



A Case Study On Amazon Web Services



Sathvika Kolisetty · [Follow](#)

25 min read · Oct 11, 2020

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Introduction to cloud computing

Cloud computing is the on-demand availability of computer system resources, especially data storage (cloud storage) and computing power, without direct active management by the user. The term is generally used to describe data centres available to many users over the Internet. Large clouds, predominant today, often have functions distributed over multiple locations from central servers. If the connection to the user is relatively close, it may be designated an edge server.

There are many Cloud Platforms in the market but AWS is one of the most popular clouds.

What is AWS?

Amazon Web Services (AWS) is a subsidiary of Amazon providing on-demand cloud computing platforms and APIs to individuals, companies, and governments, on a

metered pay-as-you-go basis.

Amazon Web Services (AWS) is the world's most comprehensive and broadly adopted cloud platform, offering over 175 fully-featured services from data centres globally. Millions of customers — including the fastest-growing startups, largest enterprises, and leading government agencies — are using AWS to lower costs, become more agile, and innovate faster.

History of AWS

Amazon launched its first cloud computing service, Simple Storage Service (S3) in March of 2006. But the idea for the public cloud began germinating at the company several years earlier.

A popular myth says that Amazon began selling public cloud computing services because it had “excess capacity” from running its eCommerce website. Executives have repeatedly contradicted that story, saying that Amazon Web Services was designed from the ground up as a service for outside customers. However, the company's experiences with eCommerce did help lay the groundwork for AWS.

In the early 2000s, Amazon.com's internal development team had a problem. They were adding a lot of software engineers, but despite the growing headcount, the pace of development was staying about the same. The issue was that each developer was setting up new and unique compute, storage and database resources for each project. The IT group realized that if they could standardize those resources and simplify the process of deploying new IT infrastructure, they might be able to speed things up.

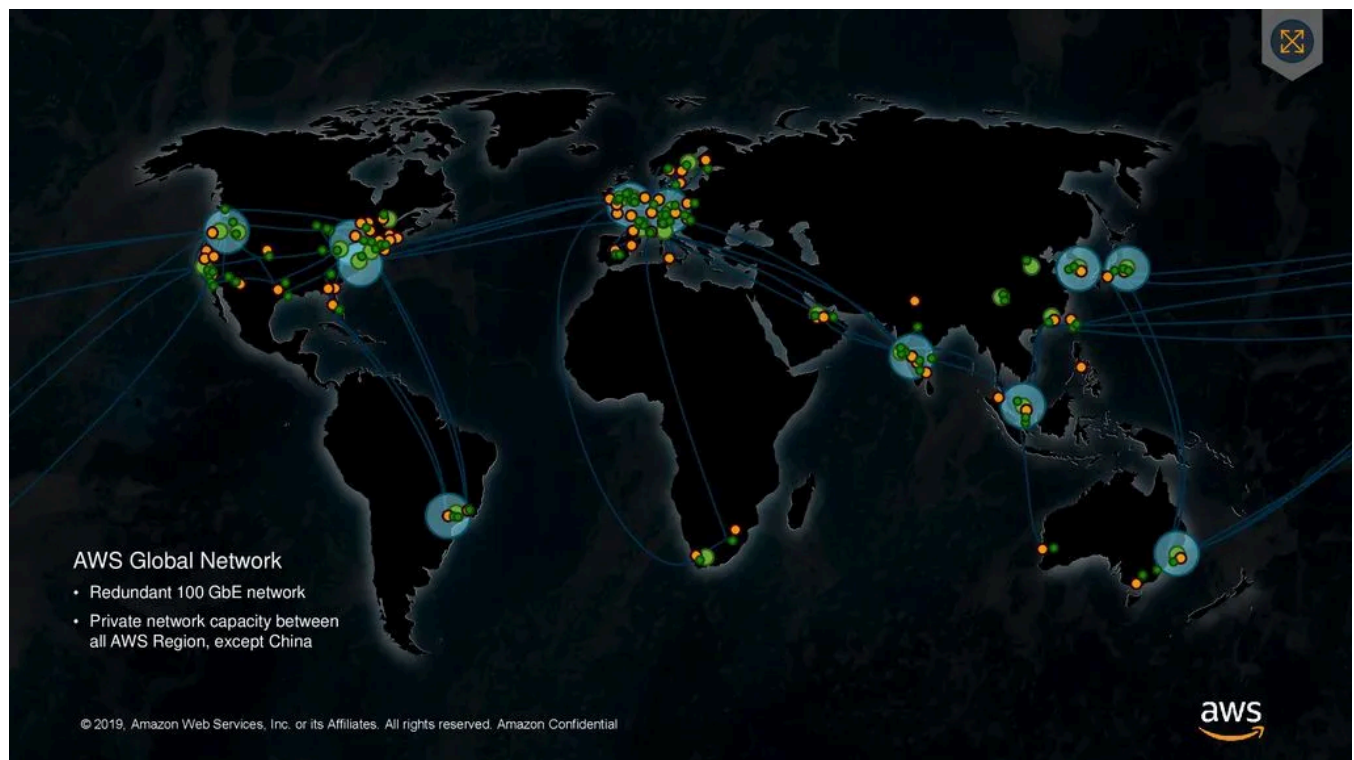
In 2003, former Amazon employee Benjamin Black and his boss Chris Pinkham wrote a paper for Amazon founder and CEO Jeff Bezos. It described “a vision for Amazon infrastructure that was completely standardized, completely automated, and relied extensively on web services for things like storage.” In a blog post, Black explained, “Near the end of it, we mentioned the possibility of selling virtual servers as a service.”

