Meet the cloud
What are cloud services?
Cloud storage and syncing
Collaborative services
Photo-editing in the cloud
Office productivity in the cloud
Cloud hosting
Cloud services for SoHos
The personal cloud and cloud devices
Nifty cloud services
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FAST TRACK to CLOUD SERVICES

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Introduction: Meet the cloud
The internet is an enabler, and one of the most important things it’s enabled is cloud services. But what are they? Just another fancy term for the internet? No

What are cloud services?
In this chapter we will take a look at the various ways in which the cloud manifests, and do some jargon busting, and also look at some pros and cons of cloud services

Cloud storage and syncing
Here we’ll look at how you can go about backing up and syncing with your cloud storage account

Collaborative Services
The cloud also enables real-time collaboration, regardless of where you’re located with respect to your friends or colleagues
Photo-Editing in the cloud
Natively installed apps aren’t your only option when it comes to having fun with pictures

Office productivity in the cloud
Office suites have traditionally been something to pirate and install. But now reasonable pricing and the shift to the cloud has brought with it many benefits and many players

Cloud Hosting
With cloud computing came scalability and an era of on demand hosting resources. Here we look at some of the players in this space.

Cloud Services for SoHos
These services cover everything from time tracking, invoicing, survey tools, and project management to CRM tools. Here are our top picks.

The personal cloud and cloud devices
With the personal cloud, the power of cloud computing comes into the hands of the individual. Read on to find out exactly how.

Nifty Cloud Services
The cloud plays host to many handy little task-specific tools that can be real life savers. Saving the best for last here we showcase few of the best ones.
Introduction

A lot has been said, written and discussed about cloud computing over the past decade. From being a buzzword in its early stages, to a fashionable catchphrase in IT circles, to a downright cliche and to sometimes actually even being used correctly, the term has seen its share of ups and downs. The problem however is that as with any phrase that develops organically (like say Web 2.0) there are always bound to be different definitions propagated by different stakeholders. Some believe it is the ability to lease out scalable virtual servers on demand. Some believe complex applications being delivered to end users through a web browser is also cloud computing. Some believe that vendors who provide the infrastructure and underlying frameworks that enable developers to create their own remote apps, are engaging in a form of cloud computing.

Cloud computing may be a lot of things but it certainly isn’t what Mr. Vishwa Bandhu Gupta, a former additional commissioner of income-tax, believes it is. If you haven’t yet seen the video we’re referencing, do yourself a favour and do watch it – http://dgit.in/raincomput. Mr. Gupta warns unsuspecting viewers of catastrophic data loss if clouds burst into rain. It’s hilarious but we won’t spoil it for you any further, so do watch.

Coming back to the topic at hand. In this book we’ll delve into the basics first; debunking myths and answering fundamental questions like “is cloud computing just another fancy term for the internet?”. While painting a picture at a broader level, the book will be focusing primarily on the SaaS (Software as a service) part of things, which even includes web services that help you perform a particular task by offloading compute power to the server side – say transcoding a video remotely. These are, after all, the areas of cloud computing that touch everyday consumers such as yourself.

The book takes a look at everything from the various options available in cloud storage and syncing to collaboration services. There’s a bit of serious stuff such as cloud based productivity services but even some fun stuff like photo editing in the cloud. You won’t believe the number of services that exist out there and all you need to tap into them is a simple browser.

So do try them out, and write in to us at editor@thinkdigit.com with your valuable suggestions. Happy reading.
The internet is an enabler, and one of the most important things it’s enabled is cloud services. But what are they? Just another fancy term for the internet? No.

Computer Science technologies have been sprouting up like wild weed in a rainforest. We now have better computers and faster systems. Along with system performance scientists have managed to boost data storage capacities which have opened up a whole new window of avenues for the computing community. “Cloud Computing” is a buzzword you might have randomly picked up from a geek discussion. You might have heard one of those technology aware people say – “Take it from the cloud.” It is a hardly a recent technology actually, but it’s still one of the most exciting developments in computer science.

Now, there is the off chance that you’ve never heard of Cloud Computing. If so, you are one of many millions who use cloud computing applications without ever realising it. Cloud Computing doesn’t have one specific definition, mainly because cloud and computing are two very diverse and fuzzy terms. Although for the sake of a concise explanation we can state that Cloud Computing is essentially using any service that makes use of the Internet Network along with any non-native hardware and software, it is hardly a
fitting definition. Most people argue that a simplistic definition like the one above belittles the impact of cloud-based computing in the real world, but the truth is that cloud computing is actually just jargon, a scientific concept, inclusive of a whole lot of computing frameworks. Larry Ellison famously commented, “The interesting thing about cloud computing is that we’ve redefined cloud computing to include everything that we already do. I can’t think of anything that isn’t cloud computing with all of these announcements. The computer industry is the only industry that is more fashion-driven than women’s fashion”. The above does a more than better job of asserting the computing spread that cloud computing provides. Cloud computing includes some forms of distributed computing which is basically running a program or application on several machines connected to the internet at the same time. But the phrase is more commonly used to describe the practice of utilising a service over a network using software running on a single or multiple machines on the service provider’s side. Let’s, drill this is in using an example. Say you want to run an intensive computer program using only your low end netbook. You can either spend a small fortune and purchase a supercomputer or make use of a cloud computing platform, port your code and allow it to be processed on the cloud (a set of high end machine + software combinations on the service provider’s side). Post processing you can obtain the results in a few clicks. What you have achieved here is the service of powerful processers that are not physically connected to your system, but are a part of the same network (the Internet, in this case).

“Cloud” computing
The word “Cloud” in cloud computing has an interesting take to it. The fact is “Cloud” Computing is so little understood that an explanation is warranted. A cloud refers to a set of hardware, networks and storage devices with combined capability of providing any useful service. A Cloud
Meet the Cloud

is essentially a connected universe of machines, a massive pool-up of resources. So the next time some smart alec tells you to “Get a file from the cloud”, all he’s really saying is, “Download the file from the combined storage arrays of some network that’s accessible over the internet.” The idea is simple. Bring together your computing infrastructure and connect it in a network, allowing a user to access data and applications from any remote location. The capabilities of the cloud concept are staggering. You can compile, edit and save documents or run entire companies using a cloud computing framework. Take the example of a company with more than a thousand employees. Buying individual workstations might be necessary, but no more does the employer have to purchase multiple software licenses, install them on each PC and monitor the usage to try and prevent piracy, etc. A single application on the system can allow each employee to access any required program hosted on a “cloud” of machines. Cloud Computing is actually shifting user machine workload and dividing it amongst the machines in the cloud network. This reduces requirements on the user side tremendously. All the user has to do then is simply connect to the cloud, run the interfacing program and allow the network to do the rest. The Cloud is revolutionising the computing industry as you read this article.

Framework and working

Cloud Computing frameworks are typically made up of a few general components. There is a back end and front end which needs to connect and communicate. This is usually achieved using the internet, which is really nothing more than the world’s biggest network. The back end as the name suggests is the “not-seen” end of the network, which is essentially the group of machines that form the cloud in question. The front end consists of the client end hardware and software that helps you access the cloud network. Front end client software usually work as independent applications. Back end of the cloud computing framework is made by hardware-like servers, processors etc. The back end will also consist of an array of software that provides the crux of the cloud service. A sample loop of this framework goes like this. A user will access the cloud using a service on his mobile device, PC, tablet, etc. This will be done using the front end software. Once access is provided the link to the cloud has been set. Now the user can use the cloud service. All the data processing and handling is done by the systems on the back end. The cloud software handles the computing involved
and sends the results back through the connection just established. This completes the loop.

Within this loop there are small important components in the cloud computing architecture. For example a central server does the bulk of administration work and takes care of traffic monitoring and resource allocation. Middleware is software that allows machines in the back end network to communicate with each other. As you must have realised, such a large network of devices must have an optimisation framework in place, else there will be massive idle time, power wastage, etc. There is a hi-fi term called server virtualisation, wherein a physical server is divided into a number of “virtual” servers, each running at maximum capacity. This technique reduces the need for more physical servers in the cloud computing framework. Cloud computing as a framework is no rocket science. The genius of cloud computing does not lie in its framework but its scale, and the scale is increasing with time as research progresses.

Cloud computing you use
If you have ever attended a tech / geek conference on any computer technology it near impossible to miss out on cloud computing being brought up. Slowly and steadily cloud computing has made its way to mainstream IT and computer science. A recent research study states that almost half of the US’s business enterprises use cloud computing to manage its operations. This is quite a staggering figure and it reinforces the belief that cloud computing deserves to move on from simply being a buzzword and take its rightful place in the limelight.

Although you may not be aware of cloud computing, but you’ve surely heard of Facebook! The Social networking giant makes use of cloud computing to store all of that user data that you and your friends faithfully upload every day. Instagram, otherwise also known as the “I love cats and food” app, uses cloud computing facilities to store millions of photos and process and apply filters as well. Cloud Computing is the tech secret behind how all these apps are able to store data and run software without downtime.

Essentially Cloud Computing has stamped its authority in all industries that require massive computing, storage or data handling. The world of High Performance Computing has greatly benefited due to the cloud computing rise. Scientists can now access supercomputing-like power at hourly rental prices. This gives scientists working in different parts of the country the freedom to run complex scientific simulations, calculations and visualisa-
tions, even if advanced and powerful hardware is not at their disposal. Companies requiring Big Data storage and analysis use cloud computing services regularly. This runs down to online retail stores, large retailers, banks, consultancies, etc.

At a smaller, somewhat micro level you have already used the cloud when you read an email, or book a ticket on an online reservation platform. Cloud computing has already taken over your online life.

This large scale expansion of Cloud Computing as a viable platform for computing has been made possible because of the entry of big players. Amazon provides a variety of cloud services ranging from storage to super-computing time. Google and Microsoft have slowly started invading the scene. Wal-Mart recently entered the market too. Then there are the old war horses such as EMC and IBM which support an array of cloud based technologies. With such companies investing, you can safely assume that Cloud Computing is here to stay.

Like any other rapidly advancing technology Cloud Computing has had its own share of drawbacks. Larry Ellison, for example, seems to really have some strong views against cloud computing. He has gone on record to call it gibberish and insane. There have been a few reservations regarding data security and privacy. But Cloud Computing technology has admirably stood its ground. It allows small industries and enterprises to test their operations without high investments. Large companies can adapt to a better framework for their large scale data handling operations. Cloud Computing has opened up avenues in an insane number of fields. It has been the major driving force for the app revolution in the market. It has been a prime enforcer in the rise of medium and small scale computing enterprises. The cloud is growing rapidly. According to estimates the cloud will grow by 130 per cent by 2016, and the Cloud Computing industry will be worth an estimated $150 billion. These are dizzying figures to the say the least. Enough to substantiate that the cloud is a looming force.
WHAT ARE CLOUD SERVICES?

In this chapter we will take a look at the various ways in which the cloud manifests, and do some jargon busting, and also look at some pros and cons of cloud services.

Whether its photo apps, online format conversions or large scale IT operations cloud services are in the middle of it all. Cloud Computing infrastructure provided by big players such as Amazon are changing the way companies manage their working. Shazam, the nifty music recognition app has cloud services to thank for its massive online capacity. Companies such as Unilever are boosting research output thanks to faster data processing supported by infrastructure on cloud. Cloud services have benefited business corporations, and also brought the power of cloud computing to us end users in the form of web apps, and applications on hand held devices.

Cloud Computing based services are responsible for mobilising a diverse set of industries, some of which are listed below.
**Various cloud services**

**Web, Mobile and Social apps:** We all know what apps are. They make our tablets and phones the powerful devices that they are and greatly increase utility. Cloud services have helped these apps to, as Amazon puts it, “focus on apps and not ops”. Any sort of app working on the cloud will have some distinguishing features such as data storage on a cloud infrastructure and online/offline data caching. A cloud-based app allows a wider range of access to the user via a native application, a web browser or a custom-built app. These apps also have support for a variety of user requirements such as privacy and backup. Cloud based apps might run a tad slower than native apps that run on your device, but if all apps were native, your device wouldn’t run much anyway! Email services such as Gmail and Yahoo!, and other apps such as Shazam, Schlage and Google Voice are examples in this category.

**Big Data:** This refers to massive data sets that cannot be handled by traditional data processing and management systems. The large scale involved makes dealing with these sorts of data sets tough. Big Data is present everywhere: from scientific corporations such as NASA and CERN to private bigwigs such as Google, Wal-Mart and Facebook. Essentially cloud services provide a more dynamic way of storing, processing and accessing data which allows corporations to make better sense of Big Data. Virtualisation allows companies to analyse large data sets without much delay or computing hardware. Cloud Computing might be unsuitable for data sets that require very low delay times, such as Twitter feeds.

**Data Storage:** It is a no brainer that large corporations generate large amounts of data that needs to be stored effectively. Cloud Services provide that effective medium to store data. They provide services for storage, backup, archiving and disaster recovery. The
What are cloud services?

“pay for what you use” concept helps companies save money and cloud computing services use a technique called redundancy to help provide durability to the stored data. Data is replicated across servers (and often across locations) to reduce chances of loss. Amazon claims that their cloud storage systems provide 99.999999999 per cent durability. Quite a figure! Cloud Services also provide data storage for us in the form of online backup services such as Google Drive, Skydrive etc.

**Digital Media Content:** Cloud services have enabled digital media companies to optimise their digital supply chain. They provide services for computing, transcoding, encoding, streaming and storage of digital media, essentially taking care of a large fraction of the digital media supply chain. Cloud based digital media supports an easier pay-per-view model. An example of this is Netflix.

**Enterprise IT solutions:** Cloud services help set up business and IT solutions quickly without much front end investment. Companies can run their various software on cloud without having to purchase multiple licenses. Content management software can be managed on the cloud as well with top software companies such as SAP coming in. Websites can be set up quickly and scaled up and down without fuss. Traffic regulation, etc is managed by the cloud service. And if that’s not enough companies can run databases on cloud, process big data and get secure storage access as well. Cloud services provide a platform for businesses to run with minimal difficulty and maximum productivity.
High Performance Scientific Computing: As with Big Data, Scientific Computing at a large scale is difficult to carry out using traditional machines. Weather and Climate forecasts, Natural disaster simulations, Computational model testing, etc., all depend on high performance computing (HPC) platforms to run. For HPC dedicated clusters are needed, something which not every institute in the world can afford. There is still a lot of research to be done in Cloud based HPC, as one of the problems is the varying internet bandwidth at the service or user end, which can cause solution errors. However, today it’s possible to get supercomputing time from anywhere in the world for cheaper than ever before, all thanks to the cloud. For now, cloud computing for HPC is best for simulations without much inter-processor communication, but this is set to improve as well. Bioinformatics, Genome Sequencing, fluid flow runs are some of the HPC simulations that have been done on the cloud. Amazon EC2, Open Nebula and Nimbus are some examples of cloud based HPC services.

