

CLOUD DELIVERY MODELS: WHAT EVERY BUSINESS OWNER NEEDS TO KNOW ABOUT IAAS, PAAS, & SAAS

Cloud Delivery Models: What Every Business Owner Needs to Know About IaaS, PaaS, & SaaS

Introduction

Cloud computing is a fast-growing sector as most companies are moving beyond their on-premise IT infrastructures across the globe. There are three main cloud delivery models where cloud computing is offered - IaaS, PaaS, and SaaS. Cloud delivery models constitute a specific, pre-determined combination of IT resources put forward by a cloud provider. These cloud-based providers offer services such as storage, software, and processing within an affordable range. According to Report Linker, the global cloud computing market is estimated to surpass \$620 billion by 2023. This trend implies that more and more companies are relying completely or partially on cloud-based providers. These services are used in diverse IT sectors including application software, databases, operating systems, IP addresses, virtual local area networks, and web servers to name a few. In the following sections, this article is going to provide a detailed overview of all you need to know about the three main cloud delivery models.

IaaS (Infrastructure-as-a-Service)

The IaaS is the most basic form of cloud computing and offers to deliver computer hardware such as servers, networking technology, storage, and data center space, and other IT resources as a service via the internet. It provides virtualized and packaged IT resources where the cloud consumers enjoy full administrative control over the kind of environment they plan to construct. It offers high-level control over utilization and configuration of IT resources without actually having the pressure of maintaining on-premise software, infrastructure, data availability, load balancers, access management, and network security. The resources such as storage facilities, networks, processing power, and virtual private servers are charged under the pay-as-you-go model. The factors including the amount of storage used, the amount of processing power used throughout a certain time configures the billing. It is a cost-effective option where you only pay for the resources you use. In public IaaS infrastructure, the prime responsibility is on the service provider to manage and

support all infrastructure equipment. However, private and hybrid IaaS models provide divisions of varying degrees, depending on the contract between the service providers and the clients.

Benefits

- It allows easy implementation and accessibility
- It offers a low cost per employee
- It offers flexible growth
- It helps increase performance and security
- It offers on-demand scalability and disaster recovery

Drawbacks

- Lack of data security
- Potential vendor outages
- Missing redundancy
- Lack of control

According to Gartner, the IaaS market is projected to reach \$65 billion by 2021, despite the ravaging effects of the pandemic. IaaS is widely available and becoming a key play in competitive business behavior.

PaaS (Platform-as-a-Service)

The PaaS delivery model is halfway between infrastructure-as-a-Service (IaaS) and Software-as-a-Service (SaaS). It offers a predetermined cloud environment having already installed, deployed, and configured IT resources. This model offers a platform with built-in software components and tools for the programmers to develop, test, run, customize and manage their applications. The responsibility of managing servers, updating systems, maintaining security patches and backups is on the cloud providers. The consumers have administrative control over the cloud environment to develop applications, while the service providers manage the underlying infrastructures (virtual servers), IT resources (used databases) middleware, and OS maintenance. PaaS is remarkably popular due to its striking following features.

It allows the consumers to build and deliver applications without IDEs (Integrated Development Environments), which are notoriously expensive.

Benefits

- It provides the consumers the option to customize the features
- It allows the remote teams to collaborate smoothly
- It allows for easy scale up and down of resources
- It supports languages and features which make it usable across different business cultures
- It provides the integration of web services and databases
- It minimizes the amount of coding and the number of expenses needed for creating, testing, and launching applications
- It makes the process of migrating to a hybrid model effortless

Drawbacks

- The major drawback of using the PaaS delivery model is the issue of maintaining data security
- Another drawback is vendor lock-in, which makes migration from one PaaS model to the other problematic
- Further, the dependency over the service provider's speed, support, and reliability may not work well in unforeseen circumstances such as hacking, power outages, or unplanned maintenance issues

In essence, the PaaS delivery model provides a solution stack for both software development and runtime. Gartner reports that PaaS has the smallest market share among the three delivery models (IaaS, PaaS, and SaaS) and its expected revenue for 2021 and 2022 is around \$27 billion.

SaaS (Software-as-a-Service)

SaaS is the third major delivery model, also known as on-demand software in which the cloud service providers host the applications. In this model, the consumers do not have administrative control over cloud services or underlying IT resources.

Cloud providers are in charge of maintaining all the underlying IT resources and implementation details including hardware stability and app functioning. Consumers can only use the programs and applications to complete their tasks via the internet connection and web browser. The salient features of SaaS include management from a central location, hosting over a remote server, and accessibility over the internet. The billing process follows the pay-as-per-use criteria. Many factors, such as the number of users, amount of data stored, usage time, and the number of processed transactions affect cost. As part of the cost, the provider installs all software and hardware updates.

Benefits

- No hardware cost
- No initial setup cost
- Accessible from any location
- Easy customization
- Pay-as-you-go model for billing
- Cross-device compatibility
- Automated upgrades

Drawbacks

- Minimal or no control
- Lack of security
- Contractual obligations for different applications
- Difficult software integration
- Slower performance as compared to on-premise server applications
- Total dependence on service providers for IT resources and infrastructures

This model has the largest market share in cloud computing. Gartner predicted that the SaaS market is going to cross \$117 billion by 2021. The major service providers of the SaaS delivery model include BigCommerce, Google Apps, Salesforce, ZenDesk, DropBox, Slack, Cisco Web EX, Office365, Gmail, and GoToMeeting.

Conclusion

The Cloud computing industry is booming and evolving rapidly. It is opening new avenues for business development models in an age of increased connectivity and competitiveness. Even the lack of security and privacy being the major drawbacks of employing cloud delivery models have not deterred the companies from going to cloud-based solutions. The cloud providers typically combine different deployment models to establish one cloud delivery model. Three distinct cloud delivery models - IaaS, PaaS, and SaaS - are becoming famous in the current market. However, cloud providers leverage IT resources from other models to create a layered relationship between these models, which blurs the distinction among different delivery models.

Computerworld UK has reported that 80% of organizations are projected to shift towards cloud hosting, and collocation services by the year 2025. The fact that most companies have shifted their businesses to the cloud models is a testimony that business owners can expect a cloud-powered future ahead.

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