That idea cropped up again that same year when Amazon executives were attending a retreat at Bezos' house. As current AWS CEO Andy Jassy tells the story, the group was working to identify their core competencies when they realized they had become pretty good at running IT infrastructure. They began to consider the idea of offering those IT services to other companies. The idea gained momentum, and in

2004, Black, Pinkham and their team began work on the project that eventually became AWS. After the launch of S3 in the spring of 2006, AWS followed up by taking its Simple Queue Service into production and launching its Elastic Compute Cloud (EC2) that summer. By the following year, the company amassed a reported 180,000 developers as customers.

In the years that followed, Amazon's cloud quickly expanded with additional services and more regions. In 2010, Netflix became the first company to announce publicly that it would run all of its infrastructure on AWS. After that, customers began to sign up even more quickly, and AWS developed the market share that put it far ahead of all the other competitors who began to offer their own cloud computing services.

AWS Regions



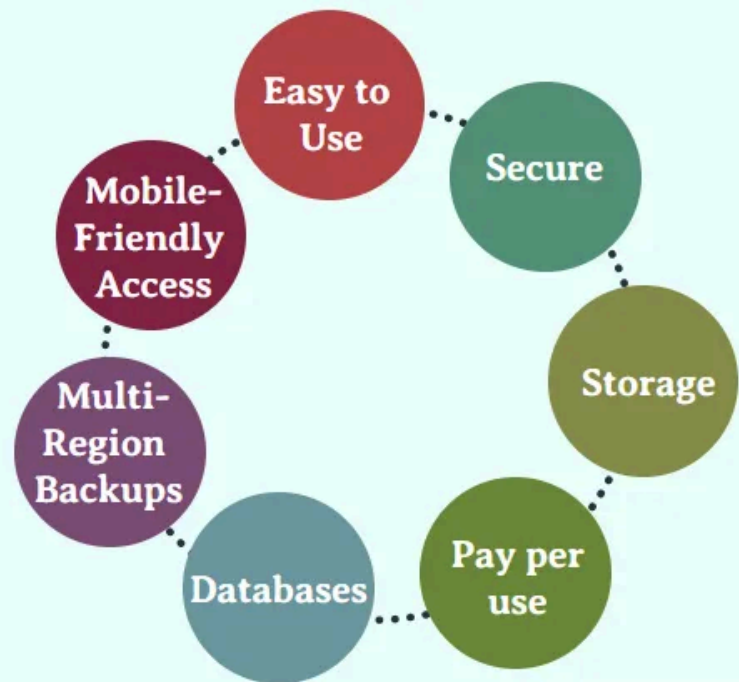
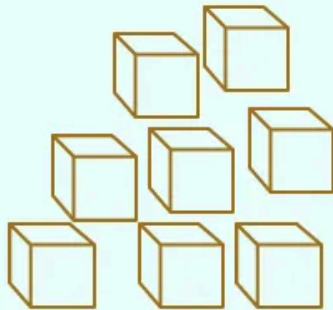


Data Centre of AWS -



Benefits of Amazon Web Services

Benefits Of AWS



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- **Most functionality** -AWS has significantly more services, and more features within those services, than any other cloud provider—from infrastructure technologies like compute, storage, and databases—to emerging technologies, such as machine learning and artificial intelligence, data lakes and analytics, and Internet of Things. This makes it faster, easier, and more cost-effective to move your existing applications to the cloud and build nearly anything you can imagine. AWS also has the deepest functionality within those services. For example, AWS offers the widest variety of databases that are purpose-built for different types of applications so you can choose the right tool for the job to get the best cost and performance.
- **The largest community of customers and partners** -AWS has the largest and most dynamic community, with millions of active customers and tens of thousands of partners globally. Customers across virtually every industry and of every size, including startups, enterprises, and public sector organizations, are running every imaginable use case on AWS. The AWS Partner Network (APN) includes thousands of systems integrators who specialize in AWS services and tens of thousands of independent software vendors (ISVs) who adapt their technology to work on AWS.
- **Most secure**-AWS is architected to be the most flexible and secure cloud computing environment available today. Our core infrastructure is built to satisfy the security requirements for the military, global banks, and other high-sensitivity organizations. This is backed by a deep set of cloud security tools,

with 230 security, compliance, and governance services and features. AWS supports 90 security standards and compliance certifications, and all 117 AWS services that store customer data offer the ability to encrypt that data.

- **Fastest pace of innovation** -With AWS, you can leverage the latest technologies to experiment and innovate more quickly. We are continually accelerating our pace of innovation to invent entirely new technologies you can use to transform your business. For example, in 2014, AWS pioneered the serverless computing space with the launch of AWS Lambda, which lets developers run their code without provisioning or managing servers. And AWS built Amazon SageMaker, a fully managed machine learning service that empowers everyday developers and scientists to use machine learning—without any previous experience.
- **Most proven operational expertise** — AWS has unmatched experience, maturity, reliability, security, and performance that you can depend upon for your most important applications. For over 13 years, AWS has been delivering cloud services to millions of customers around the world running a wide variety of use cases. AWS has the most operational experience, at greater scale, of any cloud provider.
- **Agility**- The cloud gives you easy access to a broad range of technologies so that you can innovate faster and build nearly anything that you can imagine. You can quickly spin up resources as you need them—from infrastructure services, such as compute, storage, and databases, to the Internet of Things, machine learning, data lakes and analytics, and much more. You can deploy technology services in a matter of minutes, and get from idea to implementation several orders of magnitude faster than before. This gives you the freedom to experiment, test new ideas to differentiate customer experiences and transform your business.
- **Elasticity** -With cloud computing, you don't have to over-provision resources upfront to handle peak levels of business activity in the future. Instead, you provision the number of resources that you actually need. You can scale these resources up or down to instantly to grow and shrink capacity as your business needs change.
- **Cost Savings**-The cloud allows you to trade capital expenses (such as data centres and physical servers) for variable expenses and only pay for IT as you consume it. Plus, the variable expenses are much lower than what you would pay to do it yourself because of the economies of scale.