Defining cloud services
What exactly does a cloud service entail? Is it software, a computer machine, a mixture? A cloud service can be categorised broadly into the following:

Infrastructure as a Service (IaaS): As the name suggests the service includes provision of resources that support computing, storage and network and include machines and servers. Virtualisation allows the service to scale down or scale up as per the user’s need. Services usually pool up these hardware resources from multiple servers and networks sourced from numerous data centers. The client is then given access to these pools to run their own platforms. Besides general hardware and computing infrastructure these services offer additional benefits such as raw storage, load balancers, firewalls, VLAN’s and software bundles. There is utility-based costing and users pay only for the amount used or consumed. An IaaS typically can be accessed from anywhere and has no single node of failure. Examples of IaaS are Amazon EC2, NaviSite, Rackspace, Google Compute Engine and HP Cloud

Hardware as a Service (HaaS): This cloud computing service provision entails the provision of managed hardware that is leased for computing
needs. System maintenance and safety is the responsibility of the service provider. The service may be onsite or at a remote location depending on needs. This type of service is used more for HPC on cloud which requires data storage as well as active computing and includes leasing computing hardware rather than purchasing it. HaaS is at times similar to IaaS, though IaaS is more of a complete service.

**Platform as a Service (PaaS):** This kind of service involves the provision of a computing platform which includes an operating system, server side scripting environment, program execution environment, database management and web server. Additional tools for hosting, storage, design and development might also be provided. A PaaS typically allows the user to build software with the use of tools provided by the service. This allows developers to concentrate on program and code development rather than underlying software and hardware. PaaS also offers a flexible development platform that can be adopted by experts and beginners alike. Another advantage users have is that they can communicate with co-developers in different parts of the world on the same code build. PaaS essentially provides an optimal development environment for making web based applications with seamless integration of a coding environment, database handling, storage and security. Examples of PaaS are Google App Engine, Windows Azure Cloud Services and Openshift.

**Software as a Service (SaaS):** This one should be a no brainer. SaaS is simply providing any form of software or application as service. Service includes basic infrastructure and platforms need to run the software. Basically a client can access an application on the cloud using just the internet. This eliminates the need to install software on the user’s local device. Using a combination of load balancers, virtualisation and multi-tenant concepts, multiple users can use the software simultaneously, and boost productivity. A SaaS encourages a subscription model rather than a purchasing model. Clients need not handle the purchase of licenses for each software they need, they simply subscribe to a number of users they need concurrently working on the software on the cloud. Apart from lower hardware and software costs, this also makes operations scalable. The only drawback is
privacy and access issues as all data is stored and processed on the cloud with access enabled for many users. Examples of SaaS include Twitter, Facebook, Microsoft 365, SalesForce and Google Apps.

**Everything as a Service (EaaS):** This service entails virtually any kind of technology with typical cloud based characteristics, such as remote location access, scalability, pay per use model, etc. The service encompass the entire spectrum of computing hardware and software such as virtual machines, networking and communication devices, servers, programming platforms, database management systems and cloud based apps. Companies such as Google, HP and Microsoft have frequently been associated with the EaaS concept. There are even more niche interpretations and uses, such as Communication as a Service (CaaS), Network as a Service (NaaS), Backup as a Service (BaaS) and Storage as Service (SaaS), but we won’t go into all of them.

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**Advantages of cloud-based services**

1. **Data is accessible from anywhere:** All data is stored on the cloud, and can be accessible to anyone with the right authentication details, anytime, anywhere. Cloud Services also allow you to synchronize data across multiple devices.

2. **Seamless software updates and integration:** Cloud computing suppliers ensure that all required system and security updates are taken care of. Due to the automatic nature of cloud based services, users need not worry about security.
3. **Quick Deployment:** Cloud services can manage the large amount of infrastructural workload which allows faster deployment of solutions, especially for smaller companies. A PaaS allows a developer to focus on building code without any hardware/software hassle, and this allows him to test and simulate his code and hence deploy quicker.

4. **More computing power:** Computing is done on the cloud hence large scale computations can be managed by better machines.

5. **Increased Collaboration:** Because of easier access, employees can share information and work on documents and shared applications simultaneously. Web- apps such as Google Apps and Zimbra are examples of services that allow this sort of collaborative utility.

6. **Less expense on hardware and software:** As Cloud-based services utilise hardware and software on the cloud there is no need for the user to invest in high end software or hardware, or be tied to the constant upgrade cycles, as usually only system capable of running a web browser is required at the user end.

7. **Automatic and secure data backup:** Estimates suggest that about 800,000 laptops are lost every year at airports alone! Data backup ensures that you don’t lose more than just your laptop, though external hard-disks and the like are geographically challenged ways of backing up. Backing up data on the cloud is secure and almost immune to any sort of disaster. Just back up, and restoring is as easy as logging in from a new device and waiting for it all to download again. For companies, this is especially important, and cloud-based services ensure maximum durability and safety of data.

### Disadvantages of cloud-based services

1. **You need to be connected:** This is one of the major drawbacks of every cloud service. You are at the mercy of the internet, so much so that when the net is down you just cannot work. Varying bandwidth at any end might cause errors to creep in and this limits the use of cloud services for less tolerant needs such as HPC. Some services are trying to incorporate offline modes as an alternative for bandwidth sensitive nations such as India, but by far reliable connectivity is the only real option.

2. **Latency:** Latency is the time taken for the user system to interact with machines in the cloud. This is an obvious issue with cloud based services. Cloud based apps will have higher latency than native apps installed on a user’s system since there will be an added time of user end communi-
What are cloud services? Higher traffic and an un-favourable geographical location can aggravate the problem further.

3. **Complexity**: While cloud services enhance and ease company performance, they are initially complex to understand. Employees have to be trained to understand any cloud-based infrastructure or software. Another issue is that it is difficult to understand how a cloud based service is working and hence users can only make an informed choice with the information available. This leads to loss of control.

4. **Security**: Cloud computing is essentially completely internet-based and all cloud based computing uses and stores data using the same network. That is a security threat right there because data on a common network is prone to attack by hackers. Companies offering cloud services use the latest and most advanced security methods though, and porting to the cloud can actually be more secure for smaller companies.

5. **Privacy**: Privacy loss is a big concern when we talk about cloud-based services. Data stored or shared on the cloud by large social networking sites are usually protected and can be accessed by only authorised people, but there is always a chance of accidental data leakage, mismatch and other failures.
Chapter #03

CLOUD STORAGE AND SYNCING

Here we’ll look at how you can go about backing up and syncing with your cloud storage account

The ‘cloud’ is just a word for the online space wherein gigabytes of data is stored. So how does one go about using the cloud? There are several web sites and applications that offer cloud storage services, namely Google Drive, Apple iCloud, Windows Skydrive, NortonZone, Dropbox, etc. The list is nearly endless. Now, upon opening any of these web sites or applications, the page opens to a login page asking for your username and password. Once your register or sign up, your files can be added to the cloud through a simple upload procedure. Most web sites often have dedicated email or image storing while there are those which offer free data storage up to a certain gigabyte of space. Upon exceeding the offered limit, you either have to pay to avail further services, or look elsewhere. Google Docs, YouTube, all email providers, Facebook, Picasa, Flikr, etc., all use cloud storage to let you store your data.

So how exactly is data stored on the web? Space on the web doesn’t magically manifest itself owing to an increased demand. The facilities that provide
Cloud storage services enable the data uploaded by users to be stored on an off-site storage system maintained by a third party server. For instance, when you upload data onto your Google Drive account, what is happening behind the screens is that the packet of information that you send is being routed to whichever server your user account’s files are on, which usually isn’t the web server that serves you Google Drive’s pages. The Google Drive server (facilitator) you are connected to is acting as a go-between your PC and the storage system, and merely graphically displaying what you have stored, and sending commands to modify as you make changes in the interface.

Cloud storage facilitators depend on hundreds of servers, running round the clock and picking up the slack if one of them fails or falls off the network. Knowing all too well that computers too need maintenance and an occasional cool off, any information you send to the cloud is stored on several systems. Redundancy of systems is absolutely necessary if the facilities intend on providing continuous uptime.

In addition to multiple servers carrying the same data, cloud storage facilities also ensure that the servers that store information use different power supplies, and often, ensure that identical information is never stored on another server in the same datacentre. This arrangement ensures that clients still have access to their information in the event of a power failure, or even an entire datacentre being disabled.

Cloud Storage facilitators have extended their interface to provide the same services on mobile devices, with a version for each operating system. You can now access data stored on the cloud on the go, making you and your smartphone even smarter. Just as any portfolio manager would advise you not to put too many eggs in one basket, diversify your data storage as well.
Store the bulk on the hard disks, but make sure your day-to-day essentials are on the cloud.

**Security issues**

A sudden realisation dawns when you notice your Facebook account containing personalised advertisements. Just how much information does one mouse click contain? This concern is exponential when it concerns storing sensitive data on the cloud. Is the so called off-site location manned by the third party server reliable and secure? Can you access the information on the cloud without other eyes tracking your every click? Can you restrict the recipients of the information on the cloud? These are few of the many concerns that plague users’ minds as they reluctantly opt to store sensitive data on the cloud rather than transfer it to a hard disk.

To begin with, let’s go through how the data on the web is secured. Most systems that do manage the data on the web, use a combination of techniques to ensure the security of information. Firstly, data is encrypted which is the process by which information sent is encoded in such a way that only a user with the encryption key can decode it. Most information is encrypted by symmetric-key or public-key encryption. Symmetric-key encryption techniques have grown outdated, and public-key encryption techniques rule today. A popular implementation of this encryption technique is the Transport Layer Security (TSL) which is now accepted as an industry standard.

In the public-key encryption technique, the key used to decode information is based on a hash value. This hash value that is used, is computed from an input number using the hashing algorithm. The hashing algorithm provides a standard to convert an input number to the hash value. It is nearly impossible to extract the original input number from the hash value without knowing what the hashing algorithm does. Public keys use very sophisticated algorithms and large hash values for encrypting, including 40-bit or even 128-bit numbers. Trying to find a particular 128-bit number would be the equivalent of looking for the right grain of sand in the Sahara.

What encryption mainly does is that it assures a safe transit of data. To ensure that data sent is sent from a trustworthy source or the right one, authentication is used. The most common practice of authentication, though there exist several, that is implemented by cloud storage facilities is the
requirement of a username and password. It is a simple procedure. When
the user is prompted to enter the username and password, it checks the pair
entered against the ones in a secure file. If there is a match found, the user is
allowed further access. Authorization allows the user to enlist those people
who are authorized to obtain the information that is stored on the cloud.
In corporations, due to the hierarchy in place, different employees might
be allowed different levels of access to the data on the cloud. For example,
a low-level employee who delivers mail might have very limited access to
the data on the cloud whereas the head of the division will have extensive
access to information.

Though there exist extensive measures of security, concerns still loom
large over cloud storage systems. While you can access data on the go without
relying on hardware, it is now theoretically available to the world. Testament
to this cause for concern is the increasing number of attacks by anonymous
hackers on unsuspecting victims, often having their social network accounts
wiped out or their passwords changed. This being the least of the violations
that one could face, what if sensitive information such as credit card details,
passport number, pan card number, etc. stored on the cloud are traced by
a hacker? Personal measures can be taken to avoid such a grave situation
by changing one's username and password regularly and storing such
sensitive information in a secure location, physically, and not on the web.

Google recently eased a lot of nerves by
declaring that it now encrypts all data before
copying to disk. Thus, all your data is being
decrypted on the fly when it is read by you. This
means that none of the thousands of employees
who man the data centres where your infor-
mation might be stored are privy to your un-
encrypted personal information. The same applies to our Digit Forum,
for example: while an administrator can change your password and block
your account, he can never know what your password was, which is an
ideal form of security, because say, if you use the same password as your
email account, no forum admin can ever know what that password is, as it
is stored encrypted in the database from the moment you enter it.

Outsourced storage performance is obviously lower than local storage.
How much slower depends on the speed of the pipe you're willing to invest
in and obviously the higher the bandwidth, the better the experience, but
it can never be as good as a local hard drive.
The government is the other concern for cloud-based storage, as most nations allow court orders to be issued to access any data without first informing the owner / uploader of the data. These anti-terrorism laws can obviously be misused as well, but here the chances of that being you amongst a billion other netizens is remote, and only increases depending on whether you’re involved in suspicious activity. For most of us, this isn’t a concern at all.

**Syncing services**

Cloud Storage and Syncing applications are slowly becoming popular. They offer an almost exclusive service of cloud based storage and synchronisation of documents across multiple devices. There are a multitude of cloud based sync-store options out there now. Below we have listed few of the popular and powerful cloud sync and store applications along with briefs about their features, strengths and weaknesses.

**Google Drive:** Whatever comes out from the Google factory immediately draws attention. Google Drive is no exception. While it started as Google Docs, it now has the ability to display more than 30 kinds of files (HD videos, Adobe Illustrator, Photoshop, etc) on your PC. This allows you to open files made on software which may not be installed on the device you’re currently accessing the data from. Google Drive also has an OCR scanning ability which allows the app to scan images for text and enhances the Search Drive option significantly.

For daily use, Google Drive allows you to upload files for storage, as most sync-store apps do, but since Google doesn’t believe in the concept of folders, everything just goes into the same pile, which is a big drawback. Drive comes with a basic document editor that allows you to edit files on the go and has some excellent retention and collaboration features, but there is still no support to do so for multiple accounts. Google Drive’s strengths lie in its excellent support for all Google-based features such as Gmail and Google+. The UI is simple, and navigating is pretty easy. As the Drive is an enhanced version of Google Docs there are brilliant document viewing and editing options. On the flip side, the Drive has limited syncing and streaming options. Sharing a file is irritating and previewing options are limited on some apps. There is 5 GB of free storage and there are applications for most OS platforms on PC’s and mobile devices.
**Dropbox:** It is probably the most popular cloud based sync-store app around. It is beautifully simple and uncluttered. Anyone who has used Dropbox will tell you that it is extremely user friendly and that is its biggest strength. Sharing a file is a no brainer and a link can be generated in a couple of clicks. Another plus point is the brilliant API that Dropbox is built on. The API results in the generation of multiple applications that utilize Dropbox, increasing support. Dropbox does have a few drawbacks. All files uploaded get stored in a single Dropbox folder which basically reduces its usage as a reliable backup option. Like Google Drive you cannot sync device folders. Also Dropbox’s free storage is on the lower side and additional storage is a tad expensive.

Dropbox’s acquisition of cloud based photo storage giant Snapjoy increased photo viewing support from multiple devices significantly. Dropbox also has a pretty useful Facebook integration allowing users to share files from Dropbox’s cloud to Facebook groups. In all Dropbox is a great option to satisfy your cloud sync need. Syncing customisation options are limited but simplistic UI and settings make it a breeze to use.

**SkyDrive:** SkyDrive is Microsoft’s offering to the cloud-based sync and store applications. It’s an extremely well-designed application. The UI is also simplistic and overall look and feel of the app is very easy on the eyes. Skydrive has some Google Drive-like features, and you can create and edit documents from within your browser. Skydrive also syncs all the documents created using Microsoft software such as One Note, Word and PowerPoint, as Google Drive does with Google-based documents. SkyDrive gives you the option of multi-folder sync which essentially means that you can select different folders on your PC to sync with Skydrive. This is a big plus point. It also has one of the highest amounts of free storage in the class of cloud based store and sync apps (7 GB). The application also has a nifty fetch feature using which you can access files from a connected home PC. SkyDrive makes for a powerful application when it comes to syncing your documents and storing them on the cloud. It doesn’t really have a weakness as such, except absence of support from third party applications and the absence of a Linux client.

