**AMAZON WEB SERVICES CLOUD COMPUTING.**

**Introduction**

# What is Cloud Computing?

# Cloud computing is the on-demand delivery of compute power, database storage, applications, and other IT resources through a cloud services platform via the Internet with pay-as-you-go pricing.

**Why Cloud?**

Cloud computing is computing based on the Internet. Where in the past, people would run applications or programs from software downloaded on a physical computer or server in their building, cloud computing allows people access to the same kinds of applications through the Internet.

When you update your Facebook status, you’re using cloud computing. Checking your bank balance on your phone? You’re in the cloud again. Chances are you rely on cloud computing to solve the challenges faced by small businesses, whether you’re firing off emails on the move or using a bunch of apps to help you manage your workload.

In short, cloud is fast becoming the new normal. By the end of 2015 it’s estimated that 90% of UK businesses will be using at least one cloud service.

WHY are so many businesses moving to the cloud? It’s because cloud computing increases efficiency, helps improve cash flow and offers many more benefits…

**Check out ten of the best below.**

## 1. Flexibility

Cloud-based services are ideal for businesses with growing or fluctuating bandwidth demands. If your needs increase it’s easy to scale up your cloud capacity, drawing on the service’s remote servers. Likewise, if you need to scale down again, the flexibility is baked into the service. This level of agility can give businesses using cloud computing a real advantage over competitors – it’s not surprising that CIOs and IT Directors rank ‘operational agility’ as a top driver for cloud adoption.

## 2. Disaster recovery

Businesses of all sizes should be investing in robust disaster recovery, but for smaller businesses that lack the required cash and expertise, this is often more an ideal than the reality. Cloud is now helping more organizations buck that trend. According to Aberdeen Group, small businesses are twice as likely as larger companies to have implemented cloud-based backup and recovery solutions that save time, avoid large up-front investment and roll up third-party expertise as part of the deal.

## 3. Automatic software updates

The beauty of cloud computing is that the servers are off-premise, out of sight and out of your hair. Suppliers take care of them for you and roll out regular software updates – including security updates – so you don’t have to worry about wasting time maintaining the system yourself. Leaving you free to focus on the things that matter, like growing your business.

## 4. Capital-expenditure Free

Cloud computing cuts out the high cost of hardware. You simply pay as you go and enjoy a subscription-based model that’s kind to your cash flow. Add to that the ease of setup and management and suddenly your scary, hairy IT project looks at lot friendlier. It’s never been easier to take the first step to cloud adoption.

## 5. Increased collaboration

When your teams can access, edit and share documents anytime, from anywhere, they’re able to do more together, and do it better. Cloud-based work flow and file sharing apps help them make updates in real time and gives them full visibility of their collaborations.

## 6. Work from anywhere

With cloud computing, if you’ve got an Internet connection you can be at work. And with most serious cloud services offering mobile apps, you’re not restricted by which device you’ve got to hand.

The result? Businesses can offer more flexible working perks to employees so they can enjoy the work-life balance that suits them – without productivity taking a hit. One study reported that 42% of workers would swap a portion of their pay for the ability to telecommute. On average they’d be willing to take a 6% pay cut.

## 7. Document control

The more employees and partners collaborate on documents, the greater the need for watertight document control. Before the cloud, workers had to send files back and forth as email attachments to be worked on by one user at a time. Sooner or later – usually sooner – you end up with a mess of conflicting file content, formats and titles.

And as even the smallest companies become more global, the scope for complication rises. According to one study, "73% of knowledge workers collaborate with people in different time zones and regions at least monthly".

When you make the move to cloud computing, all files are stored centrally and everyone sees one version of the truth. Greater visibility means improved collaboration, which ultimately means better work and a healthier bottom line. If you’re still relying on the old way, it could be time to try something a little more streamlined.

## 8. Security

Lost laptops are a billion dollar business problem. And potentially greater than the loss of an expensive piece of kit is the loss of the sensitive data inside it. Cloud computing gives you greater security when this happens. Because your data is stored in the cloud, you can access it no matter what happens to your machine. And you can even remotely wipe data from lost laptops so it doesn’t get into the wrong hands.