- **Deploy Globally in minutes**-With the cloud, you can expand to new geographic regions and deploy globally in minutes. For example, AWS has infrastructure all over the world, so you can deploy your application in multiple physical locations with just a few clicks. Putting applications in closer proximity to end users reduces latency and improves their experience.

Types of cloud computing

The three main types of cloud computing include Infrastructure as a Service, Platform as a Service, and Software as a Service. Each type of cloud computing provides different levels of control, flexibility, and management so that you can select the right set of services for your needs.

1.IaaS (Infrastructure as a Service)- IaaS contains the basic building blocks for cloud IT. It typically provides access to networking features, computers (virtual or on dedicated hardware), and data storage space. IaaS gives you the highest level of flexibility and management control over your IT resources. It is most similar to the existing IT resources with which many IT departments and developers are familiar.

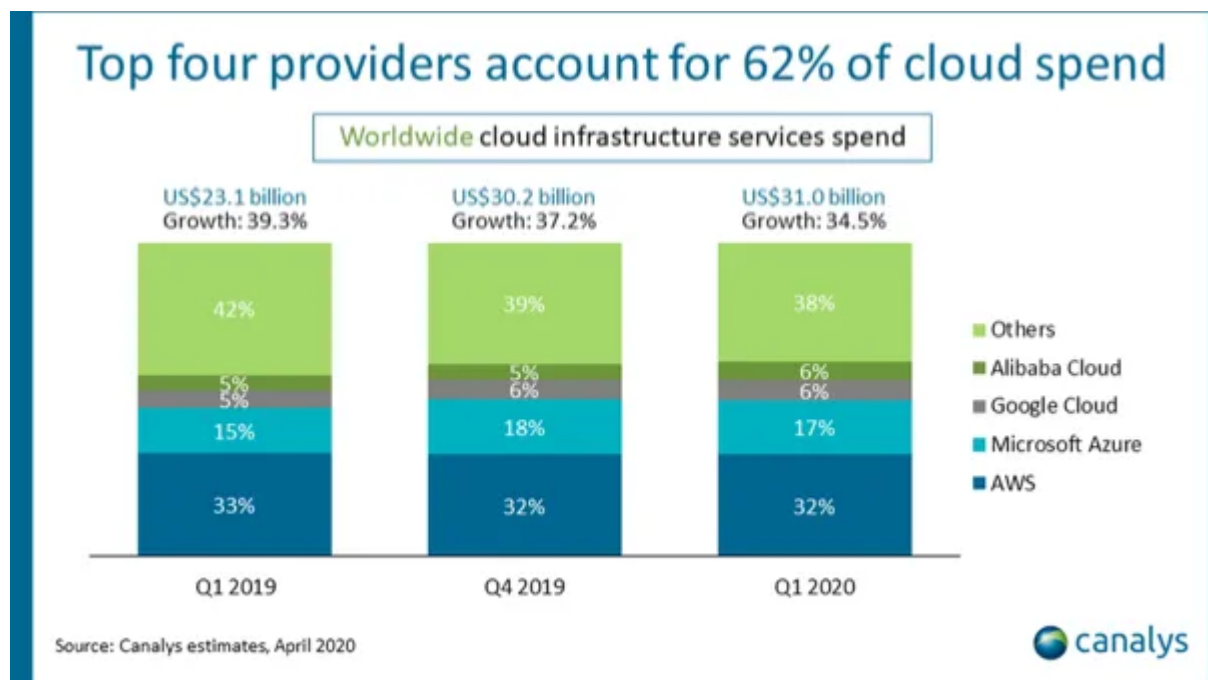
2.Platform as a Service -PaaS removes the need for you to manage underlying infrastructure (usually hardware and operating systems), and allows you to focus on the deployment and management of your applications. This helps you be more efficient as you don't need to worry about resource procurement, capacity planning, software maintenance, patching, or any of the other undifferentiated heavy lifting involved in running your application.

3.Software as a Service-SaaS provides you with a complete product that is run and managed by the service provider. In most cases, people referring to SaaS are referring to end-user applications (such as web-based email). With a SaaS offering, you don't have to think about how the service is maintained or how the underlying infrastructure is managed. You only need to think about how you will use that particular software.

Who is using cloud computing?

Organizations of every type, size, and industry are using the cloud for a wide variety of use cases, such as data backup, disaster recovery, email, virtual desktops, software development and testing, big data analytics, and customer-facing web applications. For example, healthcare companies are using the cloud to develop more personalized treatments for patients. Financial services companies are using the cloud to power real-time fraud detection and prevention. And video game

makers are using the cloud to deliver online games to millions of players around the world.



