

IaaS

[Infrastructure as a service \(IaaS\)](#) is a cloud computing offering in which a vendor provides users access to computing resources such as servers, storage and networking. Organizations use their own platforms and applications within a service provider's infrastructure.

Key features

Instead of purchasing hardware outright, [users pay for IaaS on demand](#).

Infrastructure is scalable depending on processing and storage needs.

Saves enterprises the costs of buying and maintaining their own hardware.

Because data is on the cloud, there can be no single point of failure.

Enables the virtualization of administrative tasks, freeing up time for other work.

PaaS

[Platform as a service \(PaaS\)](#) is a cloud computing offering that provides users with a cloud environment in which they can develop, manage and deliver applications. In addition to storage and other computing resources, users are able to use a suite of prebuilt tools to develop, customize and test their own applications.

Key features

PaaS provides a platform with tools to test, develop and host applications in the same environment.

Enables organizations to focus on development without having to worry about underlying infrastructure.

Providers manage security, operating systems, server software and backups.

Facilitates collaborative work even if teams work remotely.

SaaS

Software as a service (SaaS) is a cloud computing offering that provides users with access to a vendor's cloud-based software. Users do not install applications on their local devices. Instead, the applications reside on a remote cloud network accessed through the web or an API. Through the application, users can store and analyze data and collaborate on projects.

Key features

SaaS vendors provide users with software and applications via a subscription model.

Users do not have to manage, install or upgrade software; SaaS providers manage this.

Data is secure in the cloud; equipment failure does not result in loss of data.

Use of resources can be scaled depending on service needs.

Applications are accessible from almost any internet-connected device, from virtually anywhere in the world.

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An IBM perspective: IaaS vs. PaaS vs. SaaS



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In the traditional method of consuming services or resources, the owner of the infrastructure is responsible for managing every piece of hardware and software he or she uses. Normally, it takes some time for a user to access a new resource, but it can be configured exactly as needed.

Traditional infrastructure is often related to legacy core applications (tied to older technologies perhaps) that cannot be easily migrated to cloud paradigms. Elasticity, standardization and other clear cloud advantages are not sufficient reasons to migrate. In other cases, rigid security and country regulations sometimes force users to have data located nearby and/or under total management control.

Infrastructure as a service (IaaS)

The management responsibility for the company starts with the operating system layer and the provider ensures the availability and reliability of the infrastructure provided.

Several use cases can benefit from this pattern. Companies that lack an owned data center look to IaaS as a quick, cheap infrastructure for their business initiatives that can be expanded or terminated as needed. Traditional companies that need compute power to run variable workloads with less capital expenditure are perfect examples of IaaS adoption. In both cases, companies will only pay for the services they use.

Platform as a service (PaaS)

Development companies and/or factories that want to implement agile methodologies are the most suited for PaaS. PaaS providers publish many services that can be consumed inside applications. Those services will be always available and up-to-date. PaaS provides a very simple way to test and prototype new applications. It can save money when developing new services and applications. Applications can be released more quickly than usual to get user feedback.

[The API economy](#) is the new paradigm in development, and the cloud provides the perfect platform for its implementation.

Software as a service (SaaS)

Today, SaaS patterns are generally accepted by many companies that want to benefit from application usage without the need to maintain and update infrastructure and components. Mail, ERP, collaboration and office apps are the most accepted SaaS solutions. The flexibility and elasticity of the SaaS model are great benefits.

There is no “one-size-fits-all” solution for cloud adoption. Companies should consider their own cost and benefit equation and then decide on the best model. Each application and process

needed is a workload, and a deep workload assessment is normally performed by companies that have decided to move to the cloud.