**NortonZone:** This offering by Symantec prides itself on security. The app’s tagline is “Finally, file sharing that’s both easy and safe. From the
company that protects the world’s most important data — yours.” Norton-Zone is not a bad addition to the multitude of cloud store-sync options out there. It has the usual stock of features like multiple device syncing and link share. NortonZone is high on collaboration and has the options of inviting groups for folder share. Invited people can also comment on shared stuff. NortonZone also has an automatic system to detect virus or malware on uploaded files. NortonZone’s weakness is that it is hardly a dynamic tool. The UI is not great and could really use an upgrade. In all NortonZone is a safe bet, but it does not have enough firepower to shake the share of Dropbox, Google Drive et al.

SugarSync: SugarSync is a highly customisable application, and not only does it allow you to sync multiple folders from your PC, it also allows you to select the devices you want to sync it across. SugarSync also has a near exclusive feature of allowing the user to password protect files. Media Streaming is also available and you can stream entire albums from the cloud. There is 5 GB of free storage on joining. SugarSync, while high on features has a difficult to deal with UI. Navigating and getting things to work is difficult when compared to the simplistic environment of DropBox. There is also no Linux support.

Apple iCloud: iCloud is an Apple product and although not as feature heavy as others it is quite a simple and handy solution to basic cloud storage and syncing. There are quite a few apps that have iCloud support. Not only does every change made on these apps get updated via the cloud on Apple’s server, you have the additional benefit of retaining a previously saved version of your document. iCloud is extremely simple to use. Users must remember that iCloud is a basic application. There is no public sharing facility and the app is largely meant for syncing text documents created on supported apps.

Box: Box is another popular cloud service for storing and syncing data. It is supported by quite a few productivity apps and this is a big benefit. Box mirrors DropBox in the above aspect due to its popular API. Box has some nice features such as feed about document changes, detailed version tracking and integration with Google Docs. Sharing features are elaborate in nature and there are more than enough collaborative features, and it doesn’t have multi-folder sharing capability and that remains its biggest drawback.

Others: Apart from these, there are a number of other apps. Some of them are Insync (closely tied with Google), Mozy Stash (essentially a Dropbox
Cloud storage and syncing model), Wuala (great security and powerful desktop applications), and Cubby (allows syncing files from two switched on machines).

Unlike a tablet/phone/laptop comparison there is no clear winner in the cloud sync app category. The choice largely depends on the need. Google Drive is a great option if your syncing needs are simple and you deal with lot of email based data. SkyDrive has multi-folder syncing and that gives you greater flexibility. Plus Skydrive has a beautiful interface and killer looks. SkyDrive and Google Drive also have excellent on the go editing option. Dropbox is usually the preferred option for users with simple storage and syncing need. It has a very user friendly interface and third party support makes it a popular choice. It is also a dependable option on a number of platforms. If you want larger control of what and where to sync than Sugarsync is a great option. Users might want to look at smaller and less popular apps that offer some neat specific features, like the powerful peer-to-peer sharing ability of Cubby.

Transfer large files online

Most email service providers have a file size limit when it comes to attachments. That limit usually acts as a barrier if the user wants to transfer something big. There is certainly a way to work around this problem. There are certain cloud based services that allow users to transfer large files via internet. Some of these cloud-based services are:

**Dropsend:** This is a very popular service used for transferring bulky files. Users can send files up to 2GB using the simple web interface provided by Dropsend. The application provides a basic interface that just asks for a from and to email address, and a simple visual security code verification. The free service doesn’t have a storage option, but you can send up to five files in a month. Paid plans can be customized for greater utility. Dropsend ensures security for data transfer and storage with 256-bit AES security.

**Ge.tt:** Ge.tt is another web-based application that allows registered or anonymous users to transfer large files with minimal fuss. It is a simple application with drag-and-drop option for transfer. There is a real time update on the number of shared files and users that appears as a count on the right end corner of the page which is quite cool. Ge.tt has a 2GB
limit for registered users. The service allows real time sharing which means that the content is published or shared as soon as selected and there is no need to wait for uploading. Ge.tt has its own API which allows developers to modify and enhance app utility.

Hightail (formerly YouSendIt): This is another attractive option for large file transfer. Hightail allows you to send large files in a secure manner. The service also gives you the option of sharing folders and allowing restricted access. In addition to the above there are other services provided like file encryption and virtual document sign option. The maximum file size that can be sent in the free version is 50 MB, and that is one of the biggest disadvantages of this service.

WeTransfer: If all you want to do is a transfer a large file online WeTransfer is a brilliant service. The web app is so minimal that there is barely any text or colour in the entire page. Essentially, the service allows you to transfer files up to 2 GB using an extremely simple interface. You can make as many transfers as you want and a file can be sent to as many as 20 people at one time with the free version. The Premium account has some amazing benefits such as an increased file size limit, background personalization, and password protected transfers. WeTransfer is probably the best deal if all you are looking for is a hassle free file transfer.

TransferBigFiles: This is a powerful high capability service. The website claims that it has the largest transfer bandwidth and as such it allows the user to transfer files as large as 20 GB which is miles ahead of most of the other file transfer applications. The service allows you to send or receive files not only from your desktop but even any personal website or blog. The high bandwidth allows users to upload HD videos from any device. All files uploaded get stored until manually deleted. All these features make TransferBigFiles a loaded application especially when it comes to heavy media files.

This is no way an exhaustive list, but we have covered the most popular. Other options are Mega, Anon files, File Dropper, Mediashare, Jumpshare etc. File transfer applications utilize the power of the cloud to allow for large scale storage and transfer. Users must be keep in mind that these applications offer little or no editing and syncing options and in that sense are different from cloud based sync-store apps.
Cloud storage services

Cloud Storage services are one of the most important and widely talked about offshoots of the cloud computing rise. These services offer a large amount of storage space to back up files online. Some also allow you to sync your backed up data across devices, but essentially, there’s just glorified net-based folders to store your stuff. Here’s a short list of some of the better ones:

**JustCloud:** JustCloud is probably the leader in the pack of cloud storage services. It has syncing ability across devices and you can access backed up data on the go. It offers an unlimited data storage, for a fee of course. The trial version has little capacity which is quite a letdown. JustCloud has an industry standard security system in place for protection and there is geo redundant storage option for ensuring durability. Other features include file versioning, laptop tracker and customisable back up automation.

**Crash plan:** Crash plan is a good option for beginners. There is a simple desktop application that allows you to backup files on the service’s remote server or elsewhere (including your cousin or friend’s place, office, and an external hard disk). The service does not have a syncing option and transfer speeds are pretty low. Storage rent is affordable and there is automatic backup option. Restoring is fairly simple like most of the other things to do and this makes Crash plan a great option for novice users.

**Carbonite:** Carbonite is a relatively old cloud backup service. It has been around for quite some years and offers a stable solution for causal customers. There is an automatic backup and scheduling feature and the user interface is fairly intuitive. Carbonite is pretty much a basic backup tool which is kind of perfect for first time users. You can manually select files to backup or choose the automatic option. A backup tab shows you the progress. Carbonite home also has a mobile app. The service comes in several packages like basic, HomePlus and HomePremier. Carbonite Home lacks syncing and limited bandwidth makes it slow, but still it is an ideal option for a home user with basic backup needs.

**LiveDrive:** LiveDrive offers unlimited storage at a competitive price. It doesn’t limit the bandwidth at its end which allows you to access really fast backup speeds. Besides the general backup and restore client features, LiveDrive has a neat sync ability and manages file conflicts admirably. The combination of all of the above with military grade encryption technology
might make LiveDrive an overkill for general users, but if you want a feature-packed backup service with the fewest limitations LiveDrive is your answer.

**Dos and don’ts of online data backup**

Online data backup on the face of it seems like a reliable option. There is whole platoon of services that allow you to store, share and sync files on the cloud. These services also promise you security and reliability, but the truth remains that cloud based services are prone to failures too. The user must keep in mind a few limitations of the cloud and make an informed choice before jumping the bandwagon or following the crowd.

- For data backup it is advisable to use a full blown cloud storage option rather than a sync-store option such as Dropbox, as file encryption is not its powerful suite. Dropbox, Skydrive etc can be used to store basic files such as images, documents etc, but when it comes to backup of important and heavy data it is preferable to use Cloud Storage options such as JustCloud and Carbonite.
- It is almost mandatory to have a fast and reliable internet connection if you are using any cloud-based application since all cloud based apps rely on the internet as a communication and transfer medium. A bad internet connection will seriously hamper cloud based operations and may also cause loss of data during syncing
- Remember to always have a plan B. Cloud Storage services are not 100 per cent secure. They are still prone to natural disasters, outages and security breaches. It really wouldn't hurt to have your data backed up on a secondary cloud in addition to your primary cloud backup.
- Cloud Services ensure maximum security but is also the user’s responsibility to be vigilant from his/her side. Users must set proper authentication rules that define who can access what. Verification methods can be put in for this purpose.
- Online Cloud Storage is fancy, but a personal hard drive is still the way to backup extremely sensitive data. Also, remember not to share copyrighted files online, or it could land you in trouble.
The cloud also enables real-time collaboration, regardless of where you’re located with respect to your friends or colleagues.

Today, collaboration demands real-time exchange of files, ideas, messages, calls, etc. Cloud services are re-defining the way in which people collaborate over the internet, and have made it possible for startups to have teams that are spread over the globe, and sometimes don’t even need an office to work out from. It’s what made it possible for institutions to teach open courseware to students across the globe, and is responsible in bringing the world closer.

As usual, there are numerous options to choose from, and that’s why this chapter will help you find one that’s right for your needs.

1. Collaborative Whiteboards
Collaborative whiteboards are widely used by academia for remotely interacting with students and discussing ideas related to course work. We use physical whiteboards daily to discuss, draw and make plans and timelines. Online cloud based whiteboards allow you and your team members/friends work on one shared whiteboards in real-time, allowing you all to mark and
discuss just like you do in person together on one single board. Here, we will take a look at some of the popular collaborative whiteboard tools available:

**REALTIME BOARD**

*www.realtimeboard.com*

RealTime Board is like an infinite canvas on which people from any location can add files, draw, write and discuss in real-time.

Pros:
- Various templates to start creating boards quickly.
- Endless possibilities including calendar, sticky notes, agile task manager, venn diagrams, shapes, links etc.
- Allows media upload including images and videos.
- Allows sharing of your board on Facebook and saving it as pdf.
- Mini-chats that allow you to discuss a particular idea.
- Email notifications
- Powerful Google Chrome Extension.
- Integration with Google Drive allows you to upload google docs on the board.
- Allows sharing of boards on your web site or blog through easy to use `<embed>` feature.
- Presentation toolkit to make presentations by taking snapshots of parts of the board and converting them into slides.
- Vectors shapes that help you create beautiful infographics quickly.
- Allows setting permissions for boards.
- Very easy navigation due to zoom in/out feature.

Cons:
- Due to wide range of features it provides, the interface gets a little complicated for someone who just needs a simple board.
- Does not provide live markup of web sites.

The Realtime Board interface
Who is it for?
Realtime Board is best suited to small businesses, start-ups, architects, interface developers, UI/UX designers and freelancers.

Pricing:
Though Realtime Board has both free and premium accounts, the free one provides you with pretty much everything you need and is feature-rich. It allows you to create 3 private boards and gives you about 100MB of storage and about 100 files on a board along with unlimited guests.

TWIDDLA
www.twiddla.com
Twiddla provides a smaller set of features than RealTime Board, but is easier to set up and doesn’t even require registration!

Pros:
- Allows mark-up of live websites.
- Provides a blank canvas to start with making it approachable to new users.
- Easy invite options.
- Inbuilt chat option as well as audio-conference facility.
- Allows mathematical formulas making it possible to solve mathematical problems collaboratively.
- Provides twiddla browser bookmarklet features using which you can send any webpage to twiddla white board with a single click.
- Sandbox to start using it without even registration.

Cons:
- Does not provide templates.
- No integration with Google Drive.
- No Facebook sharing of board allowed.
- Not a very beautiful interface.

Who is it for?
Twiddla is best suited for students to draw, solve math problems, web site
designers and developers and casual users who can benefit from its awesome live web site markup feature.

**Pricing:**
It’s free and allows unlimited collaborators.

**CONCEPT BOARD**

**www.conceptboard.com**

Though it’s not free, Concept Board is an awesome tool for those who seriously need a creative and professional collaboration experience.

**Pros:**
- It allows collaboration with both registered users as well as guest users who need not register.
- It makes it super easy to upload documents once and discuss the changes directly in the context of the document without having to upload and download revisions.
- It has integration with Salesforce chatter, Google Drive, Mail2Board etc, so if you use them, Concept Board quickly fits in your workflow.
- Provides the awesome feature of mini-map which allows easy navigation of a large board, a crucial feature unavailable in any other similar software.
- Live Video conferencing and video chat facility which Real Time board does not provide.
- Cross device collaboration with extremely good performance.
- It also has a unique feature of live locations which allows users to see each other’s locations on the board and to know what portion of board they are currently viewing.
- Allows you to take screenshots from any application with just one click and add to your board then and there.

**Cons:**
- Even getting a free / personal account needs you to submit your credit card information.
As compared to real time board, which offers almost everything but video conferencing, the free version of Concept Board allows just 5 guests.

Who is it for?
Concept board is great for designers in creative industries such as advertising, graphic design, concept art etc who need visual collaboration regularly. Also, concept board provides an additional layer of a web conferencing tool, so if you need a video conferencing facility along with a white board tool, you should choose Concept Board over any other software in this list.

Pricing:
It’s free for non-commercial use, and provides 1 user account and 5 guests only with a limited area of 5 square meters (about 80 pages). For more features including team features as well as security, you need to upgrade to a premium account.

BAIBOARD
www.BaiBoard.com
Baiboard is a live collaboration whiteboard app for iPad and Mac and has one of the most intuitive interfaces among all the others. Its small and sweet with limited features.

Pros:
- It allows you to collaboratively annotate, e-sign and seal digital documents.
- It’s provides secure encrypted storage for free unlike the others.
- It allows you to take snapshots of your board and save and retrieve them almost instantly.
- You don’t need any signup or registration.
- Allows sync with between Mac and iPad version in real-time.

Cons:
- Its only available for Mac and iPad, and Mac version has less features.
- No support for word processor documents and spreadsheets.
- No integration with Google Drive etc.
- Limited editing features.
Who is it for?
Its suited for casual users who just need to discuss PDFs and images.

Pricing
It’s available for free from Mac Store for Mac and the Apple App Store for the iPad.

**SCRIBBLAR**
*www.scribblar.com*

Scribblar is ideal for those who wish to plan, for online tutoring, and conducting tests. A Scribblar board is a “Room”, and you can invite users to your room, moderate it and embed the room on your blog or web site.

**Pros:**
- Comes with a mathematical equation editor (Latex)
- Allows saving of chat transcripts
- Has a voice chat feature
- You can take snapshot of your board anytime and save it in assets folder.
- Allows fetching of images from URLs (Flickr included)
- Allows you to fetch a screenshot of a webpage with one click

**Cons:**
- No keyboard controls, and no arrow buttons for linking and pointing.
- Hyperlinking and zooming is not allowed.