Best Public Cloud Providers

Amazon Web Services

Amazon Web Services (AWS) is the undisputed market leader in cloud computing, from overall market share to most expansive cloud offering. It has vast resources

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The company offers a complete range of IaaS and PaaS services. Among the best known are its Elastic Compute Cloud (EC2), Elastic Beanstalk, Simple Storage Service (S3), Elastic Block Store (EBS), Glacier storage, Relational Database Service (RDS), and DynamoDB NoSQL database. It also offers cloud services related to networking, analytics and machine learning, the Internet of Things (IoT), mobile services, development, cloud management, cloud security and more.

Microsoft Azure

Most market analysts put Microsoft squarely in the number two spot behind Amazon. Its cloud portfolio is exhaustive: in addition to its Azure IaaS and PaaS offerings, Microsoft also has several SaaS offerings, including its Office 365 products, the online versions of its Dynamics line of enterprise software and its online developer tools.

Naturally, Microsoft's long legacy in corporate IT helps it grow its cloud business. Pundits say that Microsoft has "enterprise IT in its DNA." Azure is leading edge on all the newest cloud technologies, from serverless (FaaS) to microservices to containers. It is set up to handle a broad range of clients, from SMB to a larger enterprise, from multi-cloud to — especially — hybrid cloud. To fill out its offering, it has longstanding alliances with other legacy vendors, from VMware to Oracle.

IBM Cloud

Although it hasn't always been considered one of the "big three" cloud computing vendors, IBM's cloud business has been coming on strong. Particularly advantageous was IBM's acquisition of Red Hat, which allows it to leverage Red Hat's OpenShift cloud platform, a PaaS solution geared for containers. The company is also strong in hybrid — befitting its customer base of large enterprise clients, which in some cases are working on a classic lift and shift migration to the cloud, for which IBM is well suited.

One of IBM's key cloud service is its Bluemix PaaS, which is aimed primarily at enterprise development teams. The company also a lot of enterprise software on a SaaS basis, and it sells cloud infrastructure, cloud management tools and cloud managed services.

Google Cloud Platform

While it may run third behind AWS and Azure, Google is a major contender in the cloud market. Its deep strength and data analytics and artificial intelligence is only growing, and will likely be a major force in the years ahead. Its industry-leading creations with TensorFlow and Kubernetes are examples of the sophisticated solutions that earn GCP leader status in the cloud market.

Like Amazon and Microsoft, Google offers an extensive range of IaaS and PaaS services that span computes, storage, networking, big data, machine learning, developer tools and security. Some of its best-known cloud offerings include Compute Engine, App Engine, Container Engine, Cloud Storage and BigQuery.

Oracle Cloud Infrastructure

Having invested aggressively after its initial slow start, Oracle has come a long way to earn to spot in this leader's list. Indeed, look to Oracle to continue to grow in the cloud sector — the company has certainly signalled its intention to be a major cloud vendor in the years ahead. It is expanding availability zones both domestically and internationally.

The Oracle cloud is generally favoured by larger enterprise and existing Oracle customers, as opposed to SMB and developers, two cohorts that have fueled AWS's rise. It has a strength in hybrid cloud computing, which is a good fit for larger customers that have a legacy investment in on-premise IT infrastructure and data centres. The company's Oracle Dedicated Region Cloud Customer solution is an on-prem offering that is a well designed, technologically advanced mirror of the cloud version. Oracle has a partnership with Microsoft Azure for those cloud functionalities it can't currently support.

Alibaba Cloud

The clear leader in the Asian cloud market, Singapore-based Alibaba is forecast to grow rapidly as cloud computing continues to grow in a variety of Asian countries. Given that, Alibaba is the best fit for international customers who also want to do business in Asia, and, of course, Asian companies. It benefits from its deep strength in eCommerce, which is Alibaba's core business. With this deep expertise, it enables customers to access new sources of Internet-based income.

The company offers a cloud-based AI service, which will almost certainly be a major growth area in the near term future. Indeed, Alibaba is well regarded for its data solutions, with interoperability with myriad other data platforms. Again, this is a major strength for its e-commerce clients. While the company is currently largely an Asian player, it's entirely possible that it will expand into other geographic markets as its cloud and data offerings mature.

When to Use AWS

AWS offers something for everyone — whether you are a developer working on a hobby project or a Fortune 500 company looking to become more agile. It is the generalist of the public cloud computing market with a huge array of services available. It is often used in hybrid IT.

As the first and largest cloud provider, AWS has very mature, tested offerings. It is unlikely to go out of business anytime soon, and it is a solid choice for most cloud computing use cases.

Additionally, the company is innovating at a breathless pace, and it's reasonable to assume that its product and solution portfolio will expand considerably in the years ahead.

When Not to Use AWS

If AWS has a weakness, it is its lack of offerings for hybrid cloud deployments. Analysts say that most enterprises will be pursuing a hybrid cloud, multi-cloud strategy, and Amazon's competitors Microsoft Azure and IBM have an advantage in this area. Because many large organizations already use Microsoft and IBM products in their data centres, they naturally gravitate to these other providers for the public cloud portion of their hybrid clouds.

And the jury is still out on whether AWS will be the best option for emerging technologies like artificial intelligence, machine learning, the Internet of Things and containerized deployments. All of the leading vendors are competing heavily in these areas, and AWS will have to continue to innovate if it wants to retain its position as the market leader. In the technology industry, markets can shift very quickly, and being the number one provider today is no guarantee of future performance.

