



# Cloud 101: From Cloud Novice to Cloud Awesome

A guide to understanding (and explaining) the cloud

Before embarking on the journey of becoming a **Cloud Awesomeness** provider, you may need a refresher on the basics of the cloud. This will in turn help you better explain your products to your customers.

## What is “the cloud”?

The cloud refers to information, software, and services that are stored on a network of servers. Cloud computing and cloud services refer to accessing those data or services remotely.

In real-world terms, this describes businesses or individuals using computer programs, files, and services that are housed on a network that multiple users can access at the same time and are sometimes run by a third party. In a sense, the cloud allows users to share computing resources and save on the costs of implementing computing infrastructure, running servers and keeping them cool, and storing data, among other aspects that can run up the bill when it comes to computing.

## A bit of history

The concept of cloud computing actually started in the 1950s with mainframe computers, which multiple users in an organization would access through separate “dumb” terminals whose sole purpose was to access the mainframe. Computers were so massive and expensive at the time that this was the only way to feasibly make computing work at an organization in which multiple people would need to use the computer.

In the 1960s, the concept of time sharing was developed at MIT. Users could access a computer’s processing power concurrently while the computer’s system would switch between the accessed programs for slices of time small enough to allow workers to use the machine simultaneously. By the 1970s, large players such as IBM made computer virtualization possible. This entailed creating virtual machines, or entire simulated operating systems that run on a host operating system. They are programs or operating systems that act and look like a separate computer.

Virtual machines waned as the 1980s brought about the rise of personal computers. In the 1990s, telecommunication companies moved from offering only point-to-point data connections to virtualized private network (VPN) connections, allowing them to allocate network bandwidth as needed while lowering costs.

As internet services became faster and more prevalent throughout the 2000s, cloud computing as we now know it arose. Amazon launched its Amazon Web Services (AWS) in 2006, Google its Google App Engine in 2008, and Microsoft its Microsoft Azure in 2010.

## What kinds of cloud are there?

There are three main types of cloud:



### Public

Any network that offers services to the general public over the internet can be thought of as a public cloud. In the sales environment, it refers to providing cloud services through a network that is shared by multiple customers. This cuts down on costs for end users, as they would not have to purchase and implement their own infrastructure.



### Private

In a private cloud, the company or individual is the sole user of that network. This would mean the cloud provider allocates to the customer its own individual infrastructure and resources. Private cloud offerings are typically highly secure and customizable, and they may be hosted off-site or housed on-premises.



### Hybrid

A hybrid cloud combines aspects of public and private clouds and links them together. For instance, a company could use its own infrastructure to keep sensitive data in-house and use a third-party public cloud for basic tasks or when their computing demand is higher.

## The anything as a service (XaaS) model

In general, cloud computing falls into three categories: software as a service (SaaS), platform as a service (PaaS), and infrastructure as a service (IaaS). Together, all of these make up the concept of anything as a service, or XaaS, in which different elements of computing are handled by a third party.

## SaaS – software as a service

SaaS refers to any software applications and their accompanying data that are hosted remotely. So, rather than installing a program right onto a computer, the program runs on a remote network, and individual users access the program over the internet.

Instead of buying the software and licenses, SaaS customers subscribe to the service and pay as they go, generally on a monthly basis. Examples of SaaS programs include Microsoft Office 365, Google G-Suite, and Cisco WebEx.

### Quick Stats

- **73%** of enterprises and small to medium-sized businesses (SMBs) have at least one application or part of their infrastructure in the cloud.
- Enterprises predicted an average cloud spend of **\$3.5 million** for 2018.
- **30%** of all IT budgets are allocated to cloud.
- SaaS makes up nearly half of IT spending (**48%**), with IaaS at 30% and PaaS at 21%.<sup>2</sup>

One sub-classification of SaaS is security as a service, or SECaaS, in which security software is delivered on the cloud. Examples of what SECaaS can provide include disaster recovery (or DRaaS), business continuity, data loss prevention, email security, encryption, identity and access management, intrusion management, network security, security assessment, security information and event management, vulnerability scanning, and web security, according to the Cloud Security Alliance.<sup>1</sup> Examples of SECaaS vendors include Symantec, Alert Logic, ESET, Proofpoint, and Trend Micro.

## PaaS – platform as a service

The PaaS model of cloud computing refers to a third party providing the environment for users to develop, deploy, and manage applications. Many app developers utilize PaaS so they don't have to worry about building the infrastructure to compute and store data, and can focus on developing and deploying software, as well as collaboration. The third party houses the underlying hardware and software for the platform, rather than all the customer's IT infrastructure, and it charges the organization on a per-use basis. Examples of PaaS are Google App Engine and Salesforce.com.

## IaaS – infrastructure as a service

IaaS refers to a third party hosting much of the hardware necessary for computing, including servers, storage, and networking hardware, as well as the virtualization layer, or software installed at the host level that allows computing power to be flexible and scale up and down according to need. Examples of IaaS are Amazon Web Services and Microsoft Azure.

