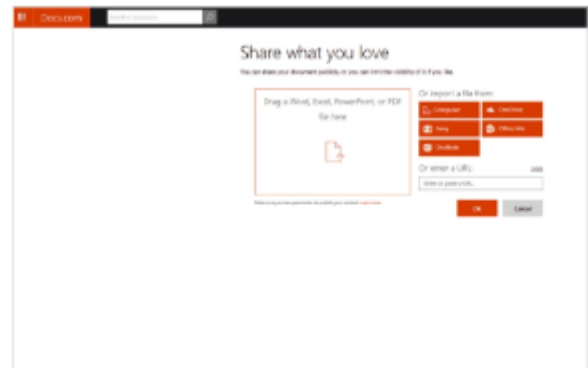
STEP 6

In all the Office Online apps, clicking the box of nine squares in the top left of the app screen will open a quick-launch area where you can access the other cloud apps. This is known as the App Launcher. This way you don't need to keep returning to the main office.live.com page to launch each individual app.



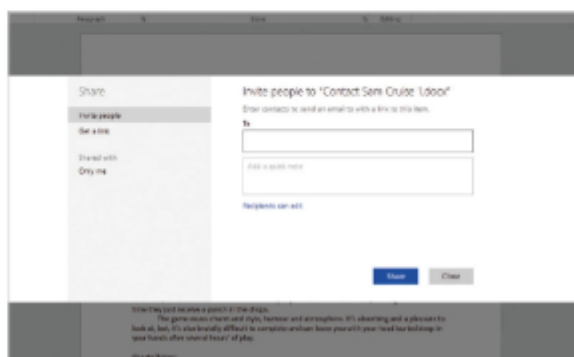
STEP 9

Docs.com is an interesting cloud app from the Office Online suite. Once signed in, you can choose to share content from either your OneDrive account or by uploading it from your computer or device. You can even enter a URL of other shared work that you have in the box provided.



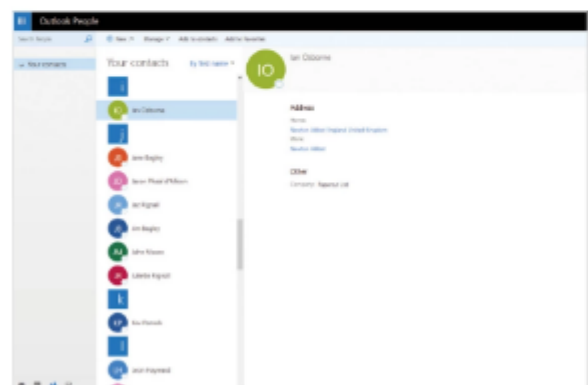
STEP 7

Sharing a file from within the Office Online apps is particularly easy. Just click on the Share button in the top right of the app's interface and you'll be asked to enter the contacts for whom access will be granted. You can also generate a link for the file and alter the permissions of each collaborator.



STEP 10

The People app links to your Microsoft Outlook account and displays your contacts therein. With it you can create new contacts and connect to social networks such as Twitter, Google, LinkedIn, Yahoo and Flickr.







Dropbox Cloud Services

Dropbox is one of the go-to cloud storage services for consumers on the Internet. It's easy to use, easy to manage and lets you instantly share content with anyone who has Internet access.

It's little wonder then that it's so popular, and it has a lot more to offer the home user.



What are Dropbox Cloud Apps?

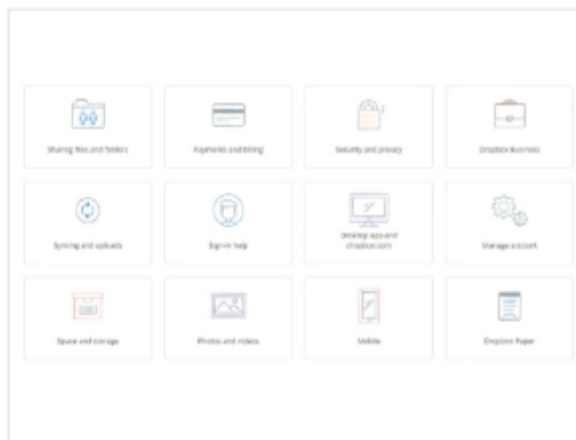
The San Francisco based company, Dropbox, started life back in 2007 as a start-up developed by a couple of MIT students. Since then, and its release to the public in 2009, the company has grown to be one of the most used cloud services in the world.