Who is it for?
Scribblar is not ideal for professionals, but could be useful for students.

Pricing
With the free plan, you get a limit of max 2 users per room, and just 5 page documents with a limit of 3 MB per file.
2. Diagram And Charting Tools
Cloud-based diagram and charting tools are becoming increasingly popular among businesses. Visualisation of data and real-time discussion over analytics is the need of any business today.

LUCID CHART
www.lucidchart.com
Lucid chart has a highly extensive shape library, and also seamlessly integrates with Google Apps, Confluence, etc., and is a good charting solution.

Pros:
- Highly intuitive drag and drop interface.
- Extensive shape library allowing you to quickly make ipad UI mockups, flowcharts, floor plans, venn diagrams and more.
- Real-time collaboration
- Create image libraries once and share across users.
- Publish documents to web pages, diagrams to web sites, wikis etc.
- Robust backup and revision history in pro version.
- Seamless integration with Google Apps, Jive, Jira, Confluence etc.
- Only one to allow Microsoft Visio Export/Import.
- Way cheaper than Microsoft Visio with competitive features.
- Comment and chat options.

Cons:
- No Facebook integration.
- No contextual toolbar / right-click menus
- Idiotically restrictive for a free user

Who is it for?
Lucid chart is great for freelancers, developers, SoHos, and those who want Microsoft Visio-like features for cheaper. With the shape library contents, it’s ideal for mobile apps, UI designers, architects and almost anyone who needs extensive flowcharting capabilities.
Pricing
The free version is just stupid, it gives you the option of only a single user, and thus you can only check out the interface and not really collaborate with anyone else for even a limited time. Also limited to 60 objects per diagram and 25 MB storage space. The most popular pricing is for the Team License, which allows between 5 and 300 users.

CREATELY
www.creately.com
Creately is a web application that allows almost 23 diagram types with a wide range of features that make it a good pick for web site designers and developers.

Pros:
- Allows tagging of diagrams within a project.
- Contextual toolbar with each object making editing objects easy and fun
- Extensive shape library
- Allows fetching images from Google Images & IconFinder.com.
- Provides templates to start quickly.
- Allows you to embed diagrams into other web pages, and automatically syncs any changes you make to your diagram.
- Integration with Google Apps and FogBugz
- Offers community-made diagrams and templates
- Supports code generation to embed directly into web sites.

Cons:
- Drag and Drop is not that fast and efficient.
- No private diagrams in the free plan.

Who is it for?
If you just want some quick diagrams for your school project, Creately is a good option. Also, if you are willing to spend and buy the 1 user license, you can get access to unlimited private diagrams. Ideal for website designers, developers or UI designers.
Pricing
Creately has a free public plan that offers 5 public diagrams, 1 user and 1 project and fortunately the free plan is feature complete. There is a personal plan which allows unlimited private diagrams at a price of $5 per month.

CACOO
www.cacoo.com
Cacoo is another tool with a powerful free version for flowcharting and wireframing. Cacoo's uniqueness is in its user-driven store from where you can buy more shapes, stencils and templates.

Pros:
- Has a Cacoo Store online where you can purchase more shape kits such as Gesture Icon kit, Icon kits and templates, both free and priced.
- Provides unique shapes for ER Diagrams and thus suited for database designers.
- Provides shapes for Electronic Circuits
- Strong and active community
- Automatic grid alignment
- Integration with Google Drive

Cons:
- No contextual toolbar
- Bad user interface
- Does not allow fetching of images from Google or IconFinder directly.

Who is it for?
Cacoo is ideal for UI designers, circuit designers and database designers. With specific business templates available on Cacoo store, it is also great for managers, HR professionals etc to make organizational charts etc.

Pricing
Cacoo's free version allows you to use 25 sheets and 3 exports with additional 5 exports if you refer to a friend. Free version doesn't support vector exports, so you cannot export as PPT, PDF etc.

There are many other popular services such as HotGloo which is unique in a way that it focuses on responsive wireframing. Gliffy is unique for offering integration with Microsoft word 2013. Pidoco is a tool which is very
ideal for rapid application prototyping. So we leave you with these options and you can choose what suits your needs best.

3. Web Meeting Services
With global teams, improving internet speeds, web meeting services are becoming essential tools. Personally, also, these tools are a great way to keep in touch with friends and family across geographical distances.

**SKYPE**

Skype is one of the most popular web meeting tools, specifically for one-to-one meetings. It’s neat, fast and efficient.

**Pros:**
- Great for one-to-one meetings
- Acts as a calling card, can call any phone number as a paid customer.
- Very fast and efficient
- Skype has rooms which are of a great networking value to people.

**Cons:**
- Not very good for one-to-many or many-to-many meetings.
- Needs to be installed on all devices.
- No group video chat for free users.
- Complicated proxy settings for users using Skype behind a proxy server.
- Does not allow viewing of video inside the chat box.
- Does not allow scheduling meetings.

**Who should use Skype?**
If you need one-to-one video calling and don’t require scheduling in advance, then Skype should be your first choice. It’s great for friends, start-ups and casual users who do not need any extensive video conferencing features.

**Pricing**
Skype is free for one-to-one calling. For group video chat, you have to be a paid subscriber.
GOOGLE HANGOUT
When Google Hangout was launched recently, other web conferencing solutions faced a huge competitive threat. With free group video chat for up to 9 users and unique “On Air” live streaming feature, Google Hangout immediately became one of the most popular video conferencing tools.

Pros:
- Great for one-to-many or many-to-many meetings.
- Video Chat is free with up to 9 users.
- Can stream live with “On Air” feature for people to watch live on YouTube.
- Integration with Google Drive
- Allows adding videos in the chat box.
- Allows scheduling a Google Hangout with Google Calendar.

Cons:
- User needs to logged in to Google to be notified that there is an incoming call, or needs a chrome plugin to enable notifications of incoming calls.
- Google voice calls to mobiles are available only for the US, while you can call anywhere in the world with Skype.
- Less secure than premium solutions.

Why you should use Hangout?
Hangout is one of the best free solutions available for video conferencing today. So if you are a startup or a group of friends doing a project together, Hangout is best for you.

Pricing
Google hangout is free up to 9 simultaneous users in a video chat, which is better than many other competing premium options in the domain.

ZOHO MEETING
Zoho Meeting lets you conduct online meetings without installing anything. Frequent users can download an optional desktop plugin.
Pros:
- Schedule meetings in advance as well as set email reminders.
- Add your company’s logo and name for a more professional experience.
- All you need is a browser to join a meeting.
- No proxy struggles since it’s browser-based
- Give control of your desktop remotely to guests/customers.
- Supports multi-language and timezones.
- Seamless integration with other Zoho Apps as well as Google Apps.
- Record sessions, generate reports and set agendas for meetings.
- Paid version allows switching presenters with in a meeting.

Cons:
- Interface is not very modern
- Requires Java Plug-In
- Free plan has limited features.
- No Live Streaming.

Why you should use Zoho Meeting?
Zoho meeting is a good choice if you are looking for a browser based one-to-one free video conferencing solution that allows remote desktop control. It’s good for startups giving a quick presentation to a client, or for short duration training purposes.

Pricing
Zoho’s free plan allows 1 host and 1 participant and a limited meeting duration of 1 hour. It has other premium and corporate plans too which have additional features such as switching presenter and personalised branding.

PREMIUM WEB MEETING TOOLS
There are these highly secure and professional web meeting tools that have paid versions only. GoTo Meeting and WebEx are the most popular. These paid tools provide additional features such as speaker identifications, drawing and highlighting on screen, centralised control and moderation, remote control of mouse and keyboard etc. These paid tools are best suited for large businesses and professionals. WebEx also provides tools such as
whiteboarding that facilitate better group discussions. Other than GoTo Meeting and WebEx, there are more complicated and expensive ones such as Adobe Connect and Fuze Box.

4. Mind Mapping Tools
Cloud based Mind mapping tools are a great way of doing collaborative planning and brainstorming. There are various dedicated tools for mind mapping when it comes to collaborative cloud based setup. Some of them are simple, others are a bit complex. Let's discuss some popular mind mapping tools.

Coggle
Coggle is a browser-based mind mapping tool which is very simple and neat. It's great for simple mind maps with multiple node hierarchy. The only downside of Coggle is that it doesn't allow deleting nodes very easily by backspace which is common in other mind mapping tools. Coggle allows you to collaboratively edit the mindmap after sharing it with a friend.

Mindmeister
Mindmeister is another web-based free tool for mind mapping which has more complex features than Coggle. It allows importing images to mind maps, hyperlinking mind map nodes and taking notes. It also allows you to collaborate in real-time with more people adding and sharing ideas. It also allows a unique playback feature which stores and shows the change history of a mind map, preventing you losing any changes. It also allows adding files to nodes as well as managing and assigning tasks. Mindmeister is best for you if you are up to some serious planning and brainstorming involving links, images, notes and deeper discussions.

5. Collaborative code management
With cloud-based apps being prominent in every other domain, code management is one place where it is most useful to switch to code management
in the cloud. Managing code in the cloud allows robust collaboration and integration, better issue tracking, elastic code repositories, better backups, more reliability and deeper collaboration within the team. Let’s discuss some popular cloud-based code management tools available to us.

Sourceforge and Google Code both allow only open source projects and no private repositories. They provide git, subversion and Mercurial repositories with collaboration tools such as issue tracking and wikis. Additionally, Sourceforge also allows reviewing and rating of repositories.

Google Code is better than Sourceforge if you just want to set up a project and quickly get it up and running, as sourceforge requires you to apply for the project and wait for approval. Also, with Google Code, the landing page of the project can act as a website and helps in better Google Ranking of your project page. Since most people have Google accounts, more people can post issues with the project if you are using Google Code. One major downside of Google Code is its ugly interface.

Github, though a relatively new player in this domain, has become increasingly popular due to its social and agile nature. Github only provides Git repository, so unless you really hate Git as a program, Github is one of the best code management tools available today. Also, Github provides both private and public repositories. Public ones are free but private ones
are charged according to the plan you choose. If you are a freelancer or a start up, the micro plan with 5 repositories is best for you at just $7 per month. Github has advanced code discussion areas, ability to watch projects similar to Facebook check-ins, an awesome diff viewer and an easy forking process.

Github also has a network graph that allows visual representation of forks and merges. It also has a GUI tool for both Mac and Windows to save you the hassle of command line interface. The only downside of Github is that its landing page can be a little complicated for newbie or non-developers.

Bit Bucket is pretty much the same offering as Github but supports mercurial repositories. If you have no prior experience with either git or mercurial, go for git and Github for open source projects. Github is a highly active community and getting contributors to your projects is way easier than Sourceforge, Google Code or Bitbucket.

For private repos as a single developer, Bit Bucket is a better choice only if you do not want to spend, as it allows unlimited private repos and charges you per collaborator. Work out the costs according to the amount of coders and repositories you have and need.

If you are OK with sparing 7$ a month, we would recommend going with github for private repos also as it has better features such as faster forking, network graph, inline editing, blame etc that may prove crucial in your development process.

With the cloud, collaboration has become easier, real-time and seamless in all domains. If you are not using some of the services discussed in this chapter, you are missing out. We recommend you go out and try some of these services, and get started with allowing the cloud to help you collaborate, share and learn.
PHOTO-EDITING IN THE CLOUD

Natively installed apps aren’t your only option when it comes to having fun with pictures.

We all love taking pictures. We love editing them more and believe us, not everyone fancies the complex set of tools such as Adobe photoshop for doing that. When you just want the picture to be a little more lit before you upload it as your facebook profile picture, you look for tools that can do this for you quickly. Fortunately, there are many services today that let you do this rather simply. Let’s take a look at what they offer.

**GOOGLE+ Creative Kit**
https://plus.google.com/

When Google announced that they bought Picnik and subsequently shut the service down, a lot of picnik fans became sad. Picnik was one of the finest cloud based photo editing services available around that time. Later, Google announced that picnik will be incorporated as part of Google+ Creative Kit where you can edit your photos uploaded on Google+.

You can log-in to your Google+ account and go to photos sections. On the top of the photo you can see the “Edit” button which takes you to the Creative Kit that takes some time to load. You can then choose from variety of effects,
basic editing, exclusive effects such as sun aged photos etc and a lot of decorations/stickers to choose from. Since you’re using google+, you have access to all your blogspot and Google Drive photos for quick editing. If you have to edit a photo not already available in photos sections, you will have to upload it.

Google+ Creative Kit does not fully cover even all the features provided by Picnik especially the collage making feature. Another downside is that it is very slow and takes long loading times. Often, it gives memory warning stating that Picnik is running out of browser memory and you need to restart your browser. It does not allow editing multiple photos at a time, though editing multiple photos is a very rare feature even in other programs. It’s disappointing to see that a company like Google is struggling to do justice to an online image editing program. If you are not a Google+ fanboy, we don’t really recommend using the Creative Kit for image editing when you have better alternatives available.

**PICMONKEY:**

[www.picmonkey.com](http://www.picmonkey.com)

PicMonkey is a great tool when it comes to online editing of photos. Starting from it’s simple landing page allowing you to drag pictures to start editing or making a collage to extensive options in the Royale or paid edition, PicMonkey is an extremely simple tool to start with. PicMonkey has all the basic features for photo editing such as frames, clip art, text etc along with some really unique ones such as Textures and unique touch up effects. Texture allows you to add textures to your photos using blend modes similar to photoshop. Touch ups are really cool allowing you to add lip color, eye shadow, teeth whitening and even weight loss to your photos.

The collage feature of PicMonkey has really cool templates such as Facebook cover picture etc but adding effects to specific photos of a collage is restricted to premium users. The in-collage sections have fluid resizing making it super easy to get the look you want. PicMonkey also allows you
to save your edited files in 3 different quality levels. So if you want small files that can be easily uploaded on web. The crop tool of picmonkey is smart as it allows cropping in exact size or ratio which is a huge need of website designers. The text feature of picnik is also pretty fancy fonts and easy editing. PicMOnkey has a very usable user interface and thus usability is one of the best things about it.

The only disappointing thing about PicMonkey it that it keeps prompting you to upgrade to Royale version whenever you choose any Royale effect/texture during your editing process. Being a web app, it does not allow saving in-process files, you have to finish editing in one go and you can only save as images. When it comes to performance, PicMonkey is fast and efficient. It also allows direct sharing of edited photos to Facebook, Pinterest etc.

Another downside of PicMonkey is that it does not fetch photos directly from Facebook flickr etc which is a must feature for online editing tools today. Other than this crucial feature missing, PicMonkey is a great tool if you want to quickly enhance your pictures.

**Fotor**

[www.fotor.com](http://www.fotor.com)

Fotor photo editor is one of the coolest in this list. It’s free, it’s cross-platform, it’s feature-rich, it’s intuitive and it’s simply awesome. Its best feature is that it fetches photos directly from whatever account to link it to, be it facebook, flickr, Picasa or anywhere else on web. This makes it super easy to get started, especially for collages. It also allows you to instantly compare the original and edited versions of images.

It has 4 Broad sections: Photo Editing, Photo Collage, Photo Cards and HDR.

