# Active/Active Cloud Infrastructure

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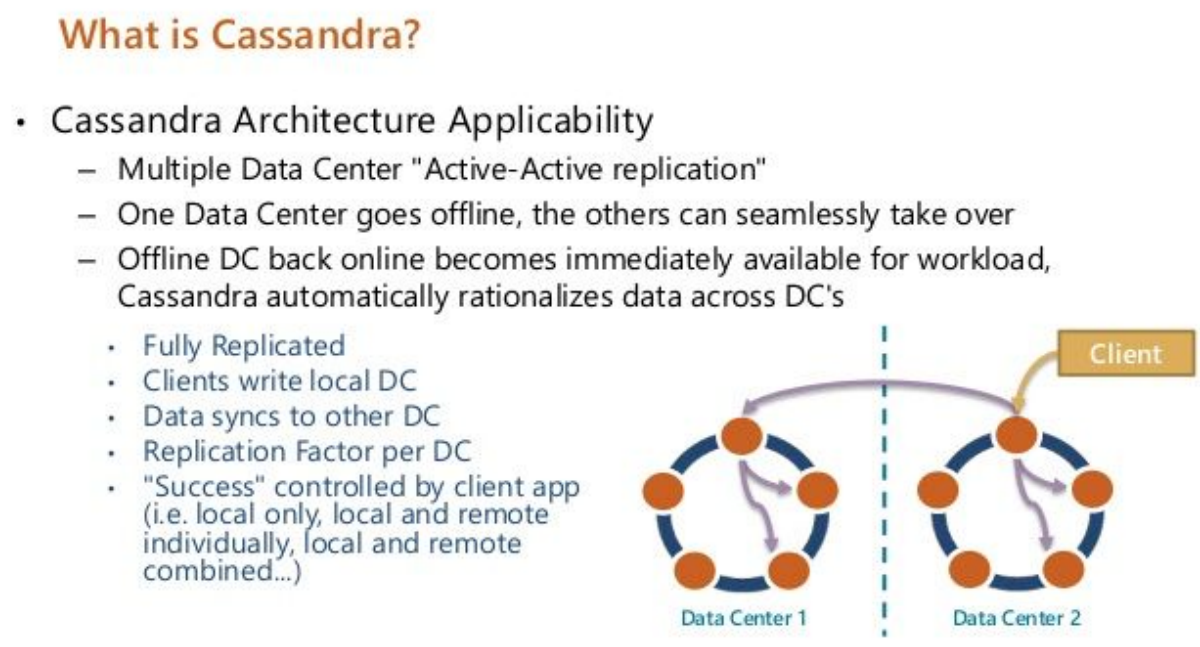
Determining a stable implementation of an Active/Active system has been a topic of great interest to those maintaining multi-datacenter cloud-based services. This type of infrastructure is highly valued because it allows for services and applications to remain continuously available, even during planned and unplanned downtimes. Before implementing an Active/Active system, one must first determine the most effective ways to satisfy its two key constraints: maintaining fast and reliable cross-datacenter replication, as well as determining efficient disaster recovery options. Based upon these two constraints, we had determined that the problem could be addressed at the database level using the NoSQL database Cassandra. In contrast to traditional SQL databases, Cassandra served as a much more intuitive cloud-based data store due to its cluster based architecture. Among its many benefits, Cassandra provides out-of-the-box functionality which directly addresses the two main problems in implementing an Active/Active system. Through a combination of its gossip protocol and snitch communications, it is able to achieve both resilient cross-region replication as well as seamless failover in disaster situations, with automatic load balancing. Below is an outline describing the key benefits provided by Cassandra for large cloud-based systems:

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