

Keynote Talk

Cassandra – Structured Storage System on a P2P Network

Avinash Lakshman, Prashant Malik
Facebook Inc
Palo Alto, CA, USA

Abstract

Cassandra is a distributed storage system for managing structured data that is designed to scale to a very large size across many commodity servers, with no single point of failure. Reliability at massive scale is a very big challenge. Outages in the service can have significant negative impact. Hence Cassandra aims to run on top of an infrastructure of hundreds of nodes (possibly spread across different datacenters). At this scale, small and large components fail continuously; the way Cassandra manages the persistent state in the face of these failures drives the reliability and scalability of the software systems relying on this service. Cassandra has achieved several goals – scalability, high performance, high availability and applicability. In many ways Cassandra resembles a database and shares many design and implementation strategies with databases. Cassandra does not support a full relational data model; instead, it provides clients with a simple data model that supports dynamic control over data layout and format.

Categories & Subject Descriptors:

C.2.4 [Distributed Systems]: Distributed Databases

General Terms: Algorithms, Design, Reliability