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Cloud Service Models

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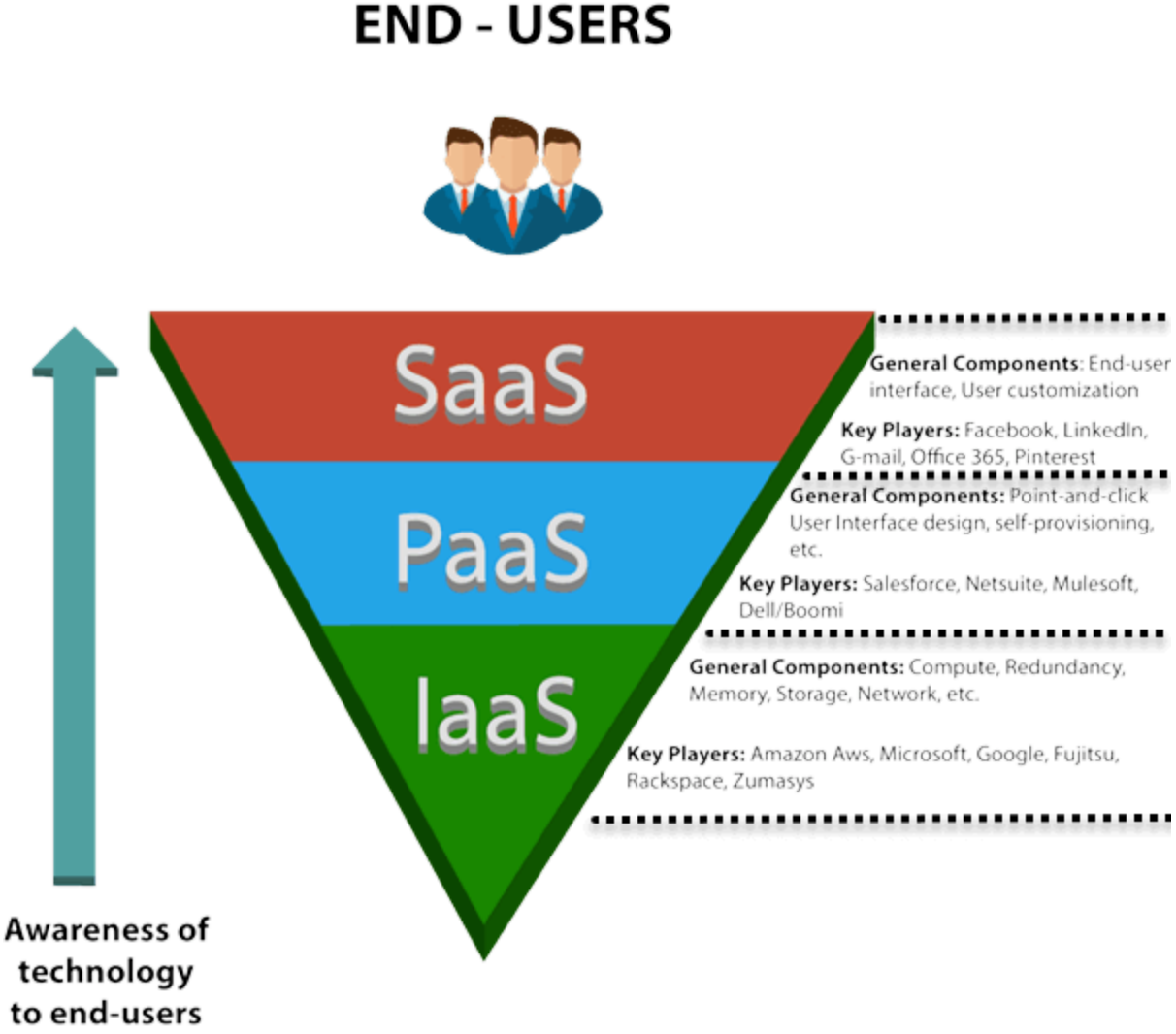
What are the Cloud Service Models?

