Previously we've discussed many popular features of cloud computing. They are scalability, availability, accessibility, reliability and flexible pricing models. Let's introduce the fundamental technology - virtualization which sets behind to empower these wonderful cloud-native features. Virtualization is a way to virtualize physical computing resources and enable users to manage those resources through easy-to-operate software or UI portals without touching the actual hardware infrastructure packages. It dramatically changes the traditional way we manage hardware, storage, network resources because we do not need to handle the underlying physical devices. Let's take data management as an example. Data Management has got widely enhanced from the CSP's global infrastructure. They provide high availability, easy accessibility by enabling data redundancy with replication. Besides that, to achieve high reliability, we need to dig further into backup plans which rely highly on cloud virtualization solution: snapshots. A snapshot stores all point-in-time data on a drive, and you may make use of it to do recovery, new VM creation, or future reference.

Moreover, virtualization technology has brought down the cost of computing resources. In traditional on-premises business models, we usually buy or borrow additional infrastructure components: routers, RAMs, web servers, database servers, and network packages to handle boosting business. However, sometimes this phenomenon may turn out to be temporary or one-time. By making use of pay-as-you-go pricing model, or the spotted virtual computing resources, we could simply increase the resources in the cloud platform and set a TTL once they finish the project, the resources will be disposed of and could be reused by some other needs. Also, this could also be an environmentally friendly solution. In essence, we could claim that cloud computing could mean nothing without virtualization.

Reference

Amazon Web Services. (n.d.). What is Virtualization? Amazon Web Services. https://aws.amazon.com/what-is/virtualization/