

How Cloud Deploys our Application Across the Globe?

– Part 3

This lesson further discusses deploying an app in multiple data centers.

We'll cover the following

- Region-specific deployments
- Cloud vs. traditional computing infrastructure
 - Traditional computing infrastructure
 - Cloud computing infrastructure

Region-specific deployments

Since we are no longer running in a single region and have region-specific changes in our service, we cannot deploy our service across all the regions with one single deployment flow.

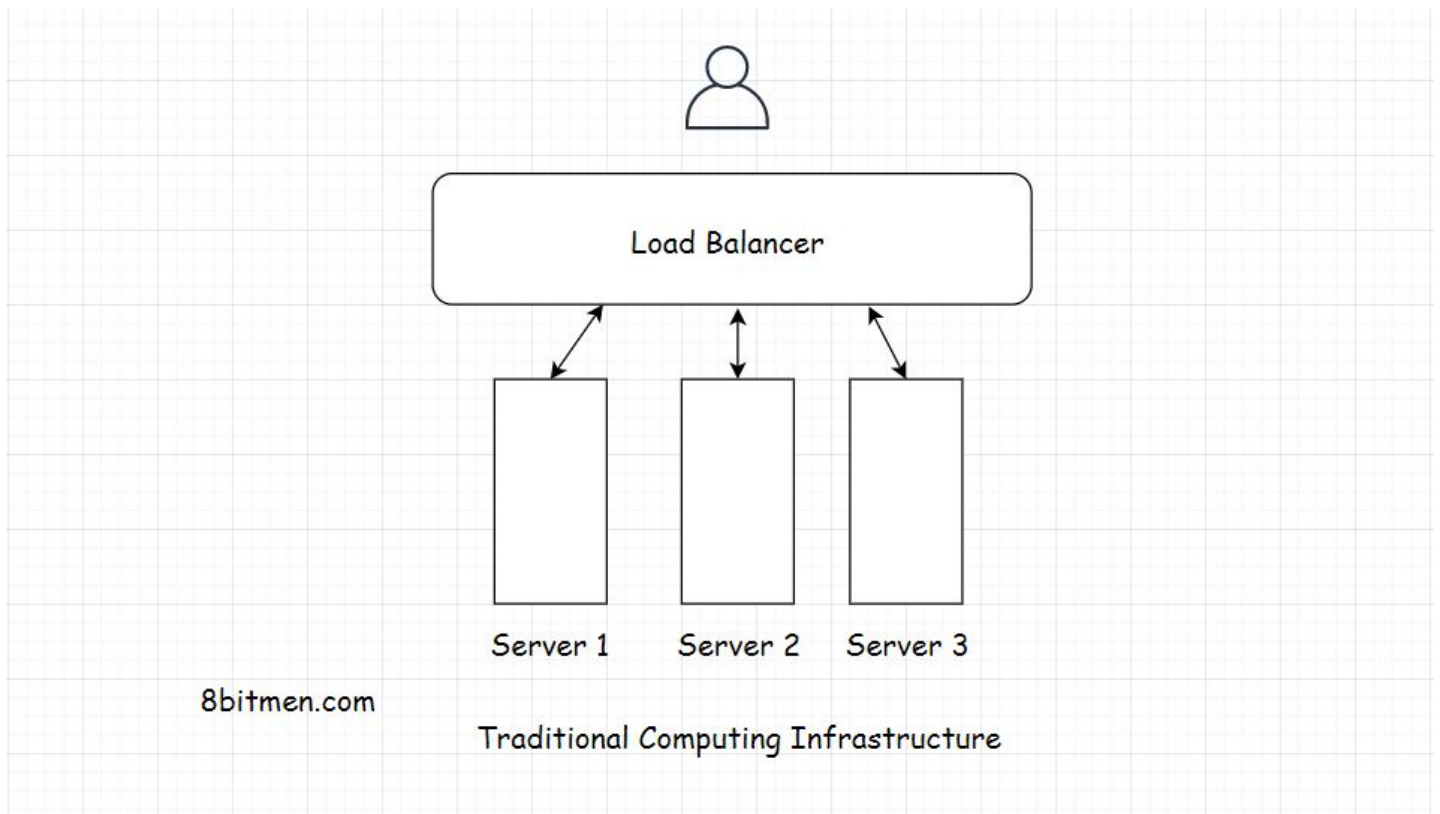
We have to make region-specific deployments with the region-specific elements in our deployment pipeline. This is how the complexity increases with multi-region deployments. The idea is to keep the region-specific changes to a minimum to avoid the multi-regional deployment acting as a hurdle to our agility.

Alright!! It is time to talk about the oversimplified difference between the traditional computing setup and the cloud computing infrastructure.

