

# What is Cloud Computing?

## Computing as a service over the internet

Cloud computing, often referred to as simply “the cloud,” is the delivery of on-demand computing resources — everything from applications to data centers — over the internet on a pay-for-use basis.

- Elastic resources — Scale up or down quickly and easily to meet demand
- Metered service so you only pay for what you use
- Self service — All the IT resources you need with self-service access

## Software as a service (SaaS)

Cloud-based applications — or software as a service — run on distant computers “in the cloud” that are owned and operated by others and that connect to users’ computers via the internet and, usually, a web browser.

### The benefits of SaaS:

- You can sign up and rapidly start using innovative business apps
- Apps and data are accessible from any connected computer
- No data is lost if your computer breaks, as data is in the cloud
- The service is able to dynamically scale to usage needs



## Platform as a service (PaaS)

Platform as a service provides a cloud-based environment with everything required to support the complete lifecycle of building and delivering web-based (cloud) applications — without the cost and complexity of buying and managing the underlying hardware, software, provisioning, and hosting.

### The benefits of PaaS:

- Develop applications and get to market faster
- Deploy new web applications to the cloud in minutes
- Reduce complexity with middleware as a service



## Infrastructure as a service (IaaS)

Infrastructure as a service provides companies with computing resources including servers, networking, storage, and data center space on a pay-per-use basis.

### The benefits of IaaS:

- You can sign up and rapidly start using innovative business apps
- Apps and data are accessible from any connected computer
- No data is lost if your computer breaks, as data is in the cloud
- The service is able to dynamically scale to usage needs



## Public cloud

Public clouds are owned and operated by companies that offer rapid access over a public network to affordable computing resources. With public cloud services, users don’t need to purchase hardware, software, or supporting infrastructure, which is owned and managed by providers.

### Key aspects of public cloud:

- Innovative SaaS business apps for applications ranging from customer resource management (CRM) to transaction management and data analytics
- Flexible, scalable IaaS for storage and compute services on a moment’s notice
- Powerful PaaS for cloud-based application development and deployment environments



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A private cloud is infrastructure operated solely for a single organization, whether managed internally or by a third party, and hosted either internally or externally. Private clouds can take advantage of cloud's efficiencies, while providing more control of resources and steering clear of multi-tenancy.

### Key aspects of private cloud:

- A self-service interface controls services, allowing IT staff to quickly provision, allocate, and deliver on-demand IT resources
- Highly automated management of resource pools for everything from compute capability to storage, analytics, and middleware
- Sophisticated security and governance designed for a company's specific requirements



## Hybrid cloud

A hybrid cloud uses a private cloud foundation combined with the strategic integration and use of public cloud services. The reality is a private cloud can't exist in isolation from the rest of a company's IT resources and the public cloud. Most companies with private clouds will evolve to manage workloads across data centers, private clouds, and public clouds - thereby creating hybrid clouds.

### Key aspects of hybrid cloud:

- Allows companies to keep the critical applications and sensitive data in a traditional data center environment or private cloud
- Enables taking advantage of public cloud resources like SaaS, for the latest applications, and IaaS, for elastic virtual resources
- Facilitates portability of data, apps and services and more choices for deployment models