BOXED CLOUDS

Dropbox has a user base of over 500 million and is worth somewhere in the region of \$10 billion. Thanks to its newly implemented design and ease of use, it's not difficult to see why.

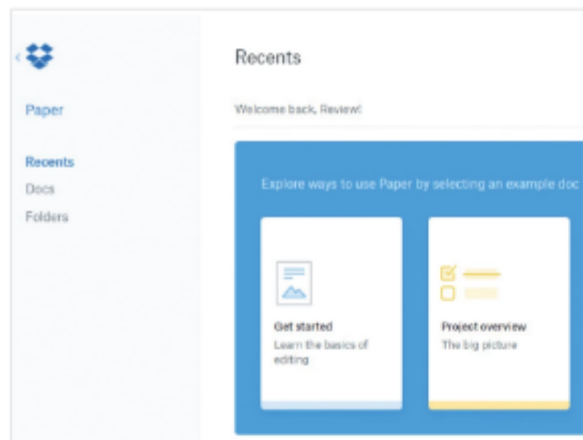
FILES

The most used feature of Dropbox, and its sole purpose, is the cloud storage functionality. You get 2GB free when signing up for an account but through various incentives you're able to gain some more free space, with up to 16GB through referrals.



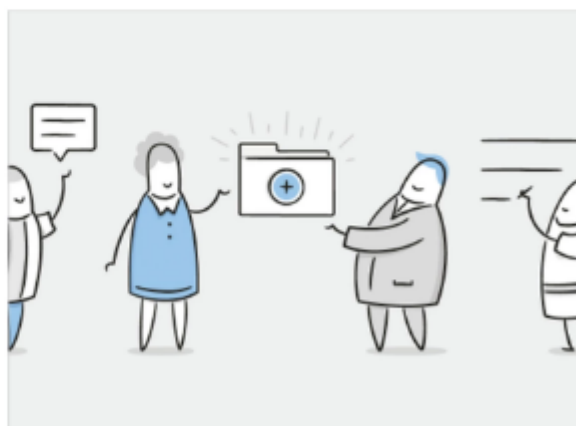
PAPER

Dropbox Paper is where you can go to create collaborative documents. It's designed as a flexible workspace where you can write text, create task lists or write code. You can embed images, audio and video and then share the contents with others.



SHARING

Sharing allows you to create shared files and folders, which you can invite and set up others to access. You can share content, collaborate in a single environment, create groups of team members and organise a shared resource more efficiently.



PHOTOS

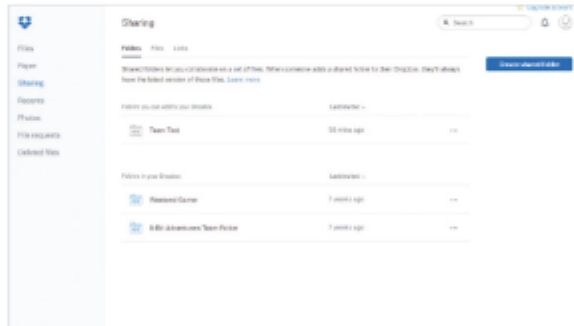
Dropbox Photos creates easy to view albums and timeline entries for any images you've uploaded into your main Dropbox account, even those shared with others. You can browse individual images or by date uploaded and create your own specific albums.





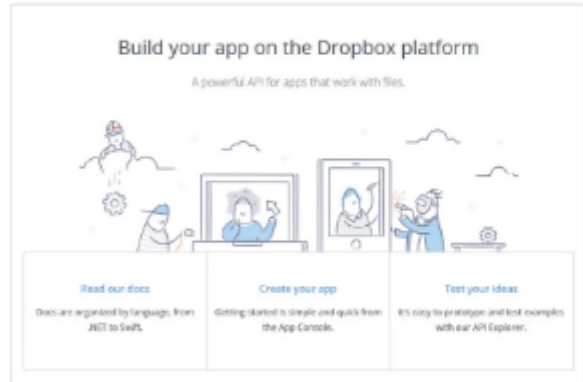
FOLDER SHARING

As with other cloud-based storage services, Dropbox's emphasis on sharing and creating shared folders is the backbone of the business. Considerable work has been done with Dropbox's new interface and controls to make it easy to create shared folders fast.



