What is Infrastructure-as-a-Service? Everything You Need to Know

Infrastructure-as-a-service is a form of cloud computing that is distributed to end-users across the web. It may be useful for businesses and software developers who need a deployed IT infrastructure for their enterprise environments. Among all types of cloud services, IaaS generally provides the most control over its elements but requires more management and customization.

What is Infrastructure-as-a-Service?

Infrastructure-as-a-service (IAAS) is fundamentally a product that delivers an IT infrastructure over the Internet. The idea behind providing cloud computing as a service is to enable people to focus on other more important parts of their business venture. Building and maintaining certain aspects of infrastructure is tiresome work that frequently can be outsourced or, in the case of IaaS, purchased as a ready-to-go solution.

IaaS normally includes hardware, cloud storage, virtualization, network capacity, and the servers required to run the user's software. All these elements are managed by the service provider. When a company uses IaaS, it relies on the vendor to update and maintain these components, thus providing what essentially functions as a datacenter that the company doesn't need to host on their premises.

The Advantages of IaaS for Businesses

For some companies, building an on-premise structure is unavoidable. Others, however, may largely benefit from using IaaS in two primary ways.

IaaS Can Help Cut the Expenses

When a company opts for building the infrastructure on the premises, it needs to invest in servers and other hardware, as well as in the implementation of networks, cloud storage, and an environment with the required functionality. The company also needs to employ personnel who will learn the specifics of the system and tend to it. When the infrastructure is up and running, the company will be responsible for ensuring its smooth functioning and fixing problems when they arise.

Using IaaS can significantly reduce the costs because it grants users access to an already existing system rather than builds each new one from scratch. Also, IaaS reduces the number of employees required to manage the infrastructure since the majority of issues on the technical side are handled by the IaaS provider.

IaaS is More Easily Customized than an On-Premise System

Although IaaS relies heavily upon a third party, users can still easily change its features through an API or the service's dashboard. In case you need some features after purchasing and deploying IaaS, you can buy additional capacity or functionality without breaking the whole system down. You can also change the provider if you are not satisfied with your current one. The flexibility and the ability to rapidly add or modify components is rarely possible without significant financial investments when you own the hardware and other elements of the system.

Another defining aspect of IaaS is the 24/7 support. If an element of the system that you are not supposed to be controlling doesn't function properly, the provider of the service is in charge of resolving this problem.

The Difference Between IaaS and Other Popular Cloud Computing Models

IaaS vs. SaaS

IaaS is often regarded in the context of other similar cloud-based products. SaaS, which stands for software-as-a-service, is based on the same principles of accessibility and limited management as IaaS is. SaaS refers to more high-level applications that anyone can use without additional customization. Unlike IaaS, SaaS doesn't require a user to have any developer abilities or understanding of the application's structure. These pieces of software can be used through a web browser, which makes them a more convenient alternative to desktop apps that take up space, require installation, and are typically not accessible across different devices.

The primary advantage of IaaS over SaaS is flexibility. For some operations, the ease of use granted by a SaaS application is hindering rather than enhancing. Companies may need greater freedom over the system's settings, configuration, and usage. SaaS is also rarely suitable for enterprises that need to build a corporate system using their own software.

IaaS vs. PaaS

PaaS stands for platform-as-a-service. Unlike SaaS, it is not merely a ready-to-use solution but a platform that allows developers to build and deploy software with minimal hassle. PaaS is more focused on enabling people to create rather than use. Applications built with the use of PaaS are scalable and easily transferable to any platform. Developers can also build such software faster since they don't need to worry about virtualization, runtime management, middleware, and the OS.

PaaS is more likely than SaaS to turn out a viable alternative to IaaS. However, if a company's needs require the mentioned elements to be customizable or specifically tailored to suit their system, IaaS may be a better solution. More about the difference between IaaS and PaaS read here.

Wrapping Up

Infrastructure-as-a-service is a model of cloud computing in which a vendor provides the hardware, server space, cloud storage, networks, and virtualization required to implement and maintain the user’s software and environment. Businesses can use IaaS to reduce the costs and time required to build and maintain enterprise IT infrastructure.