Infrastructure as a Service

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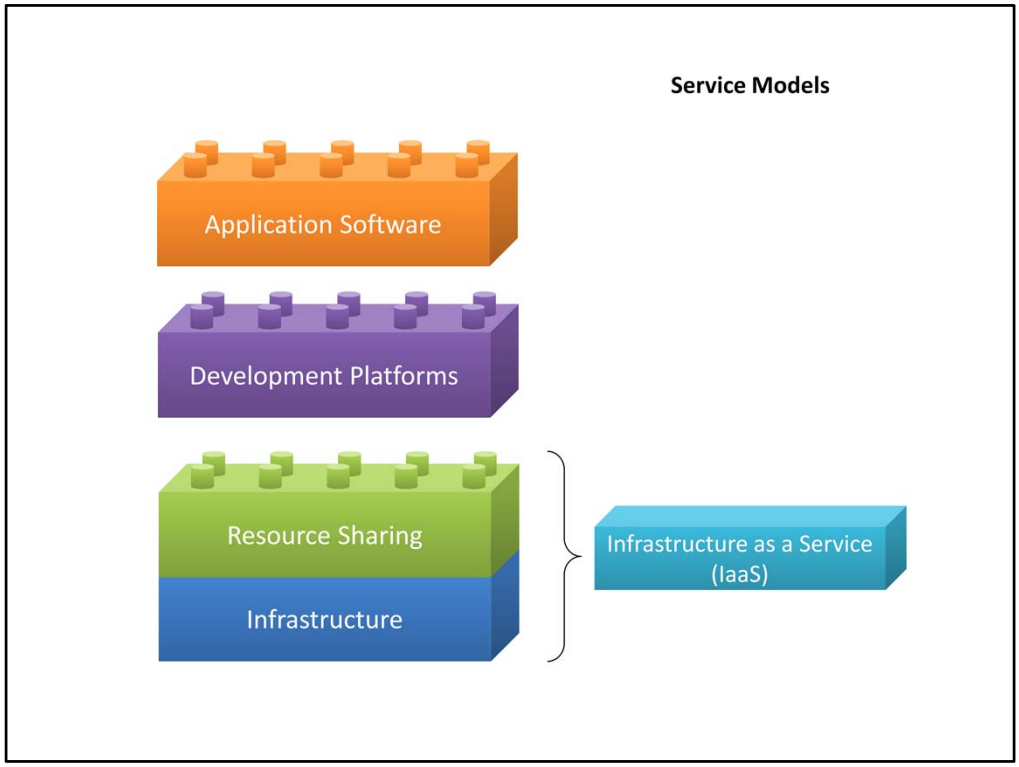
Let us look at Infrastructure-as-a-Service as one of the service models in cloud computing



IaaS is a service model deals with the resource sharing and infrastructure layers.