- **Photo Editing** is the basic photo editing tools section with one tap enhance, crop, color change features etc. It also has very cool frames, text options and a wide range of effects, all for free.
Photo Collage is a great feature in Fotor. It has a unique addition called funky collage where you can experiment with different shape collage frames if you are bored with simple square or rectangular frames. Fotor has easy drag and drop interface for dropping images on collage frames and has contextual toolbars for applying various effects to individual photos of the collage. It also allows Montage type of collage with a unique button called “Random” which randomizes the placement of photos on the montage. This section also has a horizontal and vertical photo-stitching feature which is also a unique offering of Fotor.

Photo Cards section in Fotor makes it a cakewalk for you to make occasional photo cards for your friends and family. Be it for Birthdays, Mother’s day or anniversary, Fotor photo card templates are lovely. You can quickly add your personal message and share the postcard on Facebook etc.

HDR section in Fotor allows you to use the old HDR photography technique for your photos for free. Just upload 3 photos of same scene/object but different exposures to photo basket and Fotor will do the rest for you. You can adjust certain values and switch on Ghost reduction if there were some moving objects within the three photos.

In short, there is nothing about Fotor which is disappointing. Its simply a great online photo-editing software available completely free. Unless you are looking for complicated Photoshop level control of editing, Fotor is best for you. Also, it has an additional Fotor Banner tool which you can use to make cool banner images.

AVIARY

www.aviary.com

Aviary is a cool app for mobile devices running on iOS or Android. Its a simple lightweight app for mobile devices with limited basic image editing features. It simply access your camera roll or asks you to take a picture and you can quickly edit it, add effects, frame, stickers etc and share on Facebook.
or flickr. The only downside is that a lot of content in the app can be access through in-app purchases meaning you have to spend to buy additional effects, stickers etc. It has a unique feature called “Meme” where you can quickly add top and bottom text to make your image into a meme. Also, you can simply hold to see the unedited version your image anytime during your editing process.

Aviary if great for you if you want a simple yet powerful image editing tool for your smartphone or tablet.

**SUMO PAINT:**

[www.sumopaint.com](http://www.sumopaint.com)

Sumo paint is one of the best free solutions if you need a complex image manipulation tool similar to Adobe Photoshop. Sumo Paint has an interface similar to photoshop and allows layer based editing. It is limited to upload from computer import option which is a downside of using Sumo Paint. But it allows you save in-process files you are editing as.sumo files which you can import again and continue editing some other time. This is crucial for longer edit cycles and is a feature not provided by any other software in
this list discussed above. Sumo paint has numerous brushers, filters, editing tools, shapes etc and Sumopaint.com is a highly active community if you want feedback for your work. The online version is free but the desktop application is paid.

Sumo Paint is little complex for non-software friendly people and unless you need some serious editing work for your images online, prefer other options such as Fotor. Sumo Paint is good for UI designers, artists, art students etc.

**Adobe Photoshop Express Editor:**

<http://www.photoshop.com/tools>

Photoshop Express Editor is an online image editor by Adobe which provides quick editing tools with some great effects such as Crystallize, Sketch, Hue Change etc. It has some great features including full screen toggle mode which is great to suspend the browser feel of the tool. One feature missing is adding text to photos, which is important to most people.

Though from Adobe, Express Editor has some serious downsides when compared to other tools. It allows only jpeg images to be uploaded with a limit of 10MB per file. It has just one import option that is “Upload from your computer”. As with other web apps except sumo paint, it does not allow you to save in-process files you are editing.

Another major issue with Express Editor is that in order to use it, your browser must support Flash 9, thus making it unavailable for iOS devices. Though adobe has a photoshop express app for iOS devices, there is no interoperability with the browser version. Adobe also has an app called Adobe Revel which is great for syncing and storing your pictures among iOS devices.
Office productivity in the cloud

Office suites have traditionally been something to pirate and install. But now reasonable pricing and the shift to the cloud has brought with it many benefits and many players.

Working remotely and on collaboration basis, where people had to edit may be the same file, share their ideas and work-in progress in real-time became essential in the Enterprises of today. The tedious process of downloading a file, editing it and uploading it all over again was so time consuming that more time goes into managing these files than the actual work.

The dynamic start-up culture that Enterprises adapt these days and the team generally being spread around the globe increased the need for collaborative cloud-based Office productivity tools.

There are a lot of major players in this domain including giants like Google and Microsoft; but you’ll be surprised to find some of the office productivity tools from start-ups that just as good.
1. Google Apps:

Let's start with one of the most used office tools - Google Apps. Google Apps is a culmination of all the awesome services that Google already provides like Gmail, Drive, Calendar, Hangout, Quickoffice (for mobile) and in addition to that the freedom and flexibility to customize all these according to your enterprise needs.

**Features:**

**E-Mail:**
- A custom Gmail id that lets you operate all your office email from a Gmail account. The ever-engaging and simple UI, the powerful search, the chat system; all would be part of your office email now.

**Calendar:**
- An integrated calendar system with your email.
- Share your calendar with others or even publish it on to web for others to know your schedule.
- Various widgets like “Free or Busy” - which basically helps you track the calendars of people whom you closely work with. This lets you know they might be free according to their calendar and you might just pop in for a small chat or a meeting.

**Google Drive:**
- This is the mainstay of the productivity suit. It includes what was formerly known as Google Docs which provided applications for spreadsheets, drawing, presentations and word processing.
- It features seamless real time and often collaborative editing within of all the above services.
- Can be accessed from any browser on any mobile device.
- Maintains detailed revision history of all the changes.

**Hangout:**
Hangout is one of the most used and effective video calling tools on the internet allowing up to 10 people in one video-call. This is integrated into the Office experience which makes collaborations and meetings seem easy.

Hangout as part of Google Apps have the following features:
- In the initial plan, allows up to 15 people in one video call.
Office productivity in the cloud

- Allows real-time editing of any Doc/Slide/Sheet along with a Hangout session.
- Integration of Hangout with Calendar allows to plan calls depending upon the person’s schedule.

Of course there are many more services but the ones above are the most important. Let’s look at pros and cons now.

Pros:
- Along with Google Apps comes the powerful search of Google, the power of prioritizing thing, categorizing them and easily arranging them and an uninterrupted service guarantee.

Cons:
- Only 30GB of space for Drive/user and 10GB limited space for sites/user in the basic initial plan is provided.
- The individual services such as Drawing and Sheets don’t have very detailed features when compared to collaborative drawing boards and Microsoft’s Excel.

Who is it for?
Google aims to target both small scale and large scale enterprises with Google Apps. But, right now it might suit small enterprises better than the large ones due to the lack of detailed and customizable features in the individual services.

All of this is priced at about ₹150 per month per user for businesses. Of course for individuals many of these features are free to use and come as part of your Google account.

2. Microsoft Office 365 For Business:
Web: http://office.microsoft.com/en-IN/
Microsoft is betting big on cloud. It brought one of it’s biggest Office Enterprises - Microsoft Office onto Cloud through Office 365. With it, users need
not download native software like Word, Powerpoint; instead these services can be used on a subscription basis.

**Features:**
Microsoft created web apps for all of their native applications which users can use as part of Office 365 subscription. The centralized panel which Office 365 provides is pretty simple, impressive and easy to use. The panel connects the users to SkyDrive, Word, PowerPoint, etc. Office 365 for Business has three different pricing plans and the following features:

**Office Applications:**
Microsoft Office applications that include Word, PowerPoint, Excel are till date the best on the globe and with every version of Office 365, users get the web applications of these products.
- Multiple editing on a single file is allowed.
- Real-time editing is not allowed. One cannot see in real-time the changes another author is making on a same document unless he/she saves it and stops editing. The part of the document being edited is locked from edit for all the other users.
- With desktop applications, files can be used and edited offline. Once the user goes online, SkyDrive automatically syncs all the versions on all devices.

**Conferencing and IM:**
- Office 365 allows users to do web conferencing by connecting to Lync.
- Skype users can also be invited.
- It provides standard IM service too.

Of course there are some more services such as MS Project etc but the ones above are the most important. Lets look at pros and cons now.

**Pros:**
- Files can be edited offline with the help of native desktop applications and synced with other versions online once online.
- Office applications like Word, Powerpoint and Excel are the best in terms of features when compared to any other applications in this domain.
- Better centralized panel where Newsfeed and other user activity can be tracked.
Cons:
- Google Drive allows real-time editing and SkyDrive doesn’t. In SkyDrive one has to save the changes for it to get reflected in all the other’s versions.
- Pricing-wise, Office 365 is more expensive.

Pricing:
- There are various subscription plans that suit businesses of all types. The basic plan which includes online-only versions of all Office applications costs Rs. 215/user/month and supports up to 25 users only.
- Office Pro plus plans are also available which includes Project Pro and more secure e-mail and file systems.

Who is it for?
- Targeted to aim at all types of businesses. But, might be more useful to big enterprises where applications like Microsoft Project, Excel are extensively used.
- Also suitable for Businesses who cannot operate online all the time. Office 365 allows native desktop/mobile applications where the files can be edited offline.

3. Zoho Office Suite:
Web: https://www.zoho.com/
Zoho Office suite is an alternative to Google Apps. It provides all the apps that are provided by Google and in fact a little more. All these Apps are web-based cloud applications. Following are some of the wide-range of web-based applications Zoho Office suite provides for Businesses:

Zoho Docs:
- Zoho Docs is very similar to Google Docs (now Google Drive). It provides real-time creation/editing/collaboration of documents, spreadsheets, presentations. It also supports embedded media from hosting sites like
Flickr, Picasa, Youtube. Zoho Docs also allows direct publishing of text/charts/diagrams to blogs and other websites.

**Zoho Projects:**
- It is project management software that allows users to create and manage tasks and mini tasks and assign people respective ones.
- Zoho Projects internally have Time-tracking software, Bug Tracking Software, Project Reports, Project Calendar and meetings.
- It allows sharing of files and with integration of Zoho Docs, sharing and editing stuff is very easy.

**Zoho Meeting & Chat:**
Zoho allows web-conferencing with users of the same Organization; allows sharing desktop and files.
- Doesn’t require any native applications; completely web-based.
- Number of people per session depends upon the subscription model and ranges from 5 users/session to 100 users/session.
- Zoho chat allows users to live chat with their customers, overview chats of sales department and intra-chat within employees.
- Zoho chat is integrated with Google Talk, Yahoo Messenger and Facebook.

**Zoho Discussions:**
- Provides templates for forum creation and managing comments, mini-forums and topics.
It allows integration with Google Apps and seamlessly shares documents, spreadsheets from Google Docs.

Zoho discussions is customizable and can be suited according to brand identity of Organizations.

Beyond all of the above there are many more offerings from Zoho. If you want to get a quick idea of all of them head on to our thinkdigit article on Zoho here: http://dgit.in/zohotd For now we’ll quickly get into the pros and cons.

Pros:
- Zoho Office suite appeals to almost every office need possible in an Organization and has the largest number of applications when compared to any other Office suite including Google Apps
- Each individual application has individual subscriptions. Hence, the Organizations can choose the ones that they presently need.

Cons:
- Looks quite old-school, which is not the case in terms of functionality.

Who is it for?
- As individual apps can be subscribed individually, it might be suitable for Organizations of all sizes and kinds.

Pricing:
- There’s a free version of every individual app and has reasonable limitations. If you have a very early stage start-ups, these might not even be limitations to you and can be used full-fledged for free.
- There are a lot of subscription models.
Cloud Hosting

With cloud computing came scalability and an era of on demand hosting resources. Here we look at some of the players in this space.

Cloud hosting is the new, scalable and efficient way of hosting your software without having to worry about the hassles involved in server space, downtimes and other niggles. Cloud hosting is about hosting your applications using well-monitored virtual servers in the cloud without any physical space limitations. With cloud hosting, you are free to scale any tier of your technology stack without worrying about the storage or resource usage limit. Cloud hosting is thus more scalable and reliable than traditional hosting.

With Cloud hosting, developers get access to powerful infrastructure of Google, Amazon and other players without having to worry about maintaining and buying their own servers. Cloud Hosting is highly scalable and is gradually getting affordable. If you’re hosting your application on cloud, you don’t have to worry about the storage space limitations, load peaks or high one time costs. The pay per use model also makes it easier to execute pilot projects. Security is a major concern when it comes to cloud hosting.
Even in case of private cloud, it is always suggested that you add your own layers of security on the servers for a highly secure system.

Cloud hosting has three basic service models:

- **Infrastructure as a Service (IaaS)**: The hosting service provider/vendor is only responsible for the computing infrastructure and hardware.
- **Platform as a Service (PaaS)**: The hosting vendor is responsible for hardware as well as the computing platforms such as OS, execution environment, web servers and database.
- **Software as a Service (SaaS)**: With SaaS, the vendor is responsible for providing you access to on-demand software as a consumer. You don’t have to worry about how the application is running. Examples include Google Apps, Office 365 etc.

There are numerous cloud hosting service providers and the choice of hosting service provider depends on various factors. At a glance pricing looks pretty much the same among all services but when you go into the details, you will find differences that may help you minimise costs with a particular service.

Major concerns while evaluating any cloud hosting service for you should be Auto-Scaling, Scalability, Elastic Storage, Maximum Uptime, Back up, Monitoring, Pricing and usability of the control interface. Support is another criterion if you are a start-up and you don’t have an entire team sitting on for solving hosting and sys admin issues.

By and large, Amazon EC2 is the most popular among start-ups with huge companies such as Netflix, Dropbox etc hosting all their servers with Amazon. In this chapter, we discuss some popular cloud hosting service providers and what they have to offer.

**AMAZON EC2**

[aws.amazon.com](http://aws.amazon.com)

Amazon Elastic Compute Cloud is a cloud hosting platform offered by Amazon through Amazon web services. Amazon EC2 provides a basic plan of 0.08$ per hour and is based on IaaS (Infrastructure as a Service) model. It gives you a well laid out Control Panel, an API and both Command line and graphical user interfaces to manage and control your servers. The base plan offers 1.7 GB RAM, 1 EC2 Compute unit and 160GB of local storage with options of both subscription as well as pay as you go payment modes.

Amazon EC2 is feature-rich and has 99.9% guaranteed network availability. It allows you to set custom permissions, privacy settings, advanced
firewall and other security features that make it robust and secure. Some security features such as Data Encryption and Intrusion Detection are available but with extra charges applicable. Amazon EC2 has autoscaling and monitoring enabled for free but there is extra charge for load balancing. Auto Scaling allows you to scale your Amazon EC2 capacities in busy hours and scale down in low demand hours to minimize costs. With monitoring a service called Cloud Watch, you are informed automatically if there is any slow or failing component. With Elastic Block Storage, you need not resize your servers every time you need additional storage space on one instance.

Amazon EC2 support is said to be not that robust. But in spite of and a few recent instances of outages, Amazon is still one of most preferred choices when it comes to cloud hosting.