## 9. Competitiveness

Wish there was a simple step you could take to become more competitive? Moving to the cloud gives access to enterprise-class technology, for everyone. It also allows smaller businesses to act faster than big, established competitors. Pay-as-you-go service and cloud business applications mean small outfits can run with the big boys, and disrupt the market, while remaining lean and nimble. David now packs a Goliath-sized punch.

## 10. Environmentally friendly

While the above points spell out the benefits of cloud computing for your business, moving to the cloud isn’t an entirely selfish act. The environment gets a little love too. When your cloud needs fluctuate, your server capacity scales up and down to fit. So you only use the energy you need and you don’t leave oversizes carbon footprints. This is something close to our hearts at Salesforce, where we try our best to create sustainable solutions with minimal environmental impact.

## Not moved to the cloud yet?

Any three of the above benefits would be enough to convince many businesses to move their business into the cloud. But when you add up all ten? It’s approaching no-brainer territory.

This is why Salesforce pioneered enterprise cloud computing. From CRM to marketing automation, all of our solutions are entirely cloud-based.

## **Cloud Computing Basics**

Whether you are running applications that share photos to millions of mobile users or you’re supporting the critical operations of your business, a cloud services platform provides rapid access to flexible and low cost IT resources. With cloud computing, you don’t need to make large upfront investments in hardware and spend a lot of time on the heavy lifting of managing that hardware. Instead, you can provision exactly the right type and size of computing resources you need to power your newest bright idea or operate your IT department. You can access as many resources as you need, almost instantly, and only pay for what you use.

## **How Does Cloud Computing Work?**

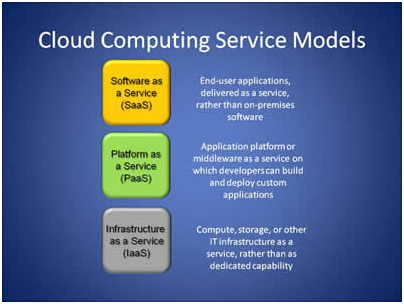
Cloud computing provides a simple way to access servers, storage, databases and a broad set of application services over the Internet. A Cloud services platform such as Amazon Web Services owns and maintains the network-connected hardware required for these application services, while you provision and use what you need via a web application.

1. Create an AWS account
2. Launch a Virtual Machine
3. Store Media and Files

# **3 Service and 4 Deployment Models of Cloud Computing**

According to National Institute of Standards and technology (NIST), Cloud computing is a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction. This cloud model is composed of five essential characteristics**,**three service models, and four deployment models

**Service Models:**



***Software as a Service (SaaS).***The capability provided to the consumer is to use the provider’s applications running on a cloud infrastructure2. The applications are accessible from various client devices through either a thin client interface, such as a web browser (e.g., web-based email), or a program interface. The consumer does not manage or control the underlying cloud infrastructure including network, servers, operating systems, storage, or even individual application capabilities, with the possible exception of limited user-specific application configuration settings.

***Platform as a Service (PaaS)*.**The capability provided to the consumer is to deploy onto the cloud infrastructure consumer-created or acquired applications created using programming languages, libraries, services, and tools supported by the provider.3 The consumer does not manage or control the underlying cloud infrastructure including network, servers, operating systems, or storage, but has control over the deployed applications and possibly configuration settings for the application-hosting environment.

***Infrastructure as a Service (IaaS).***The capability provided to the consumer is to provision processing, storage, networks, and other fundamental computing resources where the consumer is able to deploy and run arbitrary software, which can include operating systems and applications. The consumer does not manage or control the underlying cloud infrastructure but has control over operating systems, storage, and deployed applications; and possibly limited control of select networking components (e.g., host firewalls).

**Deployment Models:**

***Private cloud****.*The cloud infrastructure is provisioned for exclusive use by a single organization comprising multiple consumers (e.g., business units). It may be owned, managed, and operated by the organization, a third party, or some combination of them, and it may exist on or off premises.