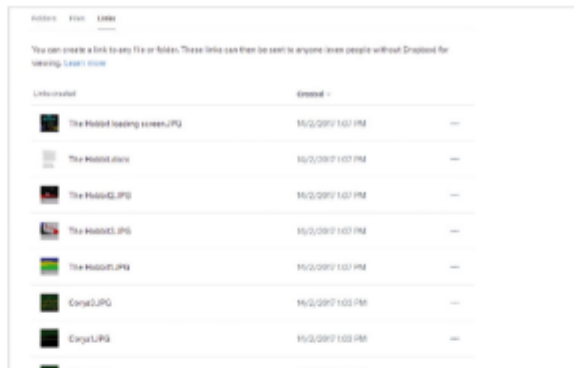
APPS

Aimed at the business user, Dropbox Apps is a service that allows developers to create their apps within the Dropbox platform. A range of programming languages are available, with documentation, covering HTTP, .NET, Java, Javascript, Python and more.



LINKS

Links in Dropbox allows you to create dynamic links to any files or folders within your Dropbox storage and share them with other users, including those who don't have a Dropbox account. This makes it easier to share content outside a project, or to send to friends, family and clients.



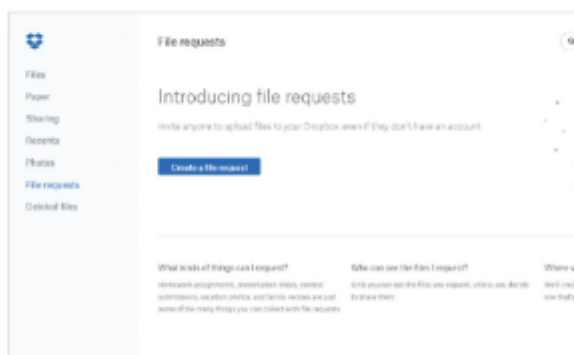
SECURITY

Dropbox uses the latest AES 256-bit, military grade encryption on its storage, as well as SSL to transfer files to and from your computer and devices. The company used to use Amazon's S3 storage system but now maintains its own server hardware.



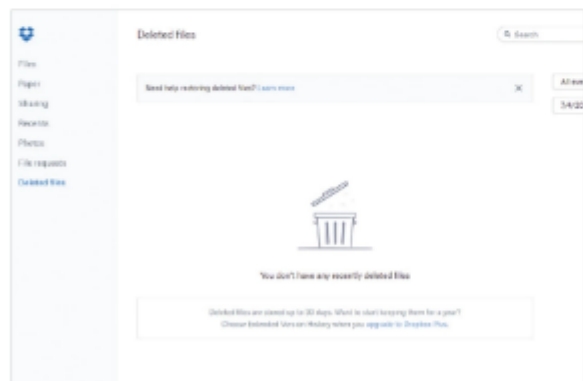
FILE REQUESTS

This is a relatively new feature to Dropbox, one that allows you create invites for other people to upload files to your own Dropbox account; again, even for those who don't have a Dropbox account. Homework assignments from teachers can be sent to students, as well as family photos.



RECOVERY

With Dropbox it's easy to recover any deleted files, up to 30-days old for Basic Plan users. Business users can also recover deleted files from further back and even get an extended version history and more options.





Dropbox Storage

Dropbox Storage, or Files as it's also known, may not offer as much space as the likes of Google Drive but it's has proven itself to be one of the top choices for the home and business user. Pricing is reasonable, with various plans to cover all user types.

FOUR FAB FEATURES OF DROPBOX STORAGE

There are many features to like about Dropbox Storage/Files; here though are four to whet your cloud appetite.

FAB FEATURE 1

You get 2GB for free in the Basic Plan but if you refer others and complete some Dropbox related

tasks, such as following the company on Twitter, you're able to increase that space up to 16GB. The Business Plans are good too, starting at just £10 per month for 2TB of storage. Note that prices can rise and fall though.

Method	Storage Increase
Upgrade your account	1 TB
Upgrade to a Business account	2 TB
Refer friends to Dropbox	16 GB
Get started with Dropbox	250 MB
Follow Dropbox on Twitter	125 MB
Tell us why you love Dropbox	125 MB

FAB FEATURE 3

Stored photos within your Dropbox account can be viewed and categorised according to date or

placed in individual Albums. You can also choose to share any of the images or user created albums and even download them to your computer or device.