**RackSpace**

[www.rackspace.com/cloud/](http://www.rackspace.com/cloud/)

Other than Amazon, there are numerous player in this market, who could be collectively clubbed as “others”, but Rackspace has still made it possible to standout and be a preferred service for lots of companies. RackSpace is built on the OpenStack cloud computing platform which allows users flexibility and more freedom as its open-source. RackSpace tool is an IaaS based service and has almost 99.9% uptime.
RackSpace also has live chat support which the big guys don’t seem to have. Price-wise Rackspace is cheaper for low-end server instances which often may be all that you need for your application. Also, taking backups is easier with RackSpace with just few clicks from their web interface.

Rackspace also has the distinction of operating with standard terminology – servers are servers and not instances, backup is simply a backup not “snapshot”. This makes things easy for those new to cloud hosting.

**Google App Engine**

[https://appengine.google.com/](https://appengine.google.com/)

Google App Engine is the Platform As a Service (PaaS) offering of Google using which you can host your application on Google servers, essentially on the cloud. Google App Engine gives you access to Google APIs and more importantly, it is free up to a certain level of consumed resources.

Google App Engine supports only Java, Python, Go and at some level, PHP. Also it is not suitable for CPU intensive operations. People often confuse and compare Google App Engine with Amazon EC2 service which is unfair. Google App Engine is a PaaS based service which is fundamentally different.

With Google App Engine, developers get access to Google’s own powerful infrastructure.

One plus of GAE is that it provides Google Cloud SQL, a relational database based on MySQL.

GAE is great for small companies and hobbyists.

**Luna Cloud**

[www.lunacloud.com/](http://www.lunacloud.com/)

Luna Cloud is another startup focussed Cloud Hosting vendor which has come up in competition to Amazon and RackSpace. Luna Cloud’s official website gives a direct comparison between Luna Cloud, Amazon and RackSpace. Luna Cloud aims at startups and smaller companies who need short term services for their pilot projects. They do this by simplifying
long term contracts, resulting in a 20-30% less costs when compared to the bigger players.

One of the best features of Luna Cloud is that it allows you to resize servers without having to reboot each time. They also claim a minimum time of eight seconds for setting up a server.

Luna Cloud is an upcoming service and it will take consistent innovation for the company to stay ahead in the cloud hosting wars.

**Google Compute Engine**

https://cloud.google.com/products/compute-engine

Google Compute Engine is the recently launched IaaS offering from Google. It introduced sub-hour pricing which means that now users don’t have to buy a full hour of a server but just a minimum of 10-minute slot for instances.

Users don’t have to buy a whole hour of an instance, but can buy instances by the minute with a 10-minute minimum which is very useful for small developers. GCE also allows shared core instances for low workloads and provides persistent disks that support up to 10TB per volume which is way more than industry standard. GCE is reliable, fast and has amazingly fast server launch times. GCE comes with a great command line utility which makes it easier to do tiresome actions in just one command. It also gives user level access to each server and has secure firewall rules.

Though Amazon has been in IaaS domain since long, GCE seems to be one real competitor. Its has exceptional performance and infrastructure that runs mass scale apps such as Gmail.
Microsoft Azure

www.windowsazure.com/

Microsoft is another player in this cloud hosting war. Azure is Microsoft’s IaaS offering which allows adding virtual machines and almost all capabilities of a IaaS set up.

With Windows 8 modern Interface, Azure Interface is neat and intuitive. It supports Linux along with iOS and Android, which is great and the entire interface is lightweight and loads fast. It offers various useful integration with great apps especially Hadoop, PhoneGap etc. Azure provides infrastructure with pre-compatibility built in with other Microsoft technologies such as .Net Framework etc. Azure has been improving continuously since its inception and has seen significant price drops.

We leave you with a wide range of options for hosting your application on Cloud. Since it’s slightly complicated and securely, we suggest that you take some time to try these services before choosing one outright and setting up your entire back-end. Some of these services have vendor lock-in syndrome, meaning that it is difficult to switch to another cloud hosting service provider once you’re using one. However great the abstraction is, there is still some intrusion of each specific vendor in how your application is set up.
These services cover everything from time tracking, invoicing, survey tools, and project management to CRM tools. Here are our top picks.

SoHo (acronym for Small Office/Home Office) refers to organisations that are not very large. Generally thought of as the smallest of the smallest businesses, they generally have an employee base of less than 10. This is one of the most common way in which startups operate nowadays, making this category of organizations quite important.

SoHo/Early stage startups require software tools that are very easy to operate customisable and are not that tedious.

Following is a selection of few of the best cloud-based applications for SoHos:

**I. Time-Tracking Cloud Apps:**
Even though SoHos are pretty small in terms of employee base and are believed to be working on odd time schedules and also believed to be working all the time, these Organizations need time tracking apps.
The basic requirement for these time-tracking apps would be to track how much time actually the work was being done (removing the lunch/snacks/smoke time) and tracking what tasks/mini tasks were completed and achieved and how much time did it actually take.

Basically a software/app that helps in personal management. If the app could also generate some reports and graphs as to where maximum time was spent this week/month; that would help in maintaining progress about everyone and also will help spot the guy who sees cat videos all day and pretends to work!

Following are some of the time-tracking management software that can be useful if you are a SoHos:

1. **Time Doctor:**
   Web: [http://www.timedocto](http://www.timedocto.com/)

   Time Doctor is one of the most widely used time tracking software presently. Apart from Organizations a lot of freelancers use it too for accurate time tracking and clients prefer it too for getting billed for the accurate time.

   Time Doctor is simple to use and has a clear motive - To track how much of time is spent in each task and how many hours of actual work has been done in a day/week/month.

   **Features:**
   - Native Application has to be downloaded, which has a simple interface where you make a couple of things-to-do and select the one on which you are currently working.
   - The software tracks the amount of time user is working and generates a user activity profile for each user which can be accessed by going onto their website and signing in.
   - It even monitors what the user is doing on the device. It keeps track
Cloud Services for SoHos

- The user activity profile on their website lists out where all the user spent time in a day, the amount of break time, the amount of youtube watching time, etc.
- It analyses the data and generates reports out of these user activity profiles.
- The native app works even when you are offline and syncs once you are online.
- Allows Integration with Google Apps, Basecamp

Pros:
- A simple app without any need of complication. Set a list of tasks and start working.
- App is very customizable and hence can be tweaked according to the requirements.

Cons:
- Cannot write notes/pointers about each task. Hence, will need to maintain another project management tool for maintaining mini tasks and notes.
- In the default mode, it keeps bugging the user when the screen is left idle for a few seconds with “Are you still working?” comments; which gets irritating.
- The reports and user activity profiles can be accessed only in the Premium mode. The free mode only allows you to use the native app and tracks the total amount of time the user has worked in a day/week/month; but doesn’t give detailed info about each task.

Price:
- Free version has limited features available.
- Solo Version costs around 5$/month and is devoid of the monitoring features.
- The general premium version which costs $9/user/month, gives all the features of tracking, monitoring and user activity report features.

Who is it for?
- Solo version suits freelancers pretty well. But doesn’t allow maintaining notes for each task; so you will end up using something else along with this.
- It has extensive monitoring features and hence can work for you if you are working with a remote team.
If you are working with an in-house team, you’ll have to do some tweaking with the settings if you don’t want your team mates to feel that you are trying to monitor them.

Due to availability of a free version, SoHos who don’t want to invest much in time tracking can use this app.

2. Office Time:
Web: http://www.officetime.net/
Office Time is not only a time tracking software but also helps in invoicing and billing. It has some more functions when compared to Time Doctor. So, let’s have a look at what it has to offer:

Features:
- Has a native desktop/mobile app which takes care of time tracking.
- Users can make a list of tasks that they intend to do and select the one they are presently doing.
- Office Time allows its users to write comments and make mini tasks and write notes about each particular task, which increases productivity.
- It also allows users to set hourly rate for each task assigned. This can help when freelancers are billed and invoices are made.
- Allows multiple projects to be added and tasks inside these projects. The switching from one task to another is simple and elegant.
- Generates reports according user activity profiles.

Pros:
- The ability to take notes and comments.
- Easy invoicing/billing according to the work done
- For viewing reports, users need not go onto their website. Reports are generated from inside the native app itself.
- Tweaking/editing of time is simpler in this.
- No creepy monitoring features.
Cons:
- Less number of monitoring features
- No per month subscription model. have to pay for the software in full for once.

Price:
- No free version. Trial version available for 21 days.
- One time cost of Rs. 3200 (appx) for once.
- They promise refund of all the whole amount if users are not satisfied within 120 days of purchase.

Chrometa:
Features:
- It is a web app. It requires users to download and instal a native app also, which keeps uploading data to the web app.
- It tracks each and every activity of the user and also tracks what document the user was reading or which website the user was browsing.
- Can add projects and tasks and track time according to each task
- Allows users to set rate for each task and shows the billed and unbilled amounts clearly on the web app.
- Creates report, charts based on the user activity

Pros:
- Tracks each and every user activity by itself. Hence, a clear estimate of how long each task was worked upon.
- The billing and invoice part is better than the other apps.

Cons:
- To view tasks and make any changes, user needs to go to the web app. The native app only monitors all the user activity.
- Sync takes place after every hour! If immediate syncing is required, user has to manually upload the data.
- The whole structure of web app and native app makes it too complicated.
- More focus is on monitoring than on adding tasks, projects.

Price:
- No free version
- Basic version costs $19/user/month and no invoicing feature in this. It allows registration of only a single device per user
The minimum version with invoice features costs $29. Allows only 2 device registration per user.

Who is it for?
- Maybe useful for Organizations who want to monitor each and every activity of the user for exact billing.
- Not suitable for startups due to high pricing and complex UI.
- Not suitable for dynamic Organizations which focusses on just time tracking and not user monitoring.

II. Invoicing & expense management software:
For any startup Invoicing and expense management is very tedious and kind of a liability. These SoHos do not have huge budgets to invest on huge accounting software; neither do they have the budget to hire someone just for accounting. For a SoHos, with some basic level expenses and income there are some cloud-based software/apps that can help you do you expense management pretty easily. If you are a startup and are in need of something like this, read on:

1. **SageOne:**
   Web: [www.sageone.com](http://www.sageone.com)
   Sage One is one of the most used Invoice & Expense Management Software available right now. it takes care of all the tedious jobs that a SoHo generally fears to do on its own.

   **Features:**
   a. **Dashboard:**
      - Provides a Central Dashboard from which everything can be done.
      - At a glance, it gives you the total expenses and income this month, your bank account statement, your profit/loss and unpaid invoices/quotes.
   b. **Accounting:**
      - This makes accounting easy and manageable.
Easy entry of income and expenses which includes all the details and bills can be attached and saved accordingly.

Allows creation of categories for Income and expenses for more better Organization.

Easy creation of Profit and Loss reports, Balance Sheets and Aged Invoice reports.

Lets users connect their primary office bank account to keep track of payments.

c. Invoice Management:

- Lets users create customizable invoice sheets and send to clients.
- Clients can directly pay through PayPal or SageOne's integrated payment system.
- It keeps track of all the overdue invoices and sends the reminder to the clients in regular intervals.

d. Project Management & Information Sharing:

- Lets user create tasks and deadline and track the project progress.
- Lets users create tasks and mini tasks and allows easy sharing of project timelines within team or with clients.

Pros:
- Web-based application can be accessed from any device
- Very good for invoice and accounts management

Cons:
- No time-tracking options which could have made billing and invoicing more accurate.
- Cannot be accessed offline due to lack of native application.

Price:
- No free version available. Free trial is for 15 days only.
- Costs 24$/month for all the features. No restriction on the number of user additions.

Who is it for:
- For startups which need Invoice and Accounting Management software.
- May be not suitable for freelancers or organizations who outsource work.
Time-tracking plus invoice management software would give accurate project progress and amount of time put in the project.

2. Zoho Invoicing:
Web: https://www.zoho.com/invoice/
Zoho wants to cover almost every need of an Organization especially SoHos; so, they do have something to provide in this sector too - Zoho Invoicing; a clear and neat cloud-platform which can be used to create and manage invoices quotes and handle clients. Let’s see what all it has to offer:

Invoicing:
- Lot of ready-made templates available which has customizing options.
- Keeps a track of all the invoices and payments.
- Keeps a list of overdue payments.
- Option available to send automatic reminders to clients in periodic intervals.

Quotes & Estimates:
- Lets users create quotes and estimates that can be sent to consumers.
- Lets users keep track of all the quotes sent and also allows easy changing of quotes
- Lets users easily create invoices from quotes.
- Easily lets you clone invoice and quotes and allows fast changes to be sent to different customers.

Expense Tracking:
- Lets users document all the expenses made.
- If any of them are reimbursable, it allows you to prepare an invoice for that and send it to the customers.
- Generates reports on where and how the expenses are made for easy tracking.

Time Tracking:
- Allows time-tracking like other time tracking software.
- Allows users to invite clients to monitor over the project progress.
- Invoice for the projects can be created by using the time-tracking feature.
Pros:
- The software caters to almost all the needs and is easy to use.
- Has some additional features like adding tax amounts to each purchase which lets you keep track of taxes and discounts.
- Integration with other Zoho apps like Zoho CRM
- Multi-lingual support
- Access to the large Zoho Community.
- Flexible pricing

Cons:
- Time tracking app is web-based and not native.

Price:
- Free for 1 user and 5 customers
- $15/month for 500 customers and 3 users
- $30/month for unlimited customers and users.

Who is it for:
- Suitable for startups and mid-sized organizations
- Suitable for freelancers also.

3. CurdBee:
Web: curdbee.com
CurdBee is an Invoice and Billing cloud-based software that has users in around 30 countries. The product was initially developed by a Sri Lankan-based startup. Let’s have a look at what CurdBee provides:

Features:
- It lets users create custom invoices, allows including tax, discounts and also has the reminder feature.
- Lets users create custom Estimates which can later be changed into invoices
- It has an added feature of timing your invoice, so that you can send it in the future or send it repeatedly in periodic intervals.
Has a feature of Time-Tracking, where projects and tasks can be created and reports can be generated.

The time tracking can be done even when the user is offline and then it syncs the data once they are online.

The Expense and Income Management feature it provides is very much standard and documents all your income and expenditure, which can be later generated into plots and graphs.

Pros:
- The time tracking can be done when the user is offline also which is not the case in Zoho and SageOne.
- Only service which provides a lot of features for free.

Price:
- The Invoicing services can be availed for free.
- $5/month for all the above and time-tracking, estimates.
- $20/month for all the above and generating reports, charts, etc.

4. Invoiceable:
Features:
- An Invoice-only platform that lets users create quick invoices through a flexible user interface
- Lets users maintain track of all the invoices
- Lets users keep track of all the clients contacted.
- Free to use.

Cons:
- No customization options
- Very basic in terms of features

Price:
- Free if the invoice links are on their domain
- If you want to remove links from the invoices sent to clients, then a one time payment of 49 Euro.

Who is it for:
- Freelancers and small Organizations which doesn’t require much customization.
III. Form Building & Survey Apps:
Surveys form an integral part of any research whether it is an academic research or Consumer/Market Research. Making forms, sending them to potential respondents, collecting responses and organizing that data is a very complex and long process not only for startups, but also for big Organizations.

A lot of software/apps make it easier to go through this tedious process. Following are some of the cloud based software that can help you get this process of surveys done with ease.

