

THE STATE OF THE CLOUD 2019

BRIGHTRED RESOURCING LIMITED
FEBRUARY 2019



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Right from the time when Google CEO Eric Schmidt introduced the term cloud computing in an industry conference in Aug 2006 to until today, cloud computing has never looked back. While it all started as a server virtualization technology, the amazing benefits offered by this technology made people extend its functionality into every area of business. Be it software, hardware or other services, every business operation is available in the cloud today. You name a service and you get it in the cloud. With the proliferation of mobile technologies, BYOD networks, IoTs, AI and ML, cloud has now become a part of everyday life.

An overview of Cloud Computing

Cloud computing, in simple terms, is an innovative technology wherein IT resources are hosted online using a network of servers and are served over the Internet via a pay per use model. With resources readily available in the cloud, this technology brings faster time to market, eliminates CapEx, offers flexibility to customize resources on-demand

and brings economies of scale. High scalability is the biggest advantage.

Today, everyone knowingly or unknowingly uses the cloud in some form or the other. The cloud evolution took place in different phases. It was IBM that first introduced the concept of cloud computing via Main Frames where they virtualised servers. In 2006, Google CEO Eric Schmidt coined the term cloud computing in a technology conference. However, the actual cloud era began in 2007 where cloud services were categorised into different models such as SaaS, PaaS, IaaS, etc. Today, cloud has evolved much wider and is serving every area of business.

How it works?

In a cloud computing environment, the cloud service provider hosts computing resources such as applications, development platform and the IT infrastructure in the data centre and securely delivers these services to customers via a pay per use model. So, businesses don't have to invest in CapEx. They can simply choose the services they require and subscribe to them on a temporary basis. They will be billed only for the services used. In addition, businesses don't require a high-end computing infrastructure. They can use any device to access to resources from anywhere and anytime.



THE BENEFITS OF CLOUD

Here are some of the benefits offered by the cloud:

- 👉 **Mobility Solutions:** As IT resources are hosted in the cloud, business services become mobile, and therefore, anywhere access is now possible.
- 👉 **High scalability:** The cloud offers highly scalable infrastructure. So, you can instantly scale resources on-demand, either to increase or decrease capacity.
- 👉 **Speed and Reliability:** Cloud services bring greater levels of speed and reliability to business services, meaning productivity is increased for an organisations' workforce.
- 👉 **Flexibility:** Cloud services are flexible. Businesses can choose one or more services and unsubscribe to them if they don't need them or if they don't like one of the services. The billing will be only for the services consumed.
- 👉 **Reduced Costs:** Cloud reduces capital expenses, brings speed and scalability and highly optimises your business services. So, overall costs are significantly reduced.
- 👉 **Simplified IT Management:** Cloud services simplify IT management as organisations can monitor and manage their entire IT infrastructure from a central dashboard. Maintenance and software update tasks are handled by the cloud service provider, many being completed automatically.

TYPES OF CLOUD SERVICES

Here are three commonly used Cloud Services:

1. Software as a Service (SaaS)

SaaS is a type of cloud service wherein software applications are hosted in the cloud and are delivered over the internet on-demand using a pay per model subscription. The service provider will take care of software update and maintenance. Gmail, Salesforce, Office365 are some of the examples of SaaS products.

2. Platform as a Service (PaaS)

In a PaaS model, platforms for developing, testing and managing software are delivered over the cloud on-demand. It means developers can quickly create apps from anywhere. AWS Elastic Beanstalk, Heroku and Force.com are some of the examples of PaaS.

3. Infrastructure as a Service (IaaS)

IaaS is a type of Cloud service that offers IT infrastructure such as storage, compute, virtual machines and network over the internet on-demand. Amazon EC2 and Amazon S3 are examples of IaaS products.



TYPES OF CLOUD DEPLOYMENT



Based on organisational business requirements, cloud computing is categorized into three main deployment types.

PUBLIC CLOUD: A Public Cloud is a multi-tenant system. In this system, cloud resources are shared by multiple customers. The cloud provider owns and manages the infrastructure while delivering them over the cloud on-demand. With economies of scale, public cloud is significantly cost-effective.

PRIVATE CLOUD: A private cloud is a single-tenant system wherein cloud resources are exclusively accessed by a single business. It can either be on-site or can be hosted by a cloud provider. It provides higher security.

HYBRID CLOUD: A hybrid cloud is a combination of public and private clouds. Organizations can

use a private cloud to store and manage sensitive and business critical data while other generic data can be moved on to a public cloud to optimize costs.

The State of the Cloud Market 2019



Right from its inception, the cloud market has always been on the rise. According to [Zion Market Research](#), the global mobile cloud market earned a revenue of \$19.9 billion in 2018. This value is expected to touch \$122.8 billion by 2025, growing at the Compound Annual Growth Rate (CAGR) of 29.7% during this period. This surge can partially be attributed to the implementation of mobile technology in education wherein students access information through a mobile device, with a focus on cloud and Artificial Intelligence. According to a report published by [Forbes](#), the cloud segment of Amazon accounts for 55% of its revenues.



Financial services are the highest adopters of the cloud. According to Gartner, the global public cloud earned a revenue of \$175.8 billion in 2018. This value is expected to reach \$206.2 billion, a 17.3 % growth in 2019. Among various cloud services, Infrastructure as a Service (IaaS) is the fastest growing segment. Gartner expects the IaaS market to grow 27.6% in 2019 to reach \$39.5 billion. It was valued at \$31 billion in 2018.