FAB FEATURE 2

Version History is an excellent feature of Dropbox and allows you to view what's been going on with

an individual file. You can see when it was last edited and who it was that manipulated the file. This way you can keep an accurate track of any files within a project and team.

File Name	Created
Get Started with Dropbox.pdf	01:40 AM

FAB FEATURE 4

You can also keep track of what's been going on in your shared Dropbox areas through the Events

feature. This will give you a timeline of who's edited, deleted, renamed and manipulated any files or folders, and when it was done.

Action	Date
You added the file 'What's New in Photoshop'	04/20/2015 08:57
You added the file 'What's New in Photoshop.pptx'	04/20/2015 08:57
You added the folder 'What's New in Photoshop'	04/20/2015 08:57
You added the folder 'Introduction to the MSN, News, Egg and News Site'	04/20/2015 08:54
You added the folder 'What's New in Photoshop'	04/20/2015 08:54
You added the file 'Dark-Corridor'	04/20/2015 08:54
You added the file 'Introduction'	04/20/2015 08:54
You added the folder '3D-Scene'	04/20/2015 08:54
You added the file 'Change the News-Layer/Introduction.pptx'	04/20/2015 08:54
You added the file 'Change the News-Layer/Introduction.pptx'	04/20/2015 08:54



Dropbox Sharing

Sharing content with others is an easy process to set up in Dropbox regardless of whether you're using a business account or the free, basic plan. Dropbox has all bases covered when it comes to creating shared files and folders.

FOUR FAB FEATURES OF DROPBOX SHARING

There's a lot more to Sharing than you may first realise. You can organise the company's shared project files, protect sensitive data and work better together.

FAB FEATURE 1

Sharing content with Dropbox is remarkably easy to get up and running. With it you're able to invite others via email, set up access levels and even track any changes made to a document while it's being shared.

Shared folders: Give people edit access to your files

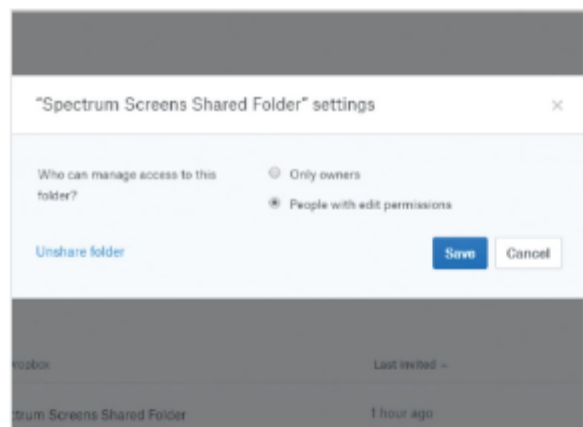
If you give people edit access to a folder in your Dropbox, it becomes a shared folder. Changes to the contents of these shared folders are synced to everyone who has access to the shared folder.

People with edit access can:

- edit files
- comment on files
- and view files

FAB FEATURE 3

Access levels for each shared folder allow you to set some users with Edit privileges, while others may only have a view edit. This helps keep files and folders secure and can prevent any potential file deletions or damage.



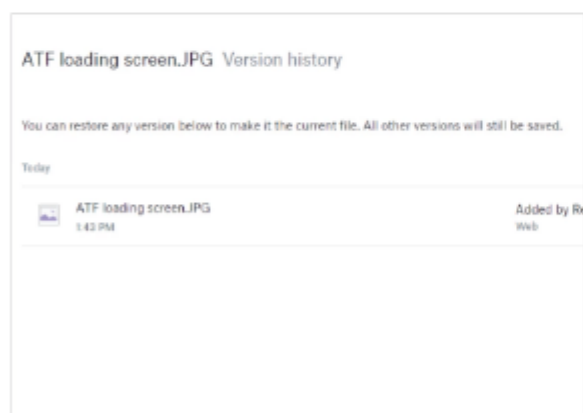
FAB FEATURE 2

Adding comments to files, either word processed documents or images, is a great collaboration tool. With it you're able to streamline a process with multiple members of a share regardless of their location in the world.



FAB FEATURE 4

The Version history will track any changes made to a file or folder. It's a great feature and certainly helps shared folder admins keep on top of what's going on in a project. For the private user, it's handy to see any new changes made by friends and family to a folder or file.