SaaS, PaaS, and IaaS are the three main cloud computing service model categories. You can access all three via an Internet browser or online apps available on different devices. The cloud service model enables the team to collaborate online instead of offline creation and then share online.



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Software as a Service (SaaS) is a web-based deployment model that makes the software accessible through a web browser. SaaS software users don't need to care where the software is hosted, which operating system it uses, or even which programming language it is written in. The SaaS software is accessible from any device with an internet connection.

This cloud service model ensures that consumers always use the most current version of the software. The SaaS provider handles maintenance and support. In the SaaS model, users don't control the infrastructure, such as storage, processing power, etc.

Example of SaaS Services

Characteristics of SaaS

There are the following characteristics of SaaS:

- It is managed from a central location.
- Hosted directly on a remote server.
- It is accessible over the Internet.
- SaaS users are not responsible for hardware and software updates.
- The services are purchased on a pay-as-per-use basis.

Advantages SaaS

Here are the important advantages/pros of SaaS:

- The biggest benefit of using SaaS is that it is easy to set up, so you can start using it instantly.
- Compared with on-premises software, it is more cost-effective.
- You don't need to manage or upgrade the software, as it is typically included in a SaaS subscription or purchase.
- It won't use your local resources, such as the hard disk typically required to install desktop software.
- It is a cloud computing service category that provides a wide range of hosted capabilities and services.
- Developers can easily build and deploy web-based software applications.
- You can easily access it through a browser.

Disadvantages SaaS

Here are the important cons/drawbacks of SaaS:

- Integrations are up to the provider, so it's impossible to "patch" an integration on your end.
- SaaS tools may become incompatible with other tools and hardware already used in your business.
- You depend on the SaaS company's security measures, so your data may be compromised if any leaks occur.

Things to Consider Before SaaS Implementation

Here are essential things you need to consider before SaaS implementation:

- It would help if you opted for **configuration over customization** within a SaaS-based delivery model.
- You must carefully understand the usage rates and set clear objectives to achieve the SaaS adoption.
- You can complement your SaaS solution with integrations and security options to make it more user-oriented.

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Platform as a Service (PaaS)

Platform-as-a-Service (PaaS) provides a cloud computing framework for software application creation and deployment. It is a platform for the deployment and management of software apps. This flexible cloud computing model scales up automatically on demand. It also manages the servers, storage, and networking, while the developers manage only the application part. It offers a runtime environment for application development and deployment tools.

This Model provides all the facilities required to support the complex life cycle of building and delivering web applications and services entirely for the Internet. This cloud computing model enables developers to rapidly develop, run, and manage their apps without building and maintaining the infrastructure or platform.

Characteristics of PaaS

There are the following characteristics of PaaS:

- Builds on virtualization technology, so computing resources can easily be scaled up (Auto-scale) or down according to the organization's needs.
- Support multiple programming languages and frameworks.
- Integrates with web services and databases.

Advantages PaaS

Here are the important benefits/pros of PaaS:

- Simple, cost-effective development and deployment of apps
- Developers can customize SaaS apps without the headache of maintaining the software
- Provide automation of Business Policy
- Easy migration to the Hybrid Model
- It allows developers to build applications without the overhead of the underlying operating system or cloud infrastructure
- Offers freedom to developers to focus on the application's design while the platform takes care of the language and the database
- It helps developers to collaborate with other developers on a single app

Disadvantages of SaaS

Here are the important cons/drawbacks of PaaS:

- You have control over the app's code and not its infrastructure.
- The PaaS organization stores your data, so it sometimes poses a security risk to your app's users.
- Vendors provide varying service levels, so selecting the right services is essential.
- The risk of lock-in with a vendor may affect the ecosystem you need for your development environment.

Things to Consider Before PaaS Implementation

Here are essential things you need to consider before PaaS implementation:

- Analyze your business needs, decide the automation levels, and also decides whether you want a self-service or fully automated PaaS model.

- You need to determine whether to deploy on a private or public cloud.
- Plan through the customization and efficiency levels.