Cloud vs. traditional computing infrastructure

Traditional computing infrastructure

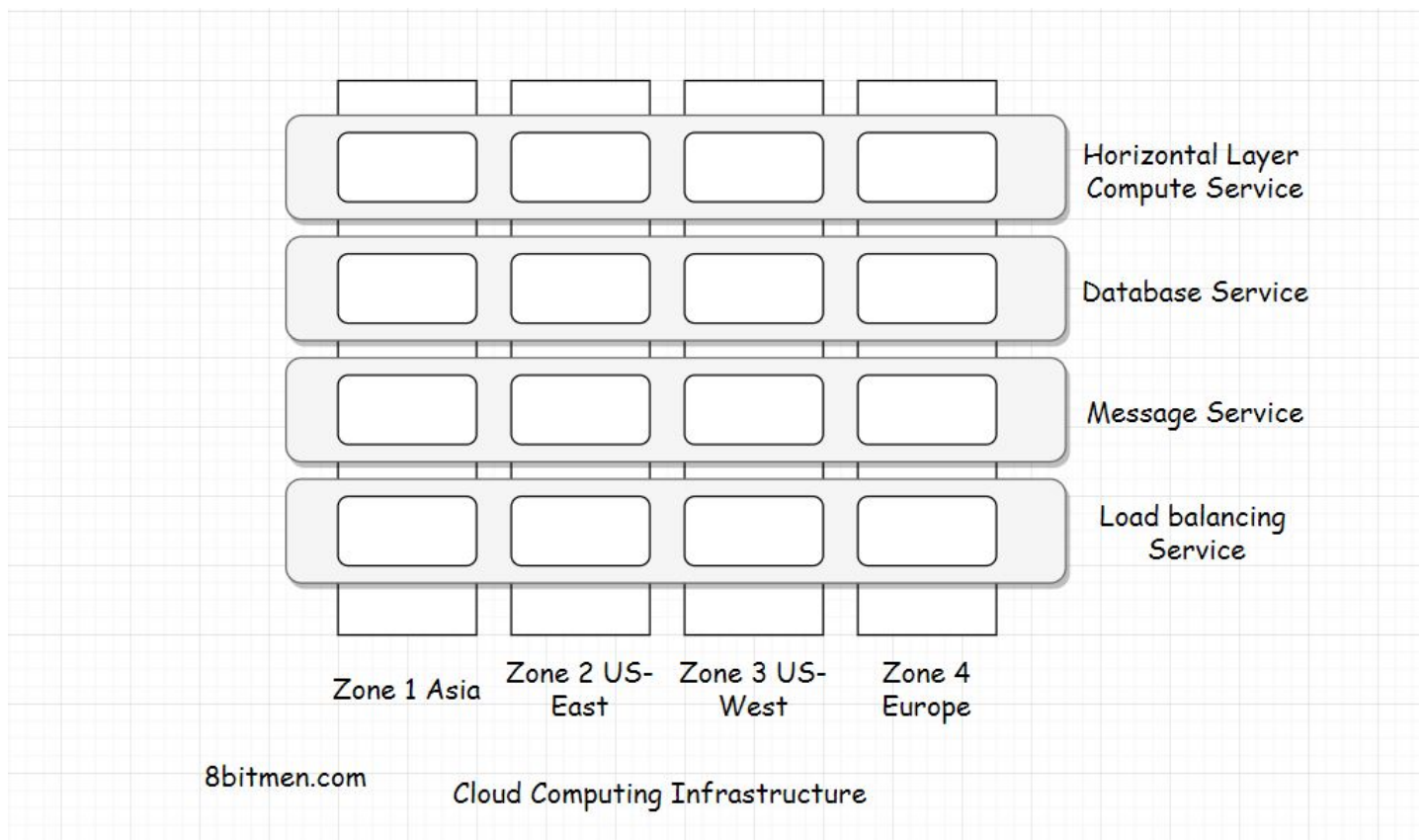
In the traditional computing model, we generally have big monolithic applications hosted by bare metal servers. We would put up a load balancer, arrange some bare metal servers in the replication and redundant mode, and happily run our service.



Over time, as the world came online, the traffic on the websites started piling up, and the complexity of applications increased, we split big *monoliths into service-oriented architecture and microservices*. We needed a more robust infrastructure to host our services, and this led to the adoption of cloud computing.

Cloud computing infrastructure

As opposed to behaving like one big single service, the cloud has several individual services, accessible via APIs, running in parallel and working in conjunction with each other. These services are spread across the globe horizontally. This enables them to stay loosely coupled and scale on the fly.



As you see in the diagram, different cloud services, be it the database service, load balancing service, or the compute service, all are spread horizontally across different availability zones and regions across the globe. This design facilitates availability, fault-tolerance, cost-effectiveness, and scalability.

Even if the message service goes down, it doesn't impact the other services. Also, as I discussed earlier, the zones have no dependency on each other; all the regions are physically isolated. The entire cloud infrastructure is carefully designed this way to keep the services running no matter what.

[Click here](#) to have a look at how *Google Cloud* services run horizontally across different regions and availability zones across the globe.

With this, we've reached the end of the discussion on how cloud deploys our applications across the globe. In the next lesson, I'll discuss how data centers scale with commodity off the shelf hardware.