Dropbox Paper

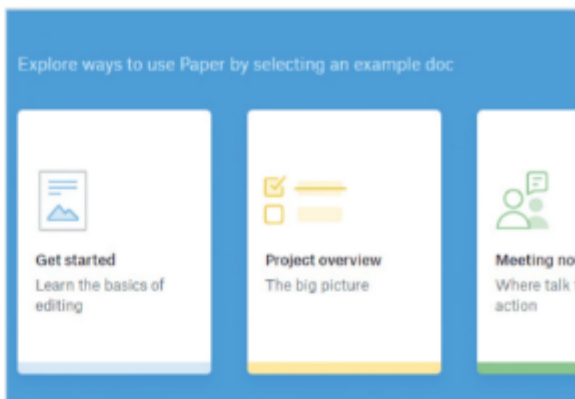
Dropbox Paper is a new feature that is, to quote Dropbox itself, "more than a doc, Dropbox Paper is a flexible workspace that brings people and ideas together". It's where you can create content to share and work with others.

FOUR FAB FEATURES OF DROPBOX PAPER

Dropbox Paper can be started by simply clicking on the Paper link in the sidebar on your Dropbox interface. Here are four features to look up once you're in.

FAB FEATURE 1

You can create a new blank document from within Dropbox Paper or you can opt for one of three already available templates: Brainstorm, Project Overview and Meeting Notes. All documents are personal to begin with, until you choose to share them.



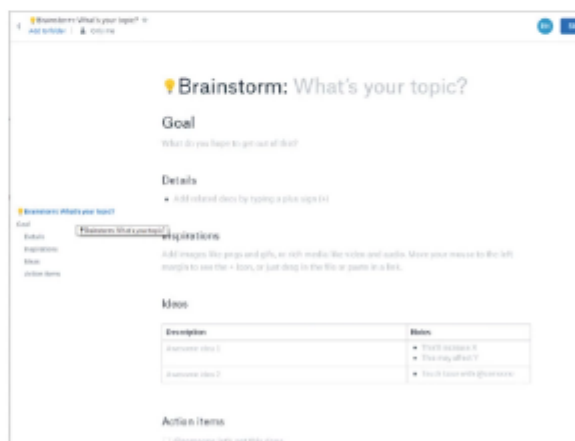
FAB FEATURE 3

Depending on what content you enter, Dropbox Paper is able to automatically change its layout. For example, entering C++ code will start line numbers and colour coding for variables and so on.



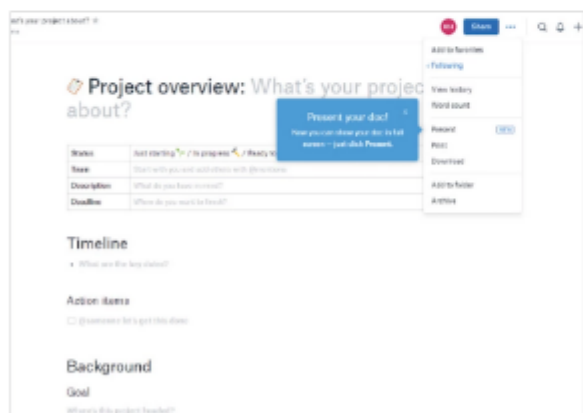
FAB FEATURE 2

The Templates are nicely laid out and easy to follow. Depending on the one you've launched, it's just a matter of editing the content that's already present and substituting it with your own words and ideas.



FAB FEATURE 4

Dropbox Paper is able to keep a history of any documents you or others have added, as well as display the word count for individual documents, download them to your computer or device, and even open them in a Presentation mode.





Dropbox Photos

Dropbox Photos takes the images that you've already uploaded to your Dropbox area and displays them in a large format, timeline-based or organised view. Although you can't make any modifications to the images, as you can with Google Photos, it's still a handy feature to have.

FOUR FAB FEATURES OF DROPBOX PHOTOS

Dropbox Photos is split into two sections, **Timeline** and **Albums**. The **Timeline** is the default view, displaying your images as they appeared in Dropbox. **Albums** are yours to create and populate.