1. Google Forms:
Web: [http://www.google.com/drive/apps.html](http://www.google.com/drive/apps.html)

Features:
- Google Forms is one of the most used form building software.
- It’s quick to use and easy to create
- Allows sharing of form through a single link
- Different themes to choose from
- Allows all different type of question types such as checkboxes, lists, etc.
- Allows real-time editing by multiple users. Hence, more than one user can combinedly create a form.
- Flexible interface. Allows rearrangement of questions and categorization of questions into multiple sections.
- All the form’s responses will be automatically saved in a spreadsheet form where each questions responses are saved in columns. This helps in creating reports, charts and analyzing this data further.

Cons:
- Doesn’t allow advance question types like 3D matrix questions.
- Not very customizable. Cannot include your own logo and cannot to customized styling

Price:
- Its for free!

![Google Forms](image)
Who is it for?
- Suitable for casual purposes or sometimes for academic purposes.
- Might not suit when too much of customization is needed.
- No option of skipping question based on answers.
- Cannot be done offline

2. FluidSurveys:
web: fluidsurveys.com

Features:
- It has a unique drag and drop editor.
- Supports over 64 languages and also allows more than 35 question types.
- Allows custom formatting and inclusion of logo, brand color, etc.
- Provides a plethora of template options.
- Mobile apps available which allows to take surveys even when respondents are offline and then the data can be synced after they go online.
- Questions can be set to be skipped depending upon the response.
- Integration of live chat into the survey through which surveyors can interact with the respondents while they fill the survey.
- Integration with CintHub which gives access to 7.5 million profiles respondents.
- Integration with Dropbox for saving all the responses.
- Create respondent groups or user profiles for particular set of respondents if needed.
- Exports the responses into spreadsheets, CSV or SPSS.
- Password protection for these surveys is possible for restricted sharing.
- Generated real-time reports, charts from the responses collected.
- Helps in measuring open-ended questions by using text-tagging and also helps in understanding common text trends.
- Allows respondents to answer through video/audio/picture messages also.
- Provides administrative tools that helps in managing users and groups and keep track of all the activity from a central dashboard.
- Provides an API for developers.
Cons:
- Free version doesn’t offer any additional features. Equivalent to Google Forms and moreover allows only 20 questions/survey in the free version.

Price:
- Pro version costs $17/month in which it doesn’t provide phone support and premium questions. Allows data exports and generates reports.
- The ultra version costs $49/month has almost all the features except export of data in SPSS, CSV and offline/mobile/tablet capabilities.
- The Enterprise version has all the features mentioned above in the features section.

Who is it for?
- Suits for Organizations which need complex surveys and account management tools
- Suits for surveyors who need targeted respondents

3. Survey Monkey:
Web: [www.surveymonkey.com](http://www.surveymonkey.com)

Features:
- Supports 15 question types.
- Customizable form/survey creation which allows Surveyors to include their brand identity elements like Logo, Brand Color, etc.
- Helps in targeting the right respondents by giving access to their varied respondent profiles.
- Generates real-time reports, graphs from the response data.
- Provides API called Survey Monkey API.
- Allows question randomization, flipping, random assignment of questions for A/B testing and skip questions logic.
- Helps in text analysis for open responses.
- Allows SPSS integration

Cons:
- Doesn’t support advanced question types.
Offline filling of responses is not possible.
Account Management and user Management tools not available.
Low value propositions in terms of feature vs price when compared to FluidSurveys.

Price:
- Free version allows only 10 questions/survey and only 100 responses.
- Basic version which costs Rs. 490/month has some very basic features only.
- Gold version which costs Rs. 9,900/month has almost all the features except support and some advanced ones.
- Platinum version which costs Rs. 24,900 consists of all the features.

Who is it for?
- Might suit surveyors who don’t need advanced question types and offline response modes.

4. Adobe FormsCentral:

Features:
- Drag and Drop interface for form building
- Allows customization of look and feel in all the version
- Allows real-time editing of forms along with team members.
- Allows page-skip logic
- Allows distribution as fillable PDF
- Allows offline filling of responses.
- Users can use the Data Analysis tools it provides to analyze the data and produce reports.
- Allows different privacy settings where roles can be assigned and each person’s level of access can be decided.

Cons:
- Doesn’t have the feature to assessing open-ended questions
- No option of getting targeted responses.
Price:
- Free version can be used to create only one form and accepts up to 50 responses
- Basic version which costs 0.99$/month allows only 5 forms and 500 responses per form
- Plus version which costs 11.99$/month allows unlimited forms and around 5000 responses.

Who is it for:
- For Organizations which need customization and features like skip-page logic, this is the most economical option.
- For Organizations which doesn’t need targeted response group.

**IV. Project Management Apps:**
Project Planning and Management is something SoHos/startups don’t want to spend much time in. They believe in more of “Just Do it” approach and other “Agile” methods. But, Agile doesn’t mean do anything in any order without planning. It suggests to make a plan first with whatever resources available and bring keep changing the plan of execution in an iterative process according to feedback from real-time users/testers.

Hence, standard project management tools like Microsoft project and Hansoft that are very complicated and hard to adapt to are not very suitable. So, lets take a look at some of the most interesting and flexible project management apps that are widely used by SoHos:

1. **Trello:**
Web: [trello.com](http://trello.com)
Trello works on a project management paradigm known as Kanban where Boards are the projects, Lists (contained in projects) corresponding to categories/classification of tasks and Cards (contained in lists) are tasks.

Features:
- Allows creation of multiple boards which can be used to tackle multiple projects
- In each board, unlimited number of lists can be created depending upon how you want to categorize your tasks. For example, all the UI tasks in one list, bugs in one and development features in one list.
Cloud Services for SOHOS

- Allows addition of unlimited users to a board.
- Allows assigning of team members to a particular card/tasks.
- Allows creation of mini tasks (checklists) inside a card.
- Allows setting deadline for each card.
- Allows writing notes, description and comments in each list.
- Allows attachment of documents, images to the cards.
- It keeps a record of all the user activity, comments, movement of cards, etc.
- Real-time changing and creation of cards, lists and checklists by multiple users.
- Allows voting on cards which can be used as polls.
- Even when the user is offline, creation and changes can be done and then the data gets synced.
- Provides native mobile/tablet apps which gets synced with the online data.
- Allows Google Apps integration.
- Allows administrative tools for better assigning and managing of tasks.
- Allows bulk export of all the data, tasks and mini tasks.

Cons:
- Doesn’t allow assigning particular mini-task/checklist to particular member.
- Doesn’t allow notes/comments for each checklist/mimi-task.
- Can get complicated for midsize and large teams.

Price:
- Free versions provide almost all the features.
- Business class version costs 25$/month or 200$/year and gives google Apps integration, administrative tools and bulk export of data.

Who is it for?
- Startups who work in teams which are less than 10.
- Freelancers.
Suitable even to keep track of daily works like maybe like picking up Laundry or documenting cool ideas.

2. Asana:
Web: asana.com
Asana is a user friendly and innovative project & task management application that helps its users maintain, organize and coordinate projects with a group of people.

Features:
- A 3 panel interface where the leftmost panel gives a list of projects that you are currently working on and all the people on your team; the middle panel gives an outline of the current project selected and the list of tasks that are to be done as part of this project; the rightmost panel consists of the description of the current task selected.
- Allows commenting of all team members on each task and allows assigning task to team members.
- Allows creation of mini tasks and commenting/notes for each mini task also.
- Each mini task can also have super-mini tasks and it also allows commenting/taking notes.
- Other team members who are not assigned the task can be added as followers, so that they can stay updated.
- All the updates from all the tasks and projects comes into your inbox; which can be accessed from the leftmost panel.
- Provides a lot of useful informational video content that explores different ways in which Asana can be used.
- Allows syncing to Google Calendar/iCal
- Allows attachment of files to each task and mini task
- Allows prioritizing and labeling of tasks in a project

Pros:
- Asana is very flexible and has the ability to handle big projects with a lot of complexities also in a simple way
Asana can be used to do a variety of tasks like Bug Tracking and CRM, even though they are not primarily meant to do that.

- Allows addition of mini tasks to mini tasks and allows commenting to every level of task.
- Making other team members followers of a project is interesting as it keeps everyone updated about what’s going on.
- Taking opinions on anything is pretty easy.

**Cons:**
- The whole layout is pretty standard and doesn’t allow pulling tasks from one project to another.
- The UI is not designed in a way where all the tasks and mini tasks of a project are visible at a glance. Has some levels of visibility.

**Price:**
- For the free version, you get unlimited tasks and projects; but limited team members can be added.
- For the basic version of $50/month - 15 members can be added.
- $100/month - 30 members and there are various pricing models like this up to 100 members or more also.

**Who is it for?**
- For teams more than 10 members and who have a lot of complicated tasks which requires mini tasks and super mini tasks, filtering, labeling, etc.
- For individual freelancers also this can be useful if you have huge and complicating projects and require flexibility.

### 3. Gantter:
**Web:** [gantter.com](http://gantter.com)

**Features:**
- Integration with Google Drive, through which you can directly create a Gantter project.
- The main USP of this app is that it creates real time gantt charts according to the project schedule.
- Create multiple projects and tasks inside a project and update the project status.
- Share the projects through Google Drive itself.
Chat feature available due to Google Drive integration
Sync with Google Calendar and can attach files and resources to projects and tasks
Create time estimates and project deadlines.
Integration with MS project which allows easy import/export of MS project files
All the user activity if tracked and saved
Advanced options for creation of Gantt charts like color coding different tasks.
Multi-lingual support upto 20 languages
Files can be attached directly from Google Drive or DropBox

Pros:
- Well organized gantt charts
- Chat feature helps to coordinate with people working remotely
- Integration with Google Apps gives an added advantage of similar interface and other plus point of Google Drive
- Ability to use this offline as an add-on to Google Chrome.

Cons:
- Manual updation of task progress
- Main focus is on Gantt chart and not on tagging, assigning tasks to co-workers and monitoring
- Interface and design not very flexible.

Price:
- Its completely free to use
- Can be used on Google Apps/Drive or through SmartApps or as an add-on to Google Chrome

Who is it for:
- Teams/Organizations which need tools for project planning and time estimation
Organization who outsource their work can use this to keep track of the project progress and get an idea of how the project is planned with the help of Gantt charts.

**V. Customer Relationship Management:**
Customer Relationship management is a key area for any Organization be it B2B or B2C and is also one of the most complicated processes. Handling complaints, queries, trying to keep so many people happy is a difficult process and for a SoHo/startup it can be quite a headache. So, here are a few CRM software that can help you ease this thing:

1. **Zoho CRM:**
   Web: [https://www.zoho.com/crm/](https://www.zoho.com/crm/)

   **Features:**
   - Lets users maintain a list of contacts categorized into different Organizations or groups
   - Lets users maintain Leads to each product. leads are considered to be early adopters or potential customers who are showing interest in the product/service.
   - This lets the users of Zoho CRm focus on the present and future customers neatly categorized into different demographics.
   - Lets users create departments in the software according to the departments present in the Organization
   - Provides administrative tools which can be used to grant different levels of permissions to different users of different departments.
   - Can assign tasks or specific complaints or modules to specific users in departments.
   - Allows users to maintain a specific list of tasks, events and calls. Allows customization
   - Helps in migration by allowing import of data from other CRM software.
   - Generates reports on user satisfaction, customer rating
   - Integration with other Zoho Apps.
Cons:
- A little complicated to use and might not suit startups without many departments.

Price:
- Free version allows up to 3 users and 500 records and no customization which is suitable for small startups
- Standard version costs $12/user/month and allows customization and 100,000 entries and more features.
- Professional version costs $20/user/month and also allows Email Integration, Role-based security and unlimited records
- Enterprise edition costs $35/user/month and also allows advanced security, time-based actions and help desk integration.

Who is it for?
- The free version can work for startups with 3 or less team members who handle a small group of customers.
- Standard and Professional versions can work for small/Medium Business units.

2. Insightly:
Web: [www.insightly.com](http://www.insightly.com)

Features:
- Integration with Google Apps, Office 365.
- Lets users import contacts of all the customers and categorize them
- Lets users maintain a list of Organizations and the contacts of key people in each Organization.
- Lets users maintain a list of Opportunities or potential customers/Organizations and keep updated about their activities and remain in touch.
- File Sharing with teammates and customers
- Mass email possible with the help of MailChimp Integration
Sync with Google Calendar and monitor tasks and important deadlines
Provides easy administrative tools which helps users in inviting new users, create user permissions, customize, setup pipelines, add custom fields.
Provides native Mobile/tablet apps
Inbuilt integration with Twitter through which Organizations can display social media data like Tweets and posts
Provides API for developers.
Can be integrated with Insightly’s project & Task management software which makes it an all-in-one software.

Cons:
Plans not according to per user. If users are more in number but features required is less, this might not be a good option.

Price:
Free version allows up to 3 users and 200 MB storage and 2500 contacts
Starter version costs $29/month and allows up to 6 users and 6GB storage
Advanced version costs $49/month and allows 15 users and 25 GB storage with unlimited contacts and there are various plans depending upon the number of users and storage amounts.

Who is it For:
Organizations which need all the feature set but have limited number of users in the Organization might benefit from the plans.
The personal cloud and cloud devices

With the personal cloud, the power of cloud computing comes into the hands of the individual. Read on to find out exactly how.

We’ve seen how popular the term ‘cloud computing’ has become owing to the splendid job done by the marketers of the various remote server data hosting companies. Added to the ambiguity brought about by this term, there are also several deployment models used to differentiate between the kinds of cloud computing – namely, the Private cloud, the Community cloud, the Public cloud, the Hybrid cloud, and the Personal cloud. When the cloud services are rendered over a network solely for a single organization, it is called a Private cloud. When it is used for a group of organizations or a community, it is called a Community cloud. A Public cloud offers cloud services that are
open for public use, and a Hybrid cloud is a composition of two or more clouds that remain unique entities but are bound to each other. And just as we start to thank Lord Almighty because these terms seem to be slightly definitive, we come across the Personal cloud. Now while the Personal cloud could be generalised as an application of cloud computing specifically for individuals, it still has pretty diverse implications. A personal cloud could mean clouds that exist at home or in a business, and are managed by an individual, in the form of storage devices that are controlled by the individual themselves. The term is also alternatively used to define any server space that you have control over as an individual and get to choose file access and restrictions, even if it means that the hardware is 3rd party owned; this would cover applications like Dropbox, Google Drive etc. which we’ve already covered in our previous topic “Cloud Storage and Syncing”. So when we talk of the Personal cloud, in the context of this chapter we prefer the former definition – that of a storage appliance that by itself or through another device, can be accessed wirelessly over the internet, thus providing data transfer across various devices over the “cloud”.