Cloud Trends 2019

Here are some of the key cloud trends to watch out for in 2019:

AWS leads the IaaS Public

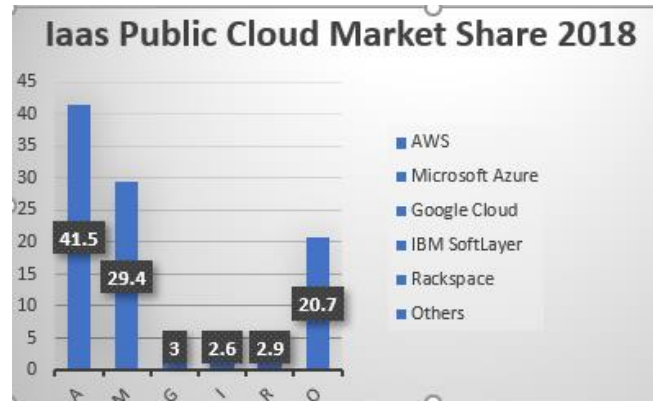
Cloud Market



AWS has been a clear leader in the cloud services segment.

According to a [Cyber Security Alliance](#) report, AWS has been

the most popular Infrastructure public cloud service provider. In Q2 2018, it earned a revenue of \$6.1 billion. However, IT giants Google and Microsoft have made a significant progress in 2018. They were able to improve their market share wherein Microsoft showed a growth of 89% in Q4, 2018



compared to Q2, 2017 earnings. [Gartner](#) has chosen AWS as the leader in IaaS public cloud segment. Percentage wise, AWS stands tall with 41.5% taking into consideration the installation base. It is followed by Microsoft Azure and Google Cloud Platform with 29.4% and 3.0% respectively. AWS is popular owing to its feature-rich tools, secure processing, diverse market place, cost-effective solutions and vibrant community. 2019 is not going to be anything different. So, businesses moving to the cloud should first look at AWS.

Multi-Cloud systems are rising up

As newer technologies such as IoT, AI, ML are implemented into cloud networks, the very



architecture of cloud deployment is changing. A Multi-cloud architecture is the need of the hour. It is not to be confused with hybrid clouds. While hybrid cloud is a combination of public and private clouds, multi-clouds simple mean more than one



cloud computing services. For instance, a large enterprise might use AWS as well as Azure cloud platforms within the same organization. Multi-clouds offer several benefits for organizations as they can use the speed of one cloud service for mission critical tasks and enjoy the benefit of cost-effective pricing on another cloud service for other processes. This way they can optimise costs.

Another important advantage is the flexibility to choose data zones. With increasing data regulations, organisations are bound to store data in certain locations only. With multiple IaaS platforms at the disposal, businesses can choose the right one with the nearest availability zone. However, managing a multi-cloud environment can be challenging.

Containerisation continues to evolve



docker

The year 2018 has seen a great rise in containerisation systems.

Containers allow you to move your

software applications from one computing environment to other without any compatible issues as they contain the entire runtime environment. They make virtualisation simple and easy while reducing overhead. Docker came into light in 2013 and still leads this market.

As multi-cloud and hybrid cloud



environments increase, IT management becomes extremely complex. With containerization, you can simplify IT management. According to Allied Market Research, the global container application market earned a revenue of \$698 million in 2016.

This value is expected to touch \$8202 million growing at a CAGR of 31.8% between 2018 and 2025.

Kubernetes made quick inroads in 2018 and it is expected to capture significant market share in 2019. Looking at these changes, major IT companies are heavily investing in container hardware.

Service Mesh is a new trend

With the increasing implementation of containerization systems, there arises a need for businesses to manage communications between different microservices. Service Mesh is a new network topology layer that makes this job easy. Using a service mesh infrastructure layer, you can easily manage network-based inter-processes communications. It automatically detects, authenticates, monitors and efficiently manages communications across all environments of an organization. An example of Service Mesh is Istio, a combined project of IBM, Google and Lyft.



IoT is evolving

The Internet of Things (IoT) has actually revolutionised the entire cloud networking system. With the cloud system, IoT devices can be easily managed from anywhere and using any device. IoT systems continue to evolve in 2019. The new trend is that AI and IoT will converge at the edge computing layer. In addition, new and varied devices are being added to the networks. So, businesses need to keep a close eye on these changes and realign their cloud strategies accordingly.

Making way for AI and ML

Artificial Intelligence and Machine Learning are increasing being implemented in recent times. However, AI requires higher computing power with specialized processors as it processes highly complex mathematical computations. The new trend in 2019 is AI-enabled chips. Chip processing companies such as AMD, Qualcomm, ARM and NVIDIA are shipping AI-enabled chips that facilitate faster processing of AI-enabled apps.

Conclusion

Cloud is an umbrella term. There are several hundred technologies under it. More and more technologies are being added to it every day and each technology again brings hundreds of solutions and products. Identifying the right cloud

technology for your business and fully leveraging it is the key to successfully operating your business in the cloud.

Over the past 18 months, the demand from clients has far outstripped demand which has led to a surge in Contract and Interim recruitment. However, once their Cloud environments have been established, permanent resources need to be back-filled as soon as possible or organisations will feel the cost quickly.

Brightred is here to help. Backed by a rich pool of cloud-ready IT professionals, Brightred offers specialized recruitment services exclusively for the cloud.



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