{API:WORLD}

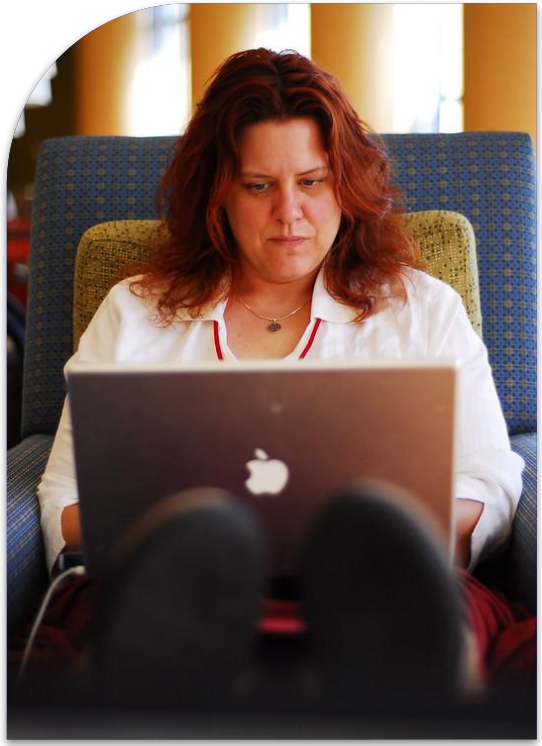
Cassandra Made Easy with Stargate REST APIs

STARGATE

DataStax Developers

Kirsten Hunter

Developer Advocate



@synedra

@synedra

- Trainer
- Public Speaker
- Developers Support
- Developer Applications
- Developer Tooling

- Writer of Irresistible APIs

- Happy developer for 30 years
- Working with APIs for 20 years

Agenda (25 min)

01

Cassandra
Just the Basics

02

Stargate
Engine for HTTP APIs

03 {REST}

REST API
Resource-Driven

04

Document API
Structured Data

05

GraphQL API
Declarative Queries

05

Sample Application
To-Dos in Each

Agenda (25 min)

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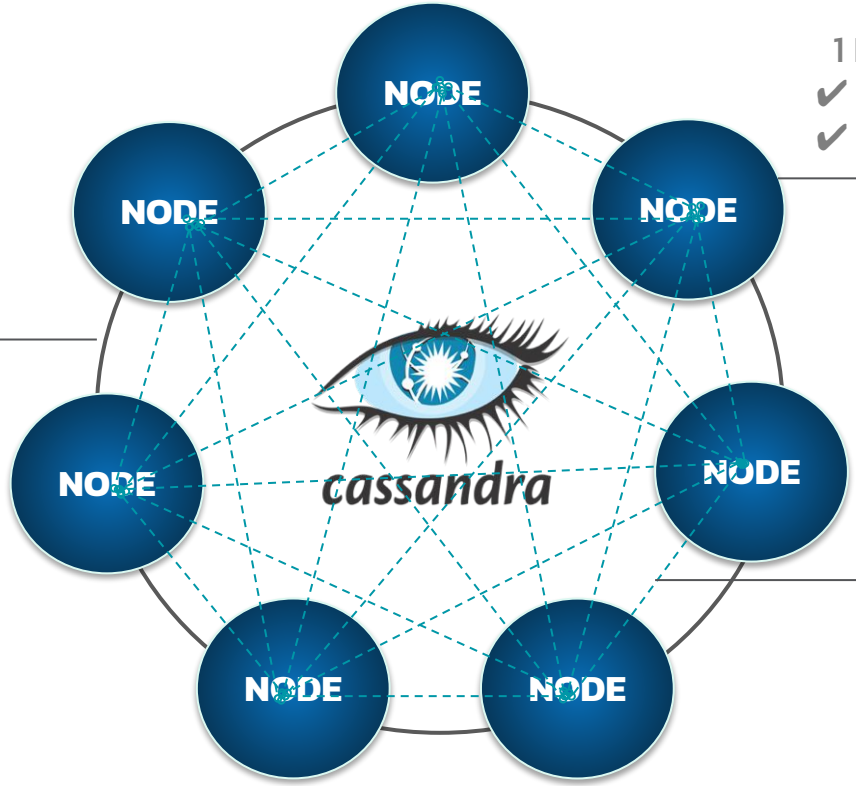
What is Cassandra?

