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Vitess

Introduction and New Features

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Lead Maintainer, Vitess

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Sugu Sougoumarane

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@ssougou



What is Vitess?

Cloud
Native
Database

Massively
Scalable

Highly
Available

MySQL
Compatible

Vitess serves **millions of QPS** in production

 YouTube New Relic® slack*Flipkart* HubSpot*peak* Pinterest Square BetterCloud weave GitHub 京东
JD.COM Quiz of Kings stitchlabs nozzle

Concepts



