Cloud Service Models - Part 1

This lesson covers cloud service models offered by cloud providers.

We'll cover the following

Overview

There are typically four popular cloud service models in the industry that are offered by most of the cloud providers. These are:

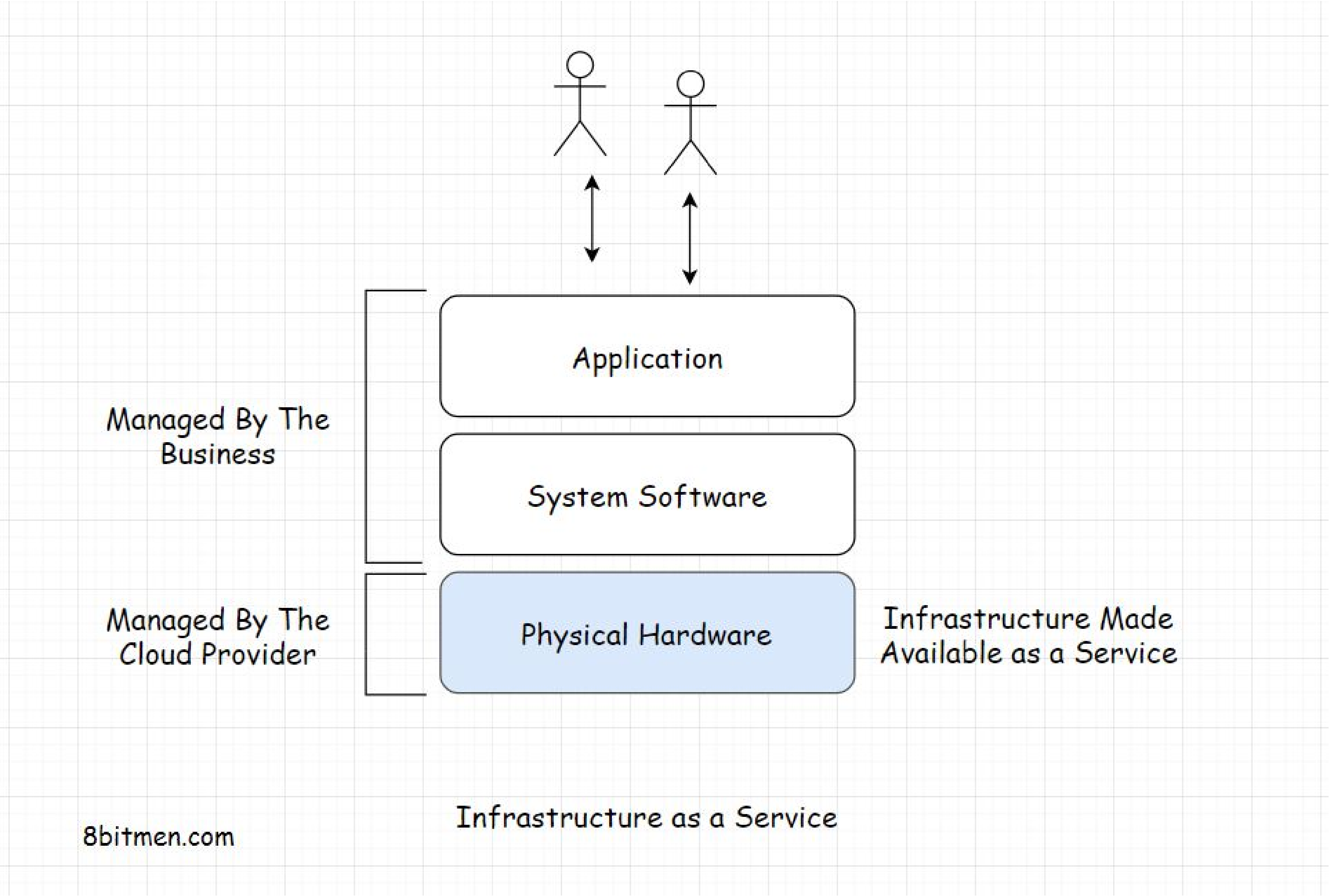
- *IaaS – Infrastructure as a Service*
- *PaaS – Platform as a Service*
- *SaaS – Software as a Service*
- *FaaS – Function as a Service*

Let’s one by one have an understanding of each of these service models.

Infrastructure as a Service (IaaS)

Infrastructure as a Service (IaaS) is a cloud service model that offers the highest level of control over the compute infrastructure of all the cloud service models. It enables us to pick the data centers’ servers, storage, networking, and location - housing the infrastructure, and so on. We don’t have to set up anything ourselves, all the hardware that we pick is managed by the cloud provider.

We can scale up and down according to demand and can pay as we go. Using an *IaaS*, means getting access to the entire data center infrastructure over the web. In an *IaaS* service model, a business typically manages the *OS* running on the server, the middleware, runtimes, and so on. The physical end of the infrastructure is managed by the provider.