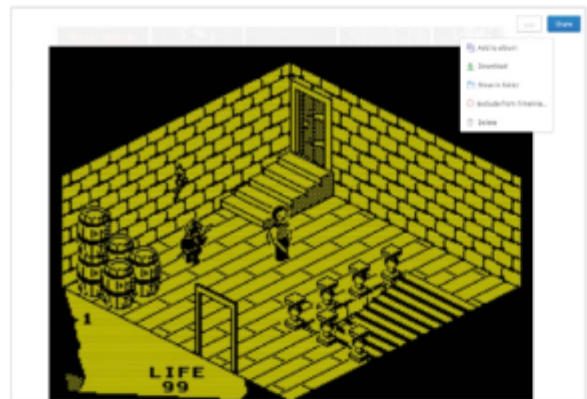
FAB FEATURE 1

Any images on your computer or device can be added to Dropbox Photos simply by dragging and dropping them via the OS File Manager, the Dropbox app or from the main Dropbox web interface.



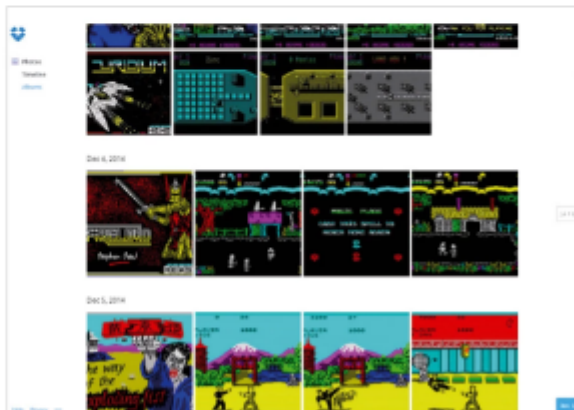
FAB FEATURE 3

Individual images can be opened up and displayed, together with the creation time and date. From there you can add them to an Album, download, delete, display where they are in your Dropbox folders or exclude from being viewed in the Timeline.



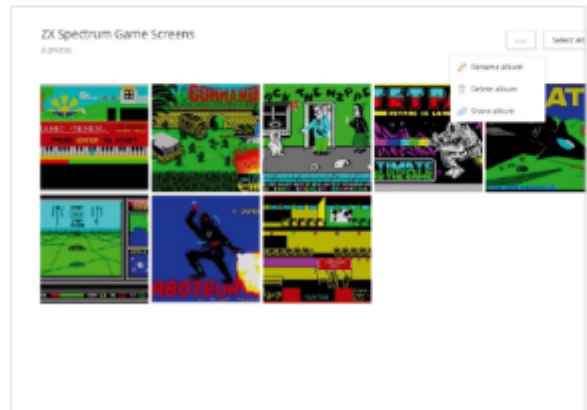
FAB FEATURE 2

You can quickly scroll to dates by hovering the mouse over the right-hand side of the Dropbox interface. This will reveal a timeline set of links by month or year, depending on how many photos you have in your Dropbox account.



FAB FEATURE 4

Albums are easily created by selecting individual images and copying them into a custom album. You're also able to share the images via Twitter, Facebook or share them with others through the usual Dropbox share features.





Glossary of Cloud Terms

There are a number of confusing and bewildering terms used in technology and since the cloud became a real thing, those terms have expanded to encompass everything we do online and in a cloud service.

CLEAR SKIES

Here's a quick list of some of the terms you're likely to come across as you explore cloud technologies further. Needless to say, the industry loves its terminology, so expect many more as you delve deeper.

AGILITY

Refers to the faster implementation of IT within a company, specifically cloud implementation.

AIRFRAME

An open source cloud platform that's targeted at businesses in the thinking stages of adopting a private cloud service model.

BACKUP AS A SERVICE

Another form of online mass storage, where a company can effectively backup its entire systems data to the cloud. This service is of interest to audits, as off-site backups are secure and safe from accidental damage.

CLOUD

The Cloud, an online set of services that's globally connected and allows individuals and businesses to interact with.

CLOUD BACKUP

Being able to back up your data to a cloud storage service. Used by both consumer and businesses alike. Offers support for multiple platforms and operating systems, from computers to mobile devices and even games consoles.

CLOUD BROKER

A company that liaises between several cloud service providers and clients to help find the best provision.

CLOUD BURST

A hybrid cloud deployment feature, whereby a private cloud is able to use public cloud resources when demand for computing tasks spikes.

CLOUD INFRASTRUCTURE

The physical hardware, software and connectivity that makes up a cloud-based datacentre. The servers, apps, networking and so on.

CLOUD PYRAMIDS

A visualisation of a cloud providers infrastructure that shows, usually via colour coding, the services it offers on different platforms.

CLOUD SERVICE

The solution that's offered from a remote, cloud server. That can be storage, email and so on, or be categorised as Private, Public or Hybrid.