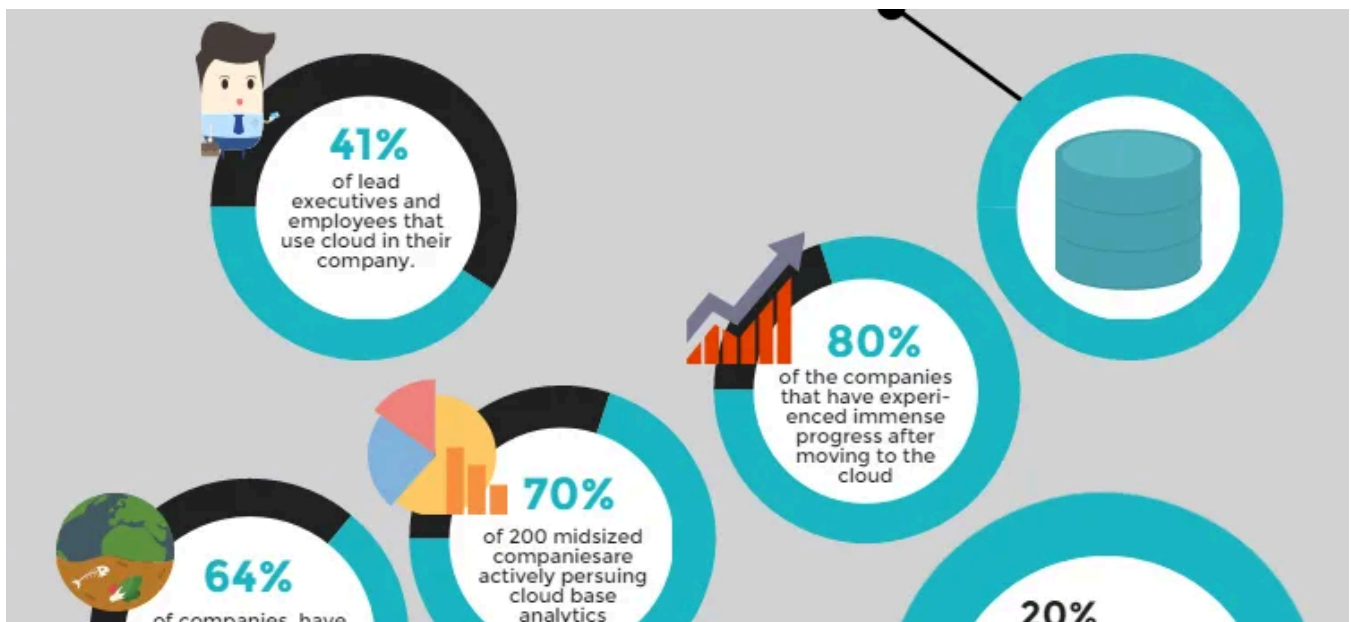
AWS Use Cases

Millions of customers — including the fastest-growing startups, largest enterprises, and leading government agencies — are using AWS to lower costs, become more agile, and innovate faster.

In every field, the AWS service is used. Below are some areas and some top companies use AWS.

- Aerospace (NASA, Maxar, ESA etc.)
- Gaming (MPL, FanFight, Gammation etc.)
- Education (Coursera, BYJU's etc.)
- Telecommunication (Pinterest, Vodafone, Aircel etc.)
- Entertainment (Netflix, Hotstar etc.)
- Media (BBC, The Hindu, Punjab Kesri etc.)
- Software (Share chat, Slack etc.)

Cloud Computing Facts



By now, it's obvious that the cloud is widely used and that people spend a great deal of money creating, managing, and upgrading their cloud computing systems, but you may be wondering *how* widely used it is and *how* much money the cloud draws. Here are some fascinating facts to wrap your mind around:

Nearly one-half of US Government agencies use the cloud.

Annually, these agencies spend \$2 billion on creating, supporting, and maintaining cloud services. Some experts say that the government is the largest user of the cloud in the world. Within the different branches of the government that use the cloud, commercial clouds, private clouds, and shared clouds are all used. Private clouds, specifically, are employed by the government in an attempt to maintain security and control over the cloud.

Banking produces the most activity within the cloud.

This is due in large part to the introduction of widespread mobile banking services in 2013. Additionally, the rise of crowdfunding services and money management services like PayPal have grown, driving the act of paying virtually for goods through the roof. With the rising popularity of virtual currencies like Bitcoin, this trend of cloud computing for banking is only projected to continue.

The cloud computing market is projected to reach \$106 billion by 2016.

This represents a 30% growth rate from 2013. This is especially stark when you take into account that the entire enterprise IT industry is only expected to experience a 5% growth rate between 2013 and 2018. Additionally, experts project that by 2018, 59% of all of the cloud's workload will be the result of Software-as-a-Service This represents a 41% increase since 2013.

60% of U.S. IT decision-makers trust the security of the cloud.

When it comes to storing sensitive data in the cloud, the grand majority of IT experts aren't concerned. Additionally, 80% of enterprises globally use the cloud to store their data. What's more, 82% of companies reported saving money when they adopted the cloud, and 14% report downsizing their IT department as a result of the presence of the cloud.

Within the next five years, the public cloud will experience a 44% growth.

This is in contrast to the 9% growth rate that is projected for “on-premise” and hard-drive-based forms of computing.

80% of companies that adopt the cloud see improvements within their IT departments within six months.