Infrastructure as a Service (IaaS)

Infrastructure-as-a-Service (IaaS) is a cloud computing service offering on-demand computing, storage, and networking resources. It usually works on a pay-as-you-go basis.

Organizations can purchase resources on-demand and as needed instead of buying the hardware outright.

The IaaS cloud vendor hosts the infrastructure components, including the on-premises data center, servers, storage, networking hardware, and the hypervisor (virtualization layer).

This Model contains the basic building blocks for your web application. It provides complete control over the hardware that runs your application (storage, servers, VMs, networks & operating systems). IaaS model gives you the best flexibility and management control over your IT resources.

Characteristics of IaaS

There are the following characteristics of IaaS:

- Resources are available as a service
- Services are highly scalable
- Dynamic and flexible Cloud Service Model
- GUI and API-based access
- Automate the administrative tasks

Advantages of IaaS

Here are the important benefits/pros of PaaS:

- Easy to automate the deployment of storage, networking, and servers.
- Hardware purchases can be based on consumption.
- Clients keep complete control of their underlying infrastructure.
- The provider can deploy the resources to a customer's environment anytime.
- It can be scaled up or downsized according to your needs.

Disadvantages of IaaS

Here are the important Cons/drawbacks of IaaS:

- You should ensure that your apps and operating systems are working correctly and providing the utmost security.
- You're in charge of the data, so if any of it is lost, it's up to you to recover it.
- IaaS firms only provide the servers and API, so you must configure everything else.

Things to Consider Before IaaS Implementation

Here are some specific considerations you should remember before IaaS Implementation:

- You should clearly define your access needs and your network's bandwidth to facilitate smooth implementation and functioning.
- Plan out detailed data storage and security strategy to streamline the business process.
- Ensure that your organization has a proper disaster recovery plan to keep your data safe and accessible.

Other important As a Services

- **MaaS–**MaaS stands for monitoring as a service. It allows the consumer to monitor the status of their critical applications regardless of location.
- **CaaS** – Communication as a service use Enterprise level VPNs, VoIP, PBX, and Unified Communications between the costly investment of hosting, purchasing, and managing the IT infrastructure. It also enables you to reduce CAPEX and OPEX.
- **DaaS** – Desktop as a service ensures a reliable, consistent experience for the remote use of programs, applications, and files anywhere, anytime.
- **DRaaS** – Disaster Recovery as a service is a cloud computing model that provides safeguards from natural (or artificial) catastrophes.

How You can select the Best SaaS Service Provider

Here are some essential criteria for selecting the best cloud service provider:

- **Financial stability:** Look for a well-financed cloud provider that has steady profits from the infrastructure. If the company shuts down because of monetary issues, your solutions will also be in jeopardy.
- **Industries that prefer the solution:** Before finalizing cloud services, examine its existing clients and markets. Your cloud service provider should be popular among companies in your niche or neighboring ones.
- **Datacenter locations:** To avoid safety risks, ensure that cloud providers enable your data's geographical distribution.

- **Encryption standards**: You should make sure the cloud provider supports major encryption algorithms.
- **Check accreditation and auditing**: The widely used online auditing standard is SSAE. This procedure helps you to verify the safety of online data storage. ISO 27001 certificate verifies that a cloud provider complies with international safety standards for data storage.
- **Backup**: The provider should support incremental backups so that you can store offsite and quickly restore.

Summary

- SaaS, PaaS, and IaaS are the three main cloud computing service model categories.
- Software as a Service (SaaS) is a web-based deployment model that makes the software accessible through a web browser.
- Platform-as-a-Service (PaaS) provides a cloud computing framework for software application creation and deployment.
- Infrastructure-as-a-Service (IaaS) is a cloud computing service offering on-demand computing, storage, and networking resources.
- MaaS, CaaS, DaaS, and DRaaS are other important cloud service models.
- While selecting the cloud service model, look for a well-financed cloud provider with steady profits from the infrastructure.

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