Infrastructure as a Service

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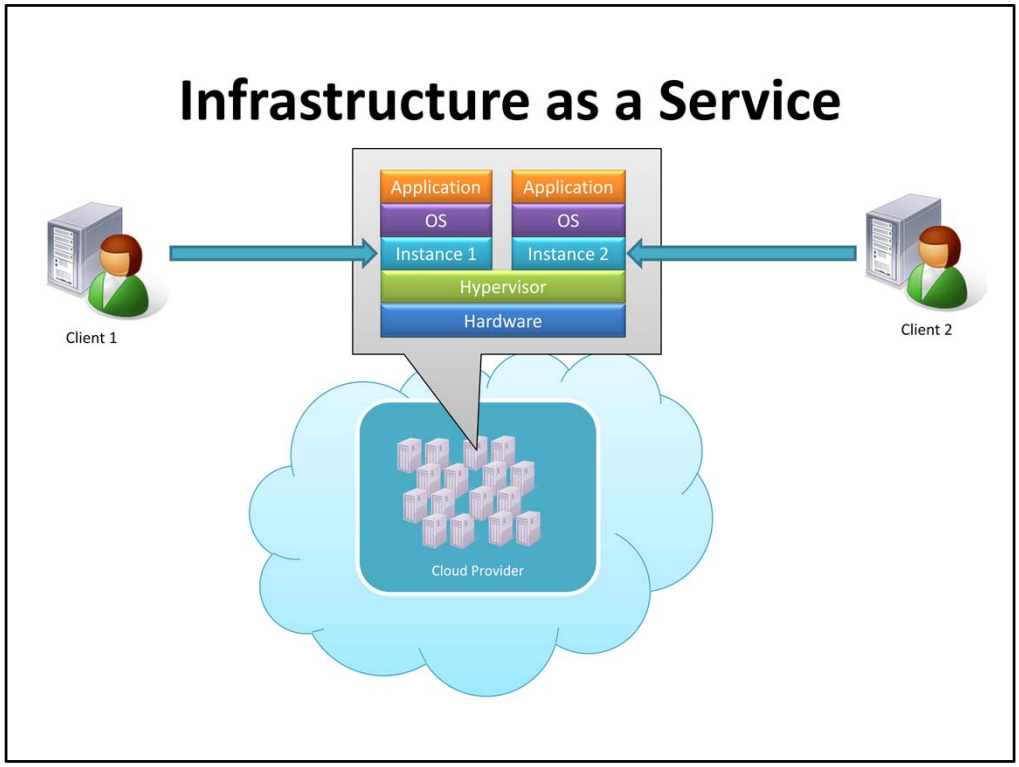
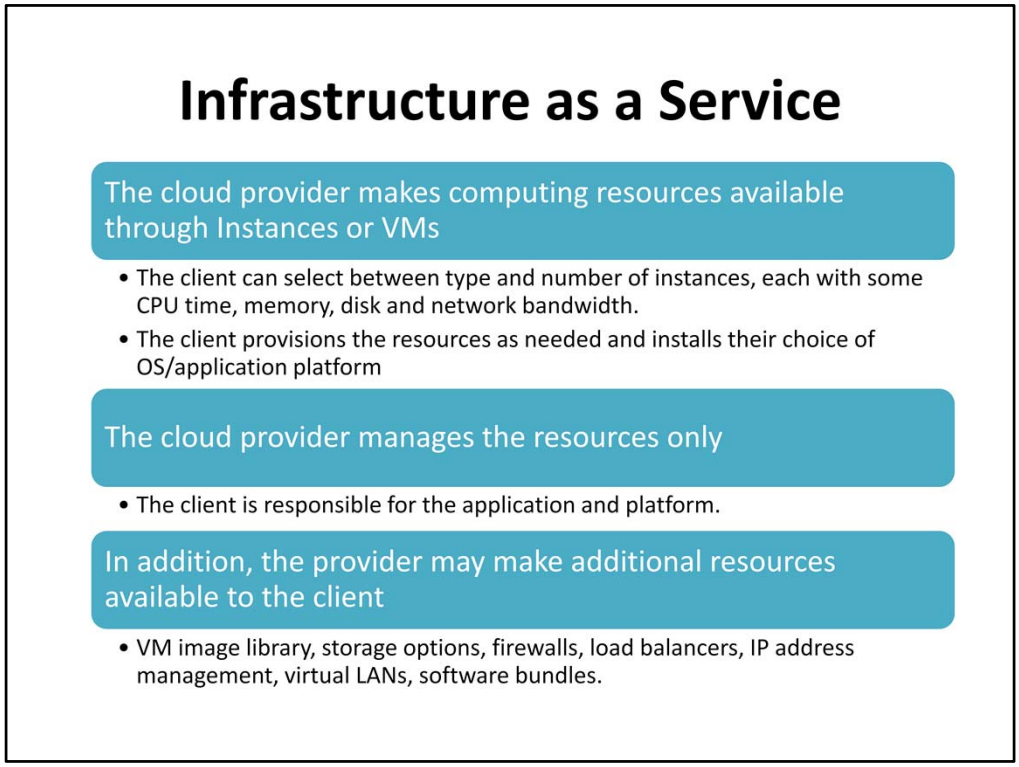
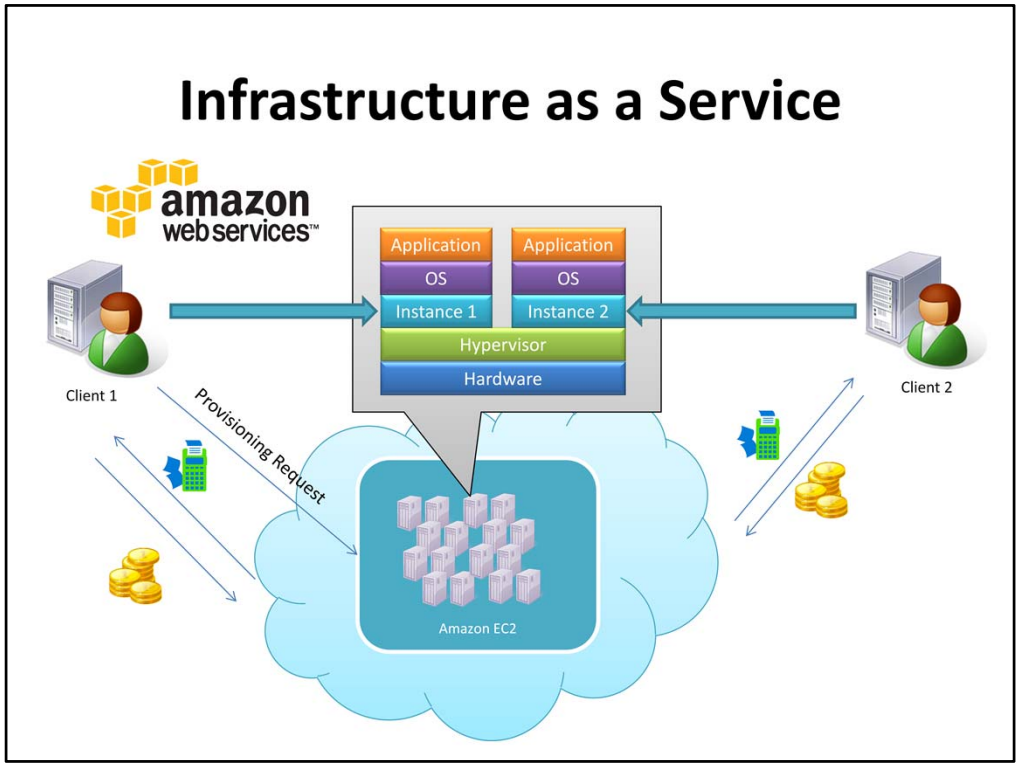


In Infrastructure-as-a-service, the cloud provider rents out computing resources to clients. Typically this is done by a piece of software call a hypervisor, which allows multiple instances of operating systems to run simultaneously on a single machine. The cloud provider provisions instances for the client and gives them control to choose their OS and install their own software. In this manner, multiple clients can share the same physical hardware and the sharing is controlled by the hypervisor.



Thus, in Infrastructure-as-a-Service, the cloud provider makes computing resources available through instances or VMs. The client usually has some choice over the type and number of instances required as well the operating system. Each virtual machine comes with associated CPU, memory, disk and network bandwidth. The client can then remotely log on to the instance and has full access to install software and copy data etc.

In this model, the cloud provider manages the resources and it's the clients responsibility to install and maintain the software and manage scale. However, cloud providers may make additional resources available such as VM image libraries, storage options, firewalls, etc.



Lets look at a simple example of an IaaS cloud provider. Amazon Web Services makes instances available for rent through Amazon EC2. A client can connect to Amazon EC2 and make a request for instances. Amazon will then prepare an instance based on the client's specification, and make it available for the client. The client will then proceed to install the applications that they need. Amazon does this for thousands of clients around the world. At the end of the month, amazon bills each customer for the amount of resources that they have rented out.