These improvements were generally in the areas of efficiency, quality, and security. Additionally, moving to the cloud helped these companies save money, cut costs, and use staff more efficiently. After adopting the cloud, upwards of 90% of IT, decision-makers saw marked improvements in at least one area of the IT department.

2014 represented the first year when the majority of workloads were on the cloud.

In 2014, 51% of workloads were processed via the cloud. This is compared to 49% processed in traditional IT space. Since global data center traffic is predicted to increase threefold between 2012 and 2017, this number will only continue to go up.

With these statistics in mind, it's clear that the future of the cloud looks bright and that companies that choose to adopt the cloud see large and almost immediate benefits. From high-level enterprise data storage to simple financial processing, the cloud is a fantastic go-to system for businesses in all industries and of all sizes. In addition to providing unparalleled security and ease of access, the cloud offers the added benefit of helping companies stay connected, access data easily, and do business in a more streamlined fashion

Why is AWS so Successful?

Amazon Web Services (AWS), the cloud platform offered by Amazon.com Inc (AMZN), has become a giant component of the e-commerce giant's business portfolio. In the first quarter of 2020, AWS brought in a record \$10 billion of revenue, accounting for 13.5% of Amazon's total revenue. Having grown steadily in the 30-per cent range the past few quarters, AWS is a frontrunner to other cloud computing platforms such as competitor Microsoft Azure.

AWS is the most robust cloud offering available to date! I believe that ... unfortunately ... people tend to look at user-friendliness, lower or lowest cost, and even a limited amount of CSP products (easier to make up one's mind when there are only a few things to contend with) ... to decide on what's best. This was the case years ago with the microprocessor revolution: Intel Vs AMD Vs Cyrus. The incumbent was the most expensive ... and the competition came with not only more attractive price tags ... but in some cases more speed for the price and other desirables attributes. But at the end of the day ... there would always be a fantastic “must-have” application that would run “buggy at best” ... you know ... the app that YOU bought ... just to find out later after researching online ... or worse yet ... you took the time to read the box off the shelf from Microcenter or Best Buy that states “only runs on Intel processors” ... and one at a certain level of production (i7 for example). So when in doubt ... or ... I care to not dare the scalability Gods and endure their wrath ... just go with the one that may cost a bit more ... and may call for a little more patience to grasp and understand ... that will give you lots of options for your company and customers ... has been around the longest and still holds the lion's share of the market, etc, etc. Plus ... AWS offers a ton of managed services and resources that allow you to focus on your business ... and less on the technology!

Case studies on AWS

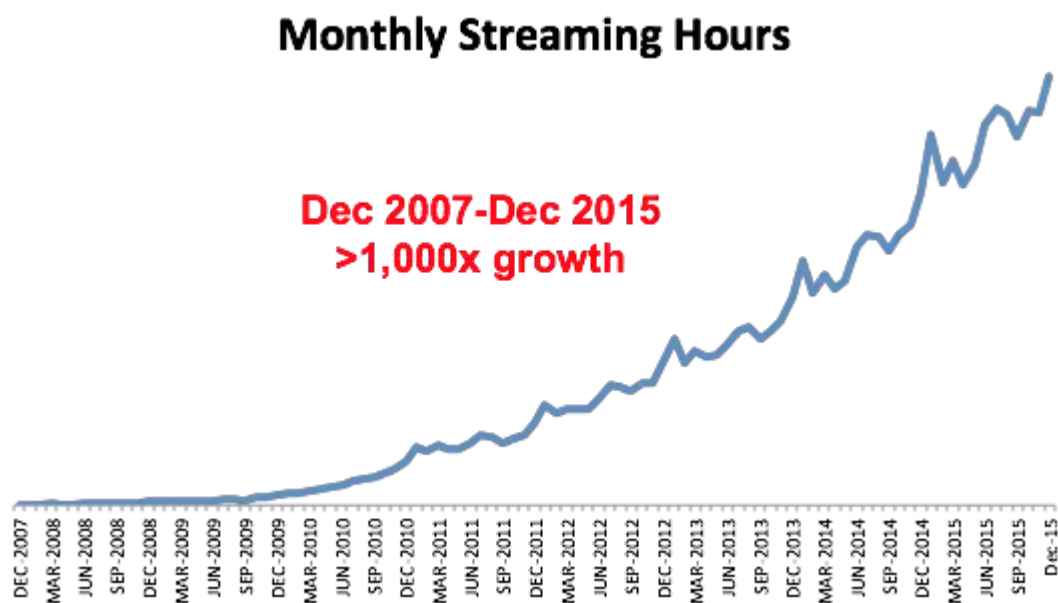
Netflix AWS Case Study



Netflix was originally a DVD shipping business where they would send out DVDs of your chosen programs to you. This was going well until 2008 where they experienced a major database loss and for 3 days could not ship out any DVDs to their customers. That was when the senior management at Netflix realized that they had to shift from continuous vertical scaling which leads to single points of failure

to a more reliable and scalable horizontal scaling system. They chose Amazon Web Services despite having Amazon as a competitor (Amazon has their own streaming service known as Amazon Prime) because AWS provided them with the greatest scaling capabilities and the biggest set of available features. It took 7 years of migration for Netflix to shut down their last remaining data centres and move completely to the cloud.

Moving to the cloud has allowed Netflix to keep its existing members well engaged with overall viewing growing exponentially.



