



## IaaS vs PaaS vs SaaS: Comparing the Top 3 Cloud Models

Studies show that nearly 90% of companies are either currently using cloud technologies or planning to use them in the near future. Cloud computing offers countless benefits for companies, including reduced overhead, improved accessibility, flexible pricing, automatic updates and backups, professional support and more.

There are several different types of cloud models from which to choose, however, with the three most common being **IaaS**, **PaaS** and **SaaS**. So, what's the difference between these three models?

### Infrastructure-as-a-Service

Infrastructure-as-a-Service (IaaS) is a self-service cloud model in which a cloud provider sells virtualized hardware resources (computing infrastructure) for the customer to use for a specified length of time (hourly, weekly, monthly, annually, etc.). The cloud provider handles tasks such as server setup and maintenance, data storage, cybersecurity, network and virtualization, whereas the customer handles the operating system, applications, data, runtime and other processes.

Some business owners may turn their head at the thought of paying \$150 a month to rent a server using an IaaS model instead of just buying a server. With IaaS, however, the customer can choose specific computing services based on his or her needs. IaaS providers supply virtualized hardware resources from pools" of servers and equipment in local data centers, allowing customers to buy only what they need. Furthermore, customers don't have to worry about installing and maintaining their hardware, resulting in lower overhead costs.

IaaS can be used for a wide range of applications, some of which include the following:

- Website hosting
- Data storage
- Data backups and recovery
- Application execution
- Application testing
- Big Data processing

IaaS isn't right for everyone, however. In order to deploy software, customers must first install an operating system on the cloud, after which they can install their software. IaaS customers are also responsible for updating and maintaining both the operating system and any applications or software installed on the cloud. So, while IaaS is the most robust of the three main cloud service models, it's also most laborious.

## **Platform-as-a-Service**

Platform-as-a-Service (PaaS) goes one step further than IaaS by offering the same infrastructure services as well as operating systems and development tools.

With IaaS, it's the customer's responsibility to install and maintain the operating system, databases, applications, tools, etc. With PaaS, however, these tasks handled by the cloud vendor. The customer receives direct cloud access to development tools hosted by the vendor, allowing for rapid building, testing and deployment of applications.

PaaS is commonly used for the following:

- Creating and testing applications in a framework
- Application execution
- Application testing
- Database integration
- Network monitoring
- Data storage
- Data backups and recovery
- Big Data processing

Of course, there are also disadvantages to using PaaS. Some vendors, for instance, restrict PaaS customers to using a specific framework or offer a limited selection of development tools.

On the other hand, PaaS simplifies the otherwise complex nature of high-level programming and application development by offering a convenient framework in which to work. PaaS can also be a cost-effective alternative to buying software licenses. Instead of buying a full-use license, for instance, customers can buy a subscription to use the framework over the cloud for a fraction of the cost.

## **Software-as-a-Service**

The third primary cloud model is Software-as-a-Service (SaaS). In this model, customers pay to use a specific cloud software or app. The vendor handles all of the tasks performed in IaaS and

PaaS products, including server installation and maintenance, operating systems and development tools. Additionally, however, SaaS vendors provide hosted applications for the customer to use.

Microsoft 365, the online version of Microsoft's Office suite, is a common example of an SaaS product. Rather than paying a one-time fee, Office 365 customers buy a monthly subscription for \$9.99 or an annual subscription of \$99.99 to use the product.

Adobe has also jumped on board the SaaS bandwagon by offering cloud-based versions of its products. Known as Adobe Creative Cloud, customers can choose from one of several product bundles. The Photography bundle, for instance, includes Lightroom CC and Photoshop CC for \$9.99 per month or \$119.88 per year for individuals.

There are two main types of SaaS services:

1. Vertical SaaS: designed for use in a specific market or industry (e.g. finance, healthcare or real estate).
2. Horizontal SaaS: a specific category of cloud products (e.g. sales, CRM, productivity or app development).

Of those two types, Vertical SaaS is gaining momentum among enterprise companies thanks to its focus on specific markets and industries.

SaaS is commonly used for the following:

- Email service applications
- Work collaboration and document sharing
- Customer relationship management (CRM) systems
- Enterprise resource planning (ERP)
- Automation
- E-commerce solutions (website hosting, shopping carts, analytics, etc.)

Aside from the cost-savings benefits it offers, there are other reasons to choose SaaS products, including mobility. For instance, SaaS products are typically accessed over the Internet, meaning customers can use them directly from their web browser. There's no need to download or install the software to a specific computer. Just open your web browser and log in to the product's portal.

## **Other Cloud Models**

While IaaS, PaaS and SaaS are the three primary models used in cloud services, there are a few others as well. Network-as-a-Service (NaaS) is one such alternative cloud model in which a vendor sells networking connectivity services to customers. Examples of NaaS include virtual provider networks (VPNs), bandwidth on demand (Bod) and mobile network virtualization.

Security-as-a-Service (SECaaS) is another cloud model in which a vendor offers integrated cybersecurity services -- firewall installation, authentication, antivirus installation, intrusion detection, etc. -- on a subscription basis. Technically speaking, SECaaS is a form of SaaS, though the former is specifically used for cybersecurity services while the latter is not.

Hopefully, this article gives you a better understanding of the three main cloud models and how they work. To recap, IaaS is the most robust model, with vendors only handling basic tasks like server installation and management, security, networking and data storage. PaaS vendors perform all of these tasks while also offering a development framework. And SaaS is a complete solution in which a vendor offers a specific cloud-based software or application.

No matter what cloud strategy you pursue, **Winter Dog Consulting** can help you with a comprehensive cloud readiness assessment, design roadmap and deployment plan. Call us today to learn more.

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