Clouds, such as Azure from Microsoft, offer more than just computes to rent. The main type of cloud offerings include:

* Infrastructure as a service (IaaS)
* Platform as a service (PaaS)
* Serverless
* Software as a service (SaaS)

Learn about these different types of offerings, and explain what they are and how they differ. Explain which offerings are relevant for IoT developers.

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| Exploring Platform as a Service Examples | Optimize your costs and productivity by migrating to the PaaS - CETIC -  Your connection to ICT research |

1. **Infrastructure as a service (IaaS)**

**Definition :**

Infrastructure as a service (IaaS) is a form of [cloud computing](https://www.techtarget.com/searchcloudcomputing/definition/cloud-computing) that provides virtualized computing resources over the internet. In the IaaS model, the cloud provider manages IT infrastructures, such as storage, server and networking resources, and delivers them to subscriber organizations via virtual machines ([VMs](https://www.techtarget.com/searchitoperations/definition/virtual-machine-VM)) accessible through an internet connection. IaaS has many benefits for organizations, such as making workloads faster, easier, more flexible and more cost efficient.

**Benefits :** Infrastructure as a Service (IaaS) offers various advantages for associations looking to leverage cloud computing to meet their IT infrastructure needs. Some of the key advantages of IaaS include:

+ Flexibility

+ Scalability

+cost efficiency

+ rapid provisioning

+ geological reach

+ reliability and resilience

+ security

**Usage :** Many industries and scenarios benefit from IaaS. Some examples include:

+ Developmeny and testing environments

+ web hosting and website infrastructure

+ Big data and analytics

+ High-performance computing (HPC)

**Sources :**

[**https://www.coursera.org/articles/iaas?utm\_medium=sem&utm\_source=gg&utm\_campaign=b2c\_apac\_x\_coursera\_ftcof\_career-academy\_cx\_dr\_bau\_gg\_pmax\_gc\_s2\_all\_m\_hyb\_24-08\_x&campaignid=21573875733&adgroupid=&device=c&keyword=&matchtype=&network=x&devicemodel=&creativeid=&assetgroupid=6544910561&targetid=&extensionid=&placement=&gad\_source=1&gbraid=0AAAAADdKX6bwqySNwTfvAYpNFKAhY1-p5&gclid=CjwKCAjwwqfABhBcEiwAZJjC3pSEiRFB-l0USgzyQNH82qTNKv7Wa0eli0cytcRieIbt1vB5PH\_AexoCJeIQAvD\_BwE**](https://www.coursera.org/articles/iaas?utm_medium=sem&utm_source=gg&utm_campaign=b2c_apac_x_coursera_ftcof_career-academy_cx_dr_bau_gg_pmax_gc_s2_all_m_hyb_24-08_x&campaignid=21573875733&adgroupid=&device=c&keyword=&matchtype=&network=x&devicemodel=&creativeid=&assetgroupid=6544910561&targetid=&extensionid=&placement=&gad_source=1&gbraid=0AAAAADdKX6bwqySNwTfvAYpNFKAhY1-p5&gclid=CjwKCAjwwqfABhBcEiwAZJjC3pSEiRFB-l0USgzyQNH82qTNKv7Wa0eli0cytcRieIbt1vB5PH_AexoCJeIQAvD_BwE)

[**https://www.geeksforgeeks.org/infrastructure-as-a-service-iaas/**](https://www.geeksforgeeks.org/infrastructure-as-a-service-iaas/)

1. **Platform as a service (PaaS)**

**Defination :** Platform as a service (PaaS) is a cloud computing model that provides developers with a platform to build, deploy, and manage applications without worrying about the underlying infrastructure. It allows developers to focus on writing code, while the cloud provider handles the infrastructure, maintenance, and scalability.

**Benefits :** Since PaaS includes everything needed for application development, including operating systems, runtime environments, databases, development tools, middleware, and hosting and scaling capabilities, it offers a wide range of advantages :

+ reduce coding time

+ increase capabilities

+ support for multiple platforms

+ access to advanced tools

+ support distributed teams

+ manage the full application lifecycle

**Usage :** Organizations typically use PaaS for the following scenarios : development framework, analytics or business intelligence , additional services

**Sources :**

[**https://azure.microsoft.com/en-us/resources/cloud-computing-dictionary/what-is-paas**](https://azure.microsoft.com/en-us/resources/cloud-computing-dictionary/what-is-paas)

[**https://www.openlegacy.com/blog/platform-as-a-service-examples**](https://www.openlegacy.com/blog/platform-as-a-service-examples)

1. **Serverless**

**Definition :**

Serverless is a [cloud-native](https://www.redhat.com/en/topics/cloud-native-apps) development model that allows developers to build and run applications without having to manage servers. The term “serverless” doesn’t mean there are no servers. It means the servers are abstracted away from application development. A [cloud provider](https://www.redhat.com/en/topics/cloud-computing/what-are-cloud-providers) handles the routine work of [provisioning](https://www.redhat.com/en/topics/automation/what-is-provisioning), maintaining, and scaling the server [infrastructure](https://www.redhat.com/en/topics/cloud-computing/what-is-it-infrastructure).

**Benefits :** Cost-effective computing cloud, simplified scalability , quicker turnaround .

**Usage :**

With serverless, developers package their code in [containers](https://www.redhat.com/en/topics/containers) for deployment. Once deployed, serverless apps respond to demand and [automatically](https://www.redhat.com/en/topics/automation) scale up or down as needed. Serverless offerings from [public cloud](https://www.redhat.com/en/topics/cloud-computing/what-is-public-cloud) providers are usually metered on demand using an [event-driven](https://www.redhat.com/en/topics/integration/what-is-event-driven-architecture) execution model. As a result, when a serverless function is sitting idle, it doesn’t cost anything.

**Sources :**

[**https://www.redhat.com/en/topics/cloud-native-apps/what-is-serverless**](https://www.redhat.com/en/topics/cloud-native-apps/what-is-serverless)

1. **Software as a service (SaaS)**

**Definition :**

Software as a Service (SaaS) is a business model in which customers pay to access and use cloud-hosted software over the Internet rather than purchasing it outright. This differs from traditional software that you need to purchase and install yourself. Instead, SaaS provides access to apps through monthly or annual subscriptions, with common features such as multi-user accounts and pricing tiers.

**Benefits :**

The SaaS (Software as a Service) model enhances business efficiency in several key ways, aligning with the modern need for flexibility, scalability, and cost-effectiveness. Here’s a refined reasoning:

+ Improved customization

+ lower costs

+ enhanced connectivity

+ advanced contact manageent

**Usage :**

 SaaS makes it easy for users to connect to powerful applications from any internet-enabled device and pay for the level of service they need.

**Sources :**

<https://www.salesforce.com/ap/saas/>