Application
System Software
Physical Hardware
Managed By The Business
Managed By The Cloud Provider
Infrastructure Made Available as a Service
Infrastructure as a Service
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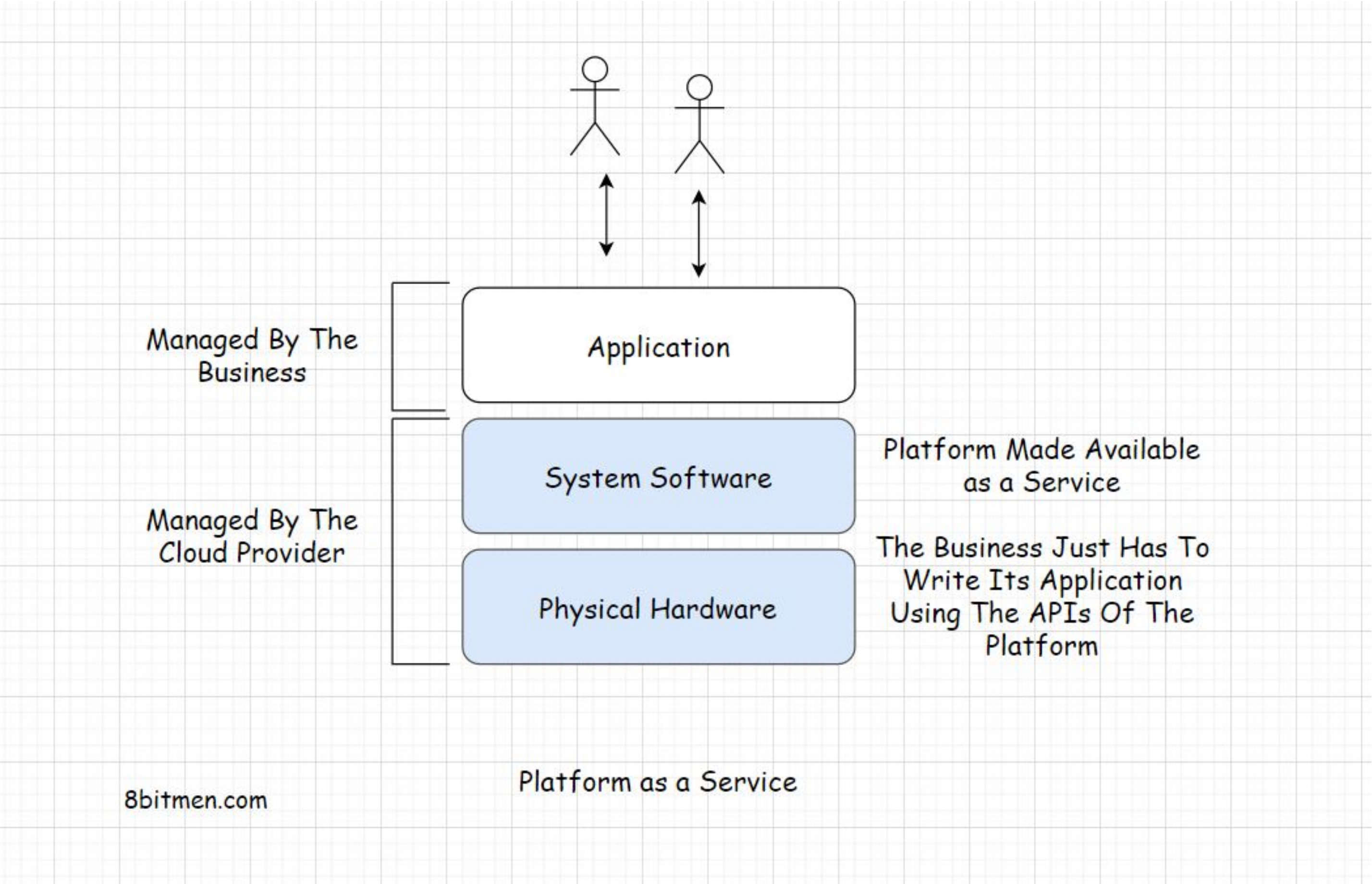
An *IaaS* service model is ideal for businesses that need control over the software that runs on their hardware. They don't have to set up anything on-premise, and they don't have to pay anything for the hardware upfront. They just have to access all the infrastructure over the web and setup and manage their software on it.

Typically, all the big cloud providers like *AWS, GCP, Azure, and DigitalOcean* offer the *IaaS* service model.

Platform as a Service (PaaS)

In a *Platform as a Service* model, we build and run our applications leveraging the platform provided by the cloud provider. The platform is a full suite of services required to develop and host an application. We get a cloud-based environment to build, test, and run our service. All we have to do is use the platform's APIs, write our code, and deploy our service.

In *PaaS*, we have no control over the infrastructure. We run our applications using the technology stack offered by the provider. The technology stack can contain both open source and proprietary products, which are managed by the provider.


Managed By The Business
Application
System Software
Platform Made Available as a Service
Managed By The Cloud Provider
Physical Hardware
The Business Just Has To Write Its Application Using The APIs Of The Platform
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Platform as a Service

Though a *PaaS* offering has a wide range of services, it supports multiple programming languages, frameworks, and so on. Still, we don't have much choice or flexibility picking our technology stack and integrating third-party tools of our choice. When writing our app using a PaaS, there is also an element of vendor lock-in. It's a trade-off between saving time and convenience and having control over the infrastructure.

The full suite of services of a *PaaS* cuts down the app development time by notches. We don't have to worry about *OS* upgrades, installing security patches, and so on. I would say application development using a PaaS is pretty convenient. *Google App Engine* is one example of a *PaaS*.

Based on recent industry research by Gartner, the PaaS cloud service model is becoming the most popular service model preferred by businesses today.

Let's continue this discussion in the next lesson.