Netflix itself has continued to evolve rapidly by using many new features and relying on ever-growing volumes of data. Supporting this fast growth would not be possible earlier using their own in-house data centres. Netflix could not have racked the servers fast enough to support their own growth. While Cloud brings elasticity, which allows Netflix to add thousands of virtual servers and petabytes of storage within minutes which makes the whole process easier.

As of January 2016, Netflix has expanded into 130 new countries. It uses multiple AWS Cloud regions which are spread all over the world to create a better and more enjoyable streaming experience for Netflix members wherever they are.

Netflix relies on Cloud for all its scalability, computing and storage needs (not only video streaming) — Netflix business logic, distributed databases, big data processing, analytics, recommendations, transcoding and hundreds of other functions that are used by Netflix all go through their Cloud infrastructure. Netflix

also has its own Content Delivery Network (CDN) known as Netflix Open Connect which is used to deliver videos globally in an efficient manner.

When Netflix was using their own data centres, they faced a lot of outages. Cloud Computing is not perfect either, even though Netflix has hit some rough patches in the cloud, a steady increase in the overall availability has been noticed. Failures are ultimately unavoidable in any large-scale distribution system, even a cloud one. However, a Cloud-based system allows you to create redundancy measures while become quite helpful. Cloud Computing has made it possible to survive failures without impacting the member experience.

Netflix did not shift to cloud for cost reduction reasons, but Netflix's cloud costs ended up being a fraction of their cost which was a pleasant surprise. This was due to the elasticity factor of cloud computing, enabling Netflix to continuously optimize instances to grow and shrink as per requirement without the need to maintain large capacity machines. Economies of Scale helps Netflix in this scenario.

The benefits are very clear, but it still took seven years for Netflix to complete the migration. Moving to the cloud is a lot of work and a lot of factors need to be considered. Netflix could easily move all of its existing systems to AWS but bringing existing systems also brings all the problems and limitations that were present. So, Netflix took the cloud-native approach, they rebuilt all of their technology and fundamentally changed the way they operate the whole company. Netflix migrated from a single application to thousands of micro-services.

Siemens on AWS



A global leader in electrification, automation, and digitization, Siemens AG has driven innovation across industries for nearly 175 years. Siemens uses an array of AWS services to carry on that tradition of transformation — bringing IIOT to railways and factories, developing intelligent infrastructure for buildings and

distributed energy systems, implementing AI into its cybersecurity platform, and more.

As part of its strategy of providing digital transformation solutions to realize value across the entire business and embrace Industry 4.0, Siemens built MindSphere, its open Internet of Things (IoT) operating platform hosted on AWS. Driven by automation, IoT, and cloud computing, Siemens can now solve business problems with the data that it collects, analyzes, and monitors. Learn how and why Siemens built MindSphere on AWS, for its own global factories, and for its customers, in order to achieve world-class levels of manufacturing efficiency.

Adobe Systems On AWS



Adobe Systems Managed Services program delivers enterprise software such as Adobe LiveCycle Forms, Adobe Connect conferencing software, and Adobe CQ5 to Fortune 100 companies, large multi-national corporations, and government agencies. Adobe uses AWS to provide multi-terabyte operating environments for its customers. By integrating its systems with the AWS Cloud, Adobe can focus on deploying and operating its own software instead of infrastructure.

Adobe Creative Cloud Suite can now run on AWS, enabling you to unlock creativity from anywhere in the world. With the joint effort between Adobe and AWS, applications including Adobe Premiere Pro, Adobe After Effects, Adobe Photoshop, and Adobe Media Encoder are no longer bound to your local desktop. Adobe has published a [white paper](#) that gives prescriptive guidance on the planning, deployment, and use of Adobe Creative Cloud software suite on AWS.

Customers frequently ask if they can run their editing software in AWS. From these inquiries, it's clear that patterns of use can be described in the form of distinct use

cases, or what we call user personas. Some of the most common personas are News/Sports, Creative, and Promo. The goal in identifying personas is to provide enough flexibility around common use cases to allow for easy application against a variety of additional use cases, such as long and short-form productions, conformance edits, and manual quality control. Personas have different demands in terms of storage, network bandwidth, disk I/O, CPU, and memory. Naturally, there are some workflows that are a challenge in the cloud, including colour grading, colour fidelity, and multi-channel audio support. As Virtual desktop infrastructure (VDI) protocols evolve to support functionality such as 10-bit colour and more audio channels, these workflows can be enabled, and AWS has designed its templates with flexibility in mind to accommodate future feature improvements.

The [Adobe / AWS white paper](#) walks you through key decisions when designing for creative application use in the cloud, such as network setup, latency, and locality of an AWS region. It is important to note that minimizing network latency has a direct impact on workstation interactivity and that being physically closer to an AWS region provides a better user experience. Additionally, locations such as Los Angeles have dedicated [AWS Local Zones](#), which reduce latency by placing AWS compute, storage, database, and other select services closer to a large population, industry, and IT centres. Finally, when operating in a production facility, studio, or creative office, [AWS Direct Connect](#) enhances not only connectivity through dedicated capacity, but also adds a layer of security abstracting the public internet path. When choosing a deployment location or region, a target latency of around 30ms or less will provide an optimal experience. Higher latency may lead to a lag in peripheral device interactivity such as jog/shuttle operations, or general playback and graphical interface activities.