CLOUD SERVICE PROVIDER

The company that provides cloud-based solutions such as storage, email, virtualisation and more. The company may or may not own its datacentre and cloud infrastructure.

CLOUD STORAGE

Online mass storage, housed on servers in datacentres, with quotas set for those who utilise the storage.



CLUSTER

A group of linked computers that work together as if they were a single computer, for high availability and or load balancing.

COMMUNICATIONS AS A SERVICE

Cloud-based telecoms, messaging, video conferencing services. The likes of Skype, Facebook and Twitter come under the CAAS heading.

DESKTOP AS A SERVICE

A form of cloud-based remote working, whereby a user can access their desktop from any Internet connected device, regardless of the device's operating system.

DATABASE AS A SERVICE

Cloud housed and driven database, freeing up the company's investment in in-house hardware and significantly lowering power costs.

DATA CENTRE

A self-sufficient building with specialised climate control where lines of servers are housed. The servers work in a cluster providing the various cloud services.

ELASTICITY

The ability for a cloud service to expand or retract its services depending on the demand to its servers.

GAMING AS A SERVICE

Cloud driven gaming servers that host games for multiple platforms: PC, PS4, Xbox, etc. and provide unique gamer-specific rewards, trophies and events.

HYBRID CLOUDS

A cloud service that uses public and private clouds, as well as in-house hardware to provide cloud services.

HOSTED APPLICATIONS

A web-based application that runs on a remote server, hosted in the cloud. The same as Software as a Service.

INFRASTRUCTURE AS A SERVICE

A cloud model that provides users with a virtual server and network. The online server can be accessed from any Internet connected device.

MOBILE CLOUD STORAGE

Simply a service that's designed to house mobile data storage for an individual or business.

NIST

National Institute of Standards and Technology. Founded in 1901, NIST provides standards for most electronic and digital services.

PLATFORM AS A SERVICE

A cloud model that provides developers with a coding platform to program new apps. The platforms can be any operating system, offering greater scope for multi-OS app development.

PUBLIC CLOUD

A cloud service that's available to everyone, providing everything from email, storage, virtualisation and collaboration.

PRIVATE CLOUD

A cloud service that's managed by a single business, providing the same duties as a public cloud but having exclusive access to the business only.

SOFTWARE AS A SERVICE

A cloud model that provides online access to software such as productivity apps, email etc.

SERVICE MIGRATION

The act of moving all your company, or individual, data from one cloud service to another. Can also mean moving from all in-house to a cloud-based service provider.

VIRTUALISATION

Creates an image of an operating system on virtual hardware. Users can create virtual machines for any hardware type, using them to develop or test on.



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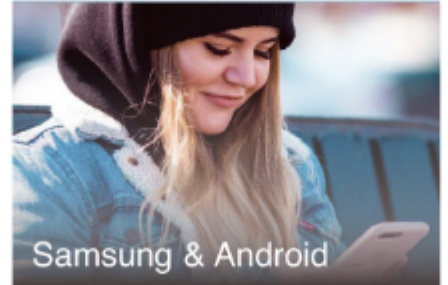
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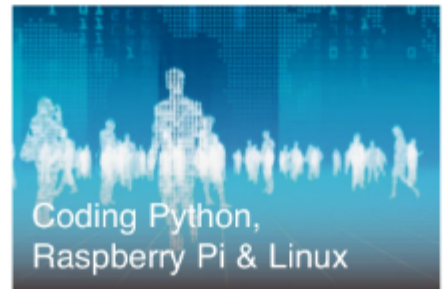
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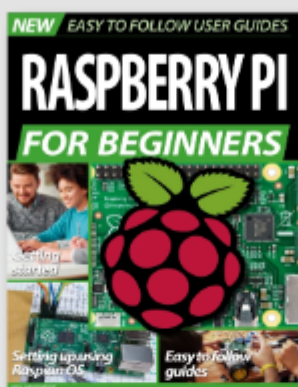
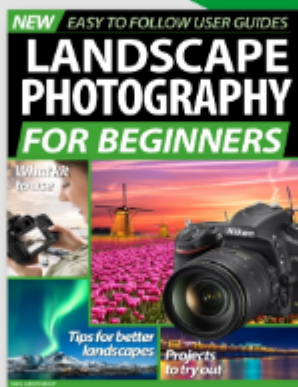
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CLOUD

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Coming soon!