***Community cloud.***The cloud infrastructure is provisioned for exclusive use by a specific community of consumers from organizations that have shared concerns (e.g., mission, security requirements, policy, and compliance considerations). It may be owned, managed, and operated by one or more of the organizations in the community, a third party, or some combination of them, and it may exist on or off premises.

***Public cloud.***The cloud infrastructure is provisioned for open use by the general public. It may be owned, managed, and operated by a business, academic, or government organization, or some combination of them. It exists on the premises of the cloud provider.

***Hybrid cloud*.**The cloud infrastructure is a composition of two or more distinct cloud infrastructures (private, community, or public) that remain unique entities, but are bound together by standardized or proprietary technology that enables data and application portability (e.g., cloud bursting for load balancing between clouds).

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**Advantages and Disadvantages of Cloud**

Cloud Computing, has now made it effortlessly easy for all to access applications and software from the Internet. Earlier the software and applications had to be physically installed but not anymore. With the evolution in technology and the feasibility to access beneficial apps off the Internet, businesses are reaping huge benefits from cloud computing.

However, along with the advantages cloud computing provides, the disadvantages are pretty evident. There are several advantages with cloud computing, and there are prominent setbacks as well.

### **Advantages**

#### **Cost Saving**

Cloud computing has invariable benefited businesses and organizations to help cut costs. The core strategy of every business is to churn out as much revenue as possible, while keeping the expenses at a minimum. With Cloud Computing, you can save substantial capital costs, with zero expense as you don’t need to install applications or in-house servers. With no in-house servers, the operational costs of running and maintaining them is eliminated. If the servers were present physically this would call for massive expenses for maintenance, air conditioning, power and other associated expenses.

The benefits of associating your business process with cloud is that you pay for the services, and disengage whenever you don’t need the storage service. Organizations do not need to worry about expending a massive portion of the IT capital for an in-house sever.

Often people wonder if it is extremely expensive to afford the cloud, but the fact is that it’s quite convenient even for small businesses to get on the cloud. Cloud services are quite affordable for small businesses as well.

#### **Reliability**

With the need to cater to a larger diverse audience, comes a massive bout of responsibility as well. The cloud infrastructure has to be very efficient in catering to the needs of several clients and maintain its consistency in its functionality and services. Most cloud service providers assure a guarantees assistance round the clock for all days of the contract and there is always close to 100% availability. You don’t need to worry about server maintenance and if the host server fails, the hosted files can easily be transitioned to other available servers.

#### **Manageability**

The ordeal of maintaining and dealing with server issues become almost non-existent with cloud services. With opting to venture onto cloud services, businesses will benefit massively for enhanced and structured IT services and the various intricate details of managing the servers. All the services related technicalities are taken care by the service provider and you will enjoy the luxury of a simple web-based user interface to access your applications, services and services. Businesses now need not worry about the installation and massive expenditure on setting up a server with all the amenities. The service providers abide by the signed Service-Level-Agreement to ensure timely assistance to your business needs and they guarantee to provide the required service to help you use the cloud based servers.

#### **Strategic Edge**

With competitions soaring high, you might be in need of the latest applications to catch up with the rest of the crowd. Through cloud computing you will have access to the latest apps and infrastructure to create, develop and enhance your deliverables. Your company could access software that is the need of the hour, without actually having to invest in installations or in the maintenance of the software.

Cloud computing lets you focus on your key business objectives and not worry too much about the installation of applications and software.

### **Disadvantages of Cloud Computing**

#### **Downtime**

With massive overload on the servers from various clients, the service provider might come up against technical outages. Due to this unavoidable situation your business could be temporarily sabotaged.

And in case your Internet connection is down, you will not be able to access the data, software or applications on the cloud. So basically you are depending on the quality of the Internet to access the tools and software, as it is not installed in-house.

#### **Security**

There is room for imminent risk for your data even though cloud service providers abide by strict confidentiality terms, are industry certified and implement the best security standards. When you seek to use cloud-based technology you are extending your access controls to a third party agent to import critical confidential data from your company onto the cloud. With high levels of security and confidentiality involved, the cloud service providers are often faced with security challenges.