IaaS significantly drops the cost of computing for organizations because they don't have to invest in much of the expensive hardware that comes along with having many users on the same network. IaaS can also allow customers to more easily monitor access, network traffic, security, backup, replication, and recovery.

## Why cloud?

There are many benefits for businesses of all sizes to using cloud-computing services.

- **Cost savings:** First and foremost, it's generally cheaper for businesses to use pooled resources rather than invest in costly programs, platforms, servers, storage, IT employees, and other expenses related to computing. It's also easy to meter usage and fees with the cloud, and easier to budget for computing costs.
- **Scalability:** As companies grow and their need for more computing services grows, so, too, can their purchase of cloud offerings without having to make large investments.
- **Security:** Being cloud-enabled does not make an organization less secure; rather, it allows businesses to use the best security software attainable.
- **Accessibility:** The cloud enables remote workers to access files from anywhere they have an internet connection and unifies workers in different offices to work with the same programs and data.
- **Performance:** Utilizing more powerful technology than could be purchased outright helps organizations get up to speed, right away. And cloud-services providers can handle upgrading software and hardware, and performing maintenance, ensuring organizations stay digitally empowered at a fraction of the cost.
- **Usability:** Cloud user interfaces are designed with ease of use in mind, and cloud access is designed to be granted quickly to users no matter where they are.

- **Technical support:** With built-in tech support from cloud-services providers, users can rest easy knowing they won't have to solve time-consuming technical problems in-house.

### Industry Stats

- The healthcare cloud-computing market is expected to grow by more than \$26 billion globally by 2022. <sup>3</sup>
- The retail cloud market is expected to grow from \$11.06 billion in 2016 to \$28.53 billion by 2021. <sup>4</sup>
- The federal government estimates government-wide IT spending will grow to \$83.4 billion by 2019. <sup>5</sup>
- The finance cloud market is predicted to grow at a compound annual growth rate (CAGR) of 24.4% to \$29.47 billion by 2021. <sup>6</sup>
- The education market will see a compound annual growth rate of more than 26% globally from 2017–2021. <sup>7</sup>
- Lawyers upped their cloud usage by 40% from 2016 to 2017, and 52% of law firms reported using the cloud to some degree. <sup>8</sup>

### Who can sell cloud?

Whether you work for a telecommunications giant or independent retailer, selling cloud products and services to small, medium-sized, and enterprise businesses can be extremely lucrative. But learning your way around the cloud market can feel like swimming through alphabet soup. Here are a few examples of players in the cloud market:

- **VARs:** Value-added resellers (VARs) purchase software, hardware, and/or networking products from a distributor or vendor and sell them to end users. They may package the product together with a value-add, such as installation, consultation, training, or a specially designed application for particular hardware, and then sell it as a turnkey solution. They often tailor their offerings to specific industry.
- **CSPs:** Cloud services providers (CSPs) provide and manage cloud services, including SaaS, IaaS, and PaaS, to end users. Major CSPs include AWS, Google, and Microsoft.

- **MSPs:** Managed services providers (MSPs) manage a company's infrastructure and systems remotely. They charge the customer for their services on a variety of models, such as per-device, per-user, or all-inclusive, typically charging them on a monthly basis.
- **Telcos:** Telecommunications companies offer users telephone and internet access, and some now offer cloud services as well.
- **ISVs:** Independent software vendors (ISVs) make and sell a particular software product or products. They may sell software in a number of ways—through distributors, through agreements with VARs, or directly to customers, for instance—and may partner with companies that provide platforms, such as Microsoft, IBM, or Google.

## Cloud spells opportunity

Organizations use the cloud in a wide variety of ways, including:

- Backup and disaster recovery
- Customer relationship management (CRM)
- Database management
- E-commerce
- Email services
- File storage
- Product testing and development
- Remote file sharing, collaboration, and signatures
- Web hosting

It's predicted that in 2019, the public cloud marketplace will grow by 17.3%—to a total of \$206.2 billion.<sup>9</sup> With every industry increasing its cloud spend year after year, cloud computing has gone from a growing trend to the new normal, offering endless opportunity to sellers and users alike.

**Are you ready to begin your journey to Cloud Awesomeness? Or maybe you've dipped your toe in and now you're ready for the next stage in the cloud journey? Contact us for a free assessment by emailing [cloud@ingrammicro.com](mailto:cloud@ingrammicro.com).**

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### About Ingram Micro Cloud

At Ingram Micro Cloud™, we view cloud not just as a single technology, but as a foundational platform to run and drive a whole new way of doing business. We help resellers and partners get up and running with cloud quickly, enabling them to transform their business. We help our clients monetize and manage the entire lifecycle of cloud services, infrastructure and IoT subscriptions, helping them simplify digital transformation with confidence, speed and agility. For more information, visit [IngramMicroCloud.com](http://IngramMicroCloud.com).

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