So how exactly can we setup our very own Personal cloud? It’s pretty easy actually. There are different ways to go about it. For one, there are software and open source services out there that offer similar functionality as services like Dropbox or Google Drive do. But instead of storing the data on third party servers, these software let you install them on any computer you control, thus enabling you to host your own cloud server. These open source software such as OwnCloud run on pretty much every environment that allows you to install it on platforms like Ubuntu server giving you the flexibility that you want. This means you could just get an old computer with all the data you need stored on it (or get an external HDD, and connect it to the comp), install the software and use it as your very own personal cloud server. The best part about services such as OwnCloud or Tonido, is that you can
seamlessly integrate it with the other aforementioned storage services, and manage them all together. So basically, it allows you file syncing and sharing capability across various cloud storage services – a very handy feature in itself. Apart from this, there are several NAS devices on the market now that enable you to have a personal cloud of your own. Network Attached Storage (NAS) devices are computers attached to a network whose sole purpose is to act as a server for other devices that are connected to the network. They are more or less like DAS (Direct Attached Storage) devices such as external hard disks, but with miniaturized components incorporated, turning them into limited purpose computers. A wide array of options is available on the market with leading companies like WD and Buffalo rolling out their versions of the NAS devices. And the latest consumer oriented NAS devices are pretty easy to setup – all you need to do is plug the drive into your router, turn on the power and run the software to enable external access. The data is then accessible from various mobile devices – all you need is a web browser, or the corresponding app if your device supports it. So just upload your data, and then you'll be able to access it from your PC, your Mac, your notebook on-the-road, your smart phone, your tablet and even your PS3 game console.

There are also a new generation of routers being rolled out called cloud routers. These devices will let you access the router settings and records from a mobile device that need not be on the router network. And it also lets you access files on a hard drive connected to the USB port of the router, both locally and remotely. There are also various other small devices coming up that allow you to set up your own personal cloud – Plug is one of them. It's a network connected device that allows you to convert a portable hard drive into your own personal cloud shared between your various devices. All you need to do is connect the small device to the home router using an Ethernet cord, and then connecting a storage device to the other side via USB. So, there are several ways you can create your very own personal cloud as we have seen here. However one thing you'll have to keep in mind is to make sure that the device you're buying supports the different Operating Systems.
across your various devices. And also try and keep an eye out for the various apps and software that the device supports – the more the capability of the device, the more number of ways you can access the data.

While you can use Youtube, or the popular social networking sites such as Facebook, or Flickr to share your photos, videos and music online, cloud storage devices seem the most viable option to store and share your data on the internet as per your requirement, and it’s a no brainer as to why most of the consumers would want to shift to the cloud. It would enable us to store files online, thus releasing a lot of space on our PCs, smartphones, tablets etc. We would be able to access the files from any device, and any location as long as we have an internet connection. An added reason to go with services such as Dropbox, Sugarsync, Google Drive is that the consumer gives up the responsibility of regularly maintaining the hardware or of backing up the data. But then there are a lot of disadvantages that come with online storage, as we have seen in previous articles, and that is where the Personal cloud comes in. The Personal cloud scores in a lot of areas where online cloud storage seems shaky as an option:

- Firstly, it is much cheaper compared to online storage services. With these services, the more data you need to store – the more you’ll need to pay up, with unlimited storage reaching up to around $800 a year. Whereas with your own personal cloud, it’s just the first time investment that you’ll need to bother about, and further usage is completely free. Expansion of data also would probably require you to just buy another hard disk, which turns out to be much cheaper comparatively.
- Then there’s the whole dependency factor – the fact that it becomes extremely cumbersome to try and switch between providers once you’ve already stored huge amounts of data with a particular provider, making it very important to choose the right vendor in the first go. But, with your own personal cloud, since the data is in your control, switching between software or devices shouldn’t be that much of an issue.
- With 3rd party clouds, what the provider offers is what you get. These might be limitations in terms of number of users or other limitations set by the provider regarding the data, or even the speed it takes for you to sync your data with their servers. A personal cloud gives you true flexibility in the sense that your cloud can do whatever you want, at a much faster speed, and cater to as many users as you want depending on your needs.
- Oh, and there’s also the slight risk that storing data in a remote, third party server means there might be technical difficulties and server downtimes
when you really, really need to access it – remember, 99% uptime would mean around 90 hours of downtime a year. Whereas with your own personal cloud, you choose when it’s up or down depending on your usage and need.

And probably the biggest concerns with storing data on 3rd party servers, are security and privacy. Nothing on the internet is safe and with attacks on the rise, the cloud – with huge chunks of key data – is the primary target. The cloud storage services, no matter how big, are not fool-proof, and history bears testimony to this fact. A personal cloud however ensures so much more in terms of security, for your data is completely under your control, and who you divulge information to is entirely your responsibility.

Agreed, that despite all of this, data stored on your personal cloud isn’t impregnable. There’s always the risk of accident caused due to physical hardware damage caused by carelessness or natural events (flood, fire etc.), and also by not taking enough measures to protect your data against security attacks. But as consumers we tend to deem errors committed by vendors much more severe compared to our own, and therefore it seems a better option to take complete responsibility of your hardware and data rather than trust it with a 3rd party – and personal cloud software and devices give you exactly that.

So with the Personal cloud, you get to choose which data you store, delete or modify; which apps you use with this data; the set of devices that are hooked up to the PC; the different services that are accessed over your network. You define the terms of service for anybody interacting with the data, and you can do all of this using one or more trusted data interchange networks designed for it. Now wait just a second! The above definition might as well define precisely what the idea for a Personal Computer was way back in the 1970s, if only for a single device. We all know how that particular idea turned out, so odds are that the Personal Cloud might just be the next huge revolution in the tech industry. The Personal cloud is in its initial stages right now, but the future looks promising. Analysts predict that in the recent future more emphasis is going to be placed on integrating mobile technology and the cloud by increasing the number of mobile applications that access the cloud for its back-end applications. Also considering that the market amount spent on the cloud is less than 1% of the entire IT industry currently, there is almost unbounded room for growth of the cloud. So by offering to centralize people’s digital lives, Personal clouds are well on their way to becoming the new PCs.
The cloud plays host to many handy little task-specific tools that can be real life savers. Here we showcase few of the best ones.

**Automation Tools**

Enterprise level automation tools are expensive. But for the everyday user there are freely available cloud automation tools like IFTTT and Zapier that serve both small-business and consumer needs.

**Zapier**

[https://zapier.com/](https://zapier.com/)

Zapier is a service that helps to sync data and automate tasks between other online services. It integrates tasks like adding activities from Asana to your Google Calendar, adding live Twitter feed to a row in your Google Docs spreadsheet, allows you to save Gmail emails to Evernote, the possibilities are endless.

Zapier recently launched a developer platform with 12 service providers (Hubspot, AgileZen and Podio) already building on it. The developer platform was aimed at letting users and vendors build their own applications rather than waiting for the company to do so.
IFTTT
https://ifttt.com
IFTTT is short for ‘If This Then That’. This is the statement aptly called a Recipe based on which the service runs. IFTTT runs on the concept of Channels, Triggers and Actions which serve as Ingredients to the recipe. Channels are the basic building blocks between which connections are made. Currently the service supports about 69 channels including Facebook, LinkedIn, Evernote, Tumblr etc. A Trigger forms the ‘This’ part of the IFTTT recipe. It is a condition based on which an Action will take place. For example If ‘I check in on Facebook’ or If ‘I take a photo with Instagram’, then perform a certain Action. The Action as I’m sure everyone has now guessed is the ‘That’ part of the recipe. Actions could be anything from sending yourself a text message or posting something to Facebook.

Commonly used recipes include saving all Instagram photos to DropBox, Making a list in Evernote, of new books from the New York Times best seller list.

Cloud Search Engine Tools
With so much of your data in the cloud it becomes very difficult to remember what is stored where. To make the process of hunting down files that you need easier there are cloud services which do it for you. The scavenger through all your accounts and return the data you are looking for.

CloudMagic
https://cloudmagic.com
CloudMagic is a superb search tool which is a personal search engine for all your online data. It is a lightning fast search across all your data saving you the trouble of organizing into folders and lists. With
applications for all mobile and tablet devices and add-ons for most browsers CloudMagic is popularly called ‘the Gateway to your Personal Data’. You can search Gmail, Hotmail, Yahoo, Evernote, Facebook, Twitter, iCloud, AOL, GoogleDrive.

**Lost Photos**
Lost Photos is an application that searches through all your online accounts and unearths photographs that you are looking for or don’t even remember you had. It then displays them in a slide show for you convenience and you can select which ones you want to delete, post to a social networking site or store on your hard drive. Currently it is free for Windows users and can be bought for $3 for Mac.

**Cloud Data Backup Services**
Backing up your data is one of the most important services that cloud based applications have to offer. Regularly creating backups of their data is also something that most people put off till it is too late which is why many cloud services offer automatic backup and sync services.

**MiMedia**
www.mimedia.com
MiMedia is one such Backup Service that has one of the biggest and best free online backup plans. Once uploaded, you can access and share files, music videos etc from anywhere. MiMedia offers a free 7GB of space. If required you can easily upgrade and get more. MiMedia stores your data in Tier-1 data centres and uses a highly reliable and secure server architecture so that data loss is impossible. The MiMedia backup client runs in the background and ensures real time data syncing, omitting the need for scheduling backups.

It also has a Shuttle Drive service for Premium users in which it sends an encrypted hard drive in the mail. Once you fill it up your files backup automatically and you can send it back in the same box.

**ZipCloud**
www.zipcloud.com
ZipCloud is a simple and effective cloud based backup tool. Once installed it knows which files and folders it has to back up and the user doesn’t have to bother with any additional measures. It is completely automated and
offers unlimited storage space. Files are encrypted so privacy is not an issue. With separate business and personal pricing deals it is tailor made to each user’s requirements.

**Cloud Data Conversion Services**

Every day we work with hundreds of different file formats based on our need, availability and comfort level. Many times while uploading to the web the format we have used is incompatible and we need to convert the file to some specified type. Usually doing this would require downloading a conversion software even if it is just for that one file. Now file conversion, encoding, transcoding is possible directly in the cloud. Your file gets converted into the required format and is sent to its final location in just a few clicks.

**Zencoder**


Launched in 2010, Zencoder is a cloud based audio and video encoding service. It converts any audio or video from your applications and websites into mobile and web compatible playback formats for the device you need to support. By using Zencoder you do not need to maintain your own transcoding engine. By signing up for a Test account you can try out Zencoder for free and see if it meets your transcoding needs. Your videos need to be accessible in the cloud. 99.5% of the video codecs used today are supported by Zencoder. It is used by applications which accept such files for upload and need to convert them into standard formats.

**CloudConvert**

[https://cloudconvert.org/](https://cloudconvert.org/)

CloudConvert as its tag line goes converts ‘anything to anything’. You simply upload your files to the cloud, choose the format you want to convert it to and the service converts it and sends it to the location of your choice (DropBox or GoogleDrive). All the conversion takes place in the cloud and there is no need to install any software on your computer. It is currently in its beta state and supports over a hundred audio, video, document, ebook, archive, image, spreadsheet and presentation formats. CloudConvert is also a very secure service as all you files are deleted after conversion and transfer to the desired location.

The Cloud Convert API allows you to integrate it within your own application and use its conversion services.
**Cloud based CMS services**
For those who lack the technical background but still need a website, a content management system is the ideal solution. These web based systems also provide hosting services for the websites created.

**Squarespace**
http://www.squarespace.com/
Launched in 2004, by Anthony Casalena in his dorm room Squarespace has grown to be a 38.5 million dollar company. It is essentially a SaaS (Software as a Service) content management system. It offers a fully hosted environment for creating and hosting websites and blogs. It is comprised of a website builder, blogging platform and hosting service. It has easy to use interfaces and do it yourself tools that allow just about anybody from a novice to a fully fledged developer to create functional and professional websites. They have many known brands as clients including HBO, Foursquare, Target, Cisco and Sony.

**Webpop**
https://www.webpop.com/
Webpop was built for designers who did not want to do a whole lot of hard core coding but still wanted control over their designs. These designs can now include dynamic content with very little coding. The two main components of Webpop are a web Content Management System and a code editor. The code editor uses Webpops own custom template engine called PopTags. Most of the code is in the form of predefined tags which is easy to pick up and doesn’t require any prior programming knowledge. They even offer a free 30 day trial to get you started.

**Cloud based Video Editing tools**
Video editing tools are usually proprietary and have to be bought or downloaded. Video editing tools in the cloud allow users to edit videos without downloading or buying specialized software. Of course not all of them are free but hey at least all the editing is done in the browser, making it easy, quick and convenient.

**WeVideo**
http://www.wevideo.com/
WeVideo easily connects to DropBox and other cloud storage tools to get the raw footage required to edit your videos. This is a major plus point as the
alternative would be to upload hours of footage which, with a slow internet connection would be nothing short of painful. WeVideo’s user interface offers you a timeline on which you can do your editing. You can add or trim clips, use soundtracks from their library with just a couple of clicks.

One of WeVideo’s key features is that it allows collaboration. You can invite friends to help with your project. They can add footage or work on different edits based on the same footage.

Once done WeVideo can directly upload your videos to YouTube or other web services. It saves you the trouble of having to download the video and then upload it yourself.

**MixMoov**
http://www.mixmoov.com/
MixMoov is another cloud based video editing service. It provides a white-labelled and customizable video editing toolbox. White labelled means that it was built to allows others to use it for their own purposes and put their own unique stamp on it. You can import clips directly from YouTube and use the tools offered for editing. It is used mostly by businesses who want to include video editors on their sites for their own customized purposes. MixMoov is highly customizable. It allows developers to build products and services around it.

**PC Management Services**
**Soluto**
https://www.soluto.com/
The service offers a system that helps repair and maintain the user’s PC. It also offers remote installation of apps like Adobe Reader, Google Drive, VLC, Dropbox and OpenOffice.

It repairs problems like reducing the boot time, performs defragmentation, and installs Windows updates when needed. Soluto does the equivalent of merging a lot of commonly needed solutions into one compact user friendly service. It also maintains user friendly activity and performance logs so one can know what went wrong and where.
Cloud Gaming Services
Cloud based gaming is becoming a trending phenomenon with the cloud becoming a means to offer state of the art gaming services.

They are used in in-browser games, third party consoles and other dedicated platforms. Cloud gaming technologies are of two types- video stream based and file stream based.

Kalydo Gaming
Kalydo works on file streaming based cloud services. Kalydo player is a plugin that comes with a fully equipped Kalydo software development kit (SDK), detailed manuals and an online management console. The games are launched and updated from the console and there is a debug facility available with live analytics and easy to use features. File streaming allows you to download data in the form of fragments. The intensive game play calculations are offloaded onto the cloud for a smoother and uninterrupted game play performance. File stream base cloud gaming is more affordable and easily scalable and is thus gaining preference over video based streaming. It is mostly used by social media and third party web platforms. A lot of start ups are becoming successful in this field. They have a free trial go check it out: http://kalydo.com/games/

Big Fish Games
Gaming consoles like PS4 and Xbox deploy video streaming cloud gaming. Big Fish Games has recently launched their cloud based gaming platform. It is accessible from any tablet or mobile device. It gives you access to the 100s of games in their catalogue. In this manner you only have to stream the game no additional downloads are necessary. Game progress is stored and you can pick up where you left off last. http://www.bigfishgames.com/

OnLive Games
OnLive Games were the first to demonstrate cloud gaming. The game ‘Crysis’ was played on a low end laptop located several miles away from the server. Now using OnLive’s client users have access to all the games in their store and can stream and play any one of them. The company almost shut down recently because no one was signing up for the paid scheme when there were free 30 minute demos to take advantage of. Now with new management in place it is said they are slowing recovering. www.onlive.com
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