Why is it such a hot topic?

- Cassandra is a highly scalable peer-to-peer NoSQL database with zero downtime
- Cassandra generally requires a schema
- Data is organized based on expected queries instead of in data tables
- Setup/configuration can be challenging
- Does not use SQL, rather CQL

Apache Cassandra™ = NoSQL Distributed Database

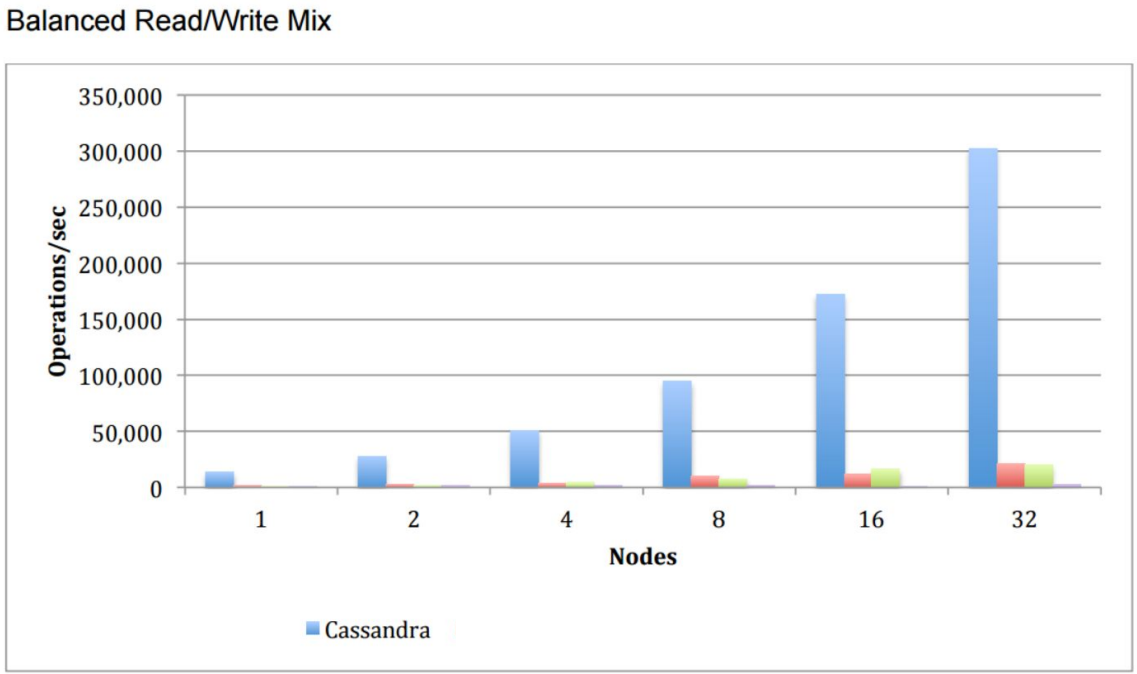


1 Installation = 1 NODE
- ✔ Capacity = ~ 2-4TB
- ✔ Throughput = LOTS Tx/sec/core

DataCenter | Ring

Communication:
- ✔ Gossiping
- ✔ Masterless

Apache Cassandra™ **Linear Scalability**



Apache Cassandra™ **Big Names**

Apache Cassandra @ Netflix

- 98% of streaming data is stored in Apache Cassandra
- Data ranges from customer details to viewing history to billing and payments
- Foundational datastore for serving millions of operations per second

- 30 million ops/sec on most active single cluster
- 500 TB most dense single cluster
- 9216 CPUs in biggest cluster

O(100) Clusters
O(10000) Instances
O(10,000,000) Replications per second
O(100,000,000) Operations per second
O(1,000,000,000,000,000) Petabytes of data

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What is Stargate?

- Open Source project adding interfaces to Cassandra
- Stargate exposes your Cassandra data via HTTP APIs
- The REST API gives a resource-driven interface similar to CQL
- The Document API allows you to store arbitrary structured data together
- The GraphQL API gives you the ability to support descriptive queries.

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