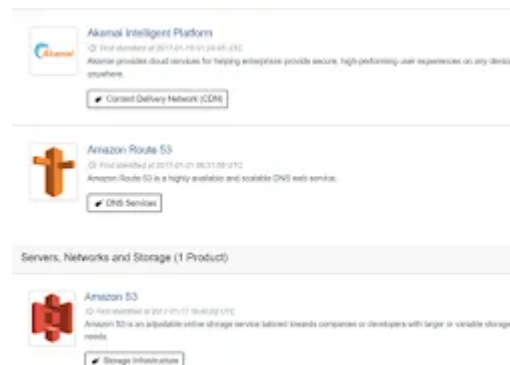
Hotstar On AWS

Using AWS, Novi Digital drastically reduced both cost and time to market for its over-the-top (OTT) content platform, hotstar.com. Novi Digital is one of India's largest media companies, providing streaming video for more than 40 channels in seven languages to more than 720 million users. The company uses AWS to provide cost-effective scalability and reliability for its OTT platform.

Here, the Hotstar app acquired by star India Pvt. Ltd has been given the 5700000 Mbps (5700 Gbps) of bandwidth during a live match, which somehow interesting for any tech enthusiastic person. How exactly Hotstar works with the backend

architecture that India choose Hotstar over Netflix and amazon prime video, even having the toughest competition.

Hotstar using the following tech stack from AWS service.



Ajit Mohan, the CEO of Hotstar, said “India is the only country in the world where a streaming platform like Hotstar exists, and where the best TV shows from around the world, movie premieres and live sports are available on a single platform”

Well, at the current point, hearing this feels good, but the question still remains how?

At the back end side, Hotstar uses the architecture having the AWS services. Amazon Route S3 and Amazon CloudFront are services for the Hotstar streaming video.

Even they also use Amazon S3 for the Hotstar.

At a movement, It is obvious to feel awkward after all what this service is and how they are being used for such vast video streaming applications.

So, Let's take a little bit look for the amazon service used for the era of Gbps.

Amazon Web Services are a box of the bunch of services for any kind of users.

It doesn't only just provide the hosting of the web services efficiently and effectively but also provides the platform to build the applications by using different functionality.

Efficient hosting by not waiting for the yearly subscriptions, which are somehow much confusing, is being provided by AWS without having the extra attention to the server services.

AWS provide any services to users at the price of their usage.

Prices will be according to the usage of the services.

Pay for whatever you use.

Amazon Web Services is a collection of remote computing services such as web services or data retrieving, by having the cloud application platform.

AWS offers such *centralize services using Amazon EC2 and Amazon S3*.

Having a physical data-centres, with lots of wires, routers and switches, firewalls, so many other network devices, with lots of numbers and labels over it, having a huge electricity bill of that equipment and maintenance of them is simply not an easy task to manage.

The traditional data centre looks like below-mentioned image.

(Having such a huge and complex architecture people cannot deny if they will invest for data centres instead of any gold jewellery 😊)



Fig: 3 Traditional Data Centre[7]

Either organisation can focus to build or deploy the application or can maintain them with the server processing.

AWS provides a better solution for such kind of scenario with reduced cost and efficient manageable services.

Thus, there is no doubt why Hotstar application uses AWS for backend tech stack.

Services for Hotstar AWS used are explained below.

Amazon Route 53

The name itself suggests that at the port no 53, the AWS provides the DNS services to its applications. It easily and effectively connects the EC2 instances or Amazon S3 bucket, and it also provides the routing information to the outer side of the AWS infrastructure.

This makes AWS more user friendly.

Amazon EC2

Provide Scalability and reusability to the computing capacity in the AWS cloud. Which makes less to hardware and more to developing and deploying applications to the cloud. Which is more helpful to the application developers who can focus to build the different applications instead of managing them to the cloud servers. Various instances for CPU, memory, network, and storages are available as per need.

Amazon CloudFront

Low latency and high transfer speed of 5700 Gbps for Hotstar is somehow possible through CloudFront as it provides Content Delivery Network (CDN) services. Any user can directly use the cloud front who is familiar with other services of AWS. It is already included with AWS subscription for the user.

Amazon S3

Storing the data and fetching them as per the need is the advantage of the AWS services.

To store, retrieve or analyze, millions of data from anywhere at any time can be possible with the AWS S3. As at the 5700 Gbps bandwidth, the Hotstar is providing the live match to the millions of India public, who are crazy for match and this has already been cracked the record to provide the live video streaming.

There are just a few names used as a service of AWS. They itself are huge research topics.

Here, I have just mentioned which services are used by Hotstar and how they make Hotstar application more stable among other video streaming application.

It provides simple, but strong technical architecture for the 5700 Gbps bandwidth for Live match video streaming.



BMW Case Study

The BMW Group is using AWS for its new connected-car application that collects sensor data from BMW 7 Series cars to give drivers dynamically updated map information. BMW Group is one of the leading manufacturers of premium cars and mobility services in the world, with brands such as Rolls Royce, BMW, and Mini. BMW built its new car-as-a-sensor (CARASSO) service in only six months leveraging Amazon Simple Storage Service (Amazon S3), Amazon Simple Queue Service (Amazon SQS), Amazon DynamoDB, Amazon Relational Database Service (Amazon RDS), and AWS Elastic Beanstalk. By running on AWS, CARASSO can adapt to rapidly changing load requirements that can scale up and down by two orders of magnitude within 24 hours. By 2018 CARASSO is expected to process data collected by a fleet of 100,000 vehicles travelling more than eight billion kilometres.

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