The presence of data on the cloud opens up a greater risk of data theft as hackers could find loopholes in the framework. Basically your data on the cloud is at a higher risk, than if it was managed in-house.

Hackers could find ways to gain access to data, scan, exploit a loophole and look for vulnerabilities on the cloud server to gain access to the data.

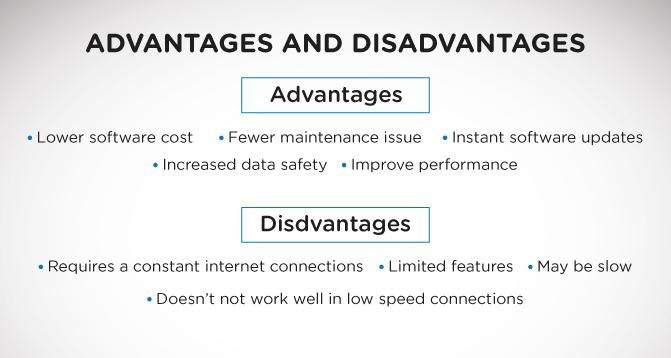
For instance, when you are dealing with a multi-tenant cloud server, the chances of a hacker breaking into your data is quite high, as the server has data stored by multiple users. But the cloud-based servers take enough precautions to prevent data thefts and the likelihood of being hacked is quite less.

#### **Vendor Lock-In**

Companies might find it a bit of a hassle to change the vendors. Although the cloud service providers assure that it is a breeze to use the cloud and integrate your business needs with them, disengaging and moving to the next vendor is not a forte that’s completely evolved. As the applications that work fine with one platform may not be compatible with another. The transition might pose a risk and the change could be inflexible due to synchronization and support issues.

#### **Limited Control**

Organizations could have limited access control on the data, tools and apps as the cloud is controlled by the service provider. It hands over minimal control to the customer, as the access is only limited to the applications, tools and data that is loaded on the server and no access to the infrastructure itself. The customer may not have access to the key administrative services.



# **Future of Cloud Computing**

A cloud allows users to access application, information, and data of all sorts on an online level rather than by use of actual hardware or devices. A company offering reliable cloud technology allows for computing to be done in a much more shared way, as a cloud provides a service rather than a product. Users get and share their information in a way that can allow them to access and give access to the whole world or any groups of people within their cloud.

## **WHAT THE FUTURE OF CLOUD COMPUTING HOLDS**

With cloud computing and the technology behind it there are many potential opportunities and capabilities. Cloud computing can open a whole new world of jobs, services, platforms, applications, and much more. There are thousands of possibilities beginning to form as the future of cloud computing starts to really take off.

For instance, vendors and service providers can get on board to develop new and different ways of selling their goods and services to the cloud users through the cloud technology. It opens up a whole new platform for designers and web developers. Businesses and organizations can organize themselves and conduct business much more affordable and professionally. Social networking and keeping in touch with friends gets a great deal easier as well.

## **WHY CLOUDS ARE SO BENEFICIAL TO THE DATA SHARING WORLD**

The main reason that the future of cloud computing will be as powerful and expansive as it portends to be is that cloud technology is extremely beneficial. For one thing, the extreme agility and accessibility of a cloud is far superior to the use of current technology. No matter where in the world someone happens to be, or what device they are using, they can access their cloud and continue to do their work or share their information.

Not only that, but cloud technology is extremely cost effective, and a company could end up saving thousands by choosing this option. For the reliability a cloud offers, the security it provides, and the performance it boasts of, the cost of a cloud makes it an incredible option for individuals and corporations alike. The future of cloud computing is bright, and wise people of any kind should begin to get on board with trusted cloud computing .

### Conclusion

The advantages of cloud computing is way too good, is quite cost effective and it is efficient. The drawbacks are incidental and almost negligible. The decision to opt for cloud based services is great with saving substantial costs with regards to installation and maintenance, reduced downtime, almost negligible manpower involved in monitoring the servers and no collateral investment with regards to the infrastructure required to house the servers in-house.