Why Use Cloud? – Part 2

This lesson continues the discussion about technical reasons for using the cloud.

We'll cover the following

- Infrastructure maintenance
- Data safety
- Availability of industry-specific, custom solutions and cloud marketplace
- Leveraging distributed systems without having extensive knowledge of them

Infrastructure maintenance

Technology evolves at a crazy pace. When we buy hardware, we also have to continually upgrade it and the software it runs. We need to make sure our service runs on the upgraded OS with regular security patches. Also, when we run our own hardware, we need to take care of all the compliance with the industry regulations, protocols, and so on.

Now, would you rather rush to your basement every time your server is on fire and spend your valuable time-fighting fires, or would you want to spend your time working on the features requested by your customers?

Solo devs and startups don't have enough resources to simultaneously work on the code and manage the infrastructure. Therefore, we need a dedicated infrastructure team to keep doing this for us, ensuring that the servers are healthy and always running.

After all, our primary goals are to innovate, keep customers happy, and launch new features as fast as we can to stay competitive in the market.

With cloud hosting, we don't have to worry about all this stuff. Cloud providers take the onus of everything: server maintenance, security updates, hardware upgrades, and so on.

All that the businesses have to do is focus on writing new features and innovating.

There are instances where even big tech companies that can afford a dedicated infrastructure team have migrated their services to the cloud as opposed to running the servers themselves.

The biggest name in this is *Twitter*. Twitter moved a part of its service to the Google Cloud Platform (click here for details) in 2018. Here is a blog post I wrote on it that discusses the architectural aspects of the migration.

Additionally, *Evernote* moved to *Google Cloud* with over two-hundred million customers and *Netflix* leverages *AWS* Cloud to run it's streaming service.

All these migrations to the cloud by giant tech companies are for one simple reason and that is *the cloud enables businesses to focus their resources on innovation while having peace of mind with regards to infrastructure maintenance*.

Data safety

To prevent loss of data, it needs to be replicated across several data centers across different availability zones around the globe as a contingency for power outages and natural calamities.

Backing up data across the globe in different data centers is not something that every self-hosted business can afford unless it's a blue-chip stock in the stock market. Calling the entire process expensive would be an understatement.

At the same time losing customer data is not an option. Deploying on the cloud makes our lives easier because the cloud platform backs up our data across several different availability zones for disaster recovery.

Availability of industry-specific, custom solutions and cloud marketplace

As our business grows, we need several custom infrastructural solutions and new technologies like machine learning, blockchain, and so on for implementing new features.

For obvious reasons, we cannot have expertise in every domain. Also, we can't write everything from the ground up. It's just not feasible. However, we can leverage all the new tech to run our service using the *SaaS* APIs provided by the cloud provider.

When using the APIs, the learning curve is minimal. It averts the need for learning and implementing everything from the ground up, subsequently speeding up the entire development process. Cloud offers a plethora of services, features, and infrastructural solutions for different levels to enable us to bring our product to the market in minimum time.

We can also leverage the cloud marketplace where third-party providers plugin their solutions into the cloud platform. These marketplaces have pretty extensive custom third-party solutions that allow businesses to pick services other than those already present on the cloud by default. These services may include better security solutions, data parsing APIs, monitoring and analytics tools, and so on. Marketplaces make cloud platforms a one-stop-shop for everything.

Cloud platforms have customers on board from a variety of domains such as Energy, Law, Fintech, Gaming, and so on. These providers offer battle-tested infrastructure for hosting these services, and they are aware of the intricacies of running services for these domains. There are different industry regulations for different domains and compliance with all these regulations and protocols at the infrastructural level is taken care of by the cloud platforms. Businesses do not have to really worry about implementing any of the stuff.

Leveraging distributed systems without having extensive knowledge of them

Running and managing distributed systems while maintaining a consistent state of an object among thousands of nodes deployed across the globe is something that is not trivial.

To operate distributed systems, we need extensive technical knowledge on the domain, and we really can't skip this. If we need to scale our service to millions of users, we need to have a distributed backend. Well, the good thing is with cloud platforms we don't really have to implement anything ourselves, everything is taken care of by the cloud platform. All we need is an API to interact with, which makes our lives a lot easier.

Alright, with this we have covered both the technical and the economic benefits of deploying our applications on the cloud. In the next lesson let's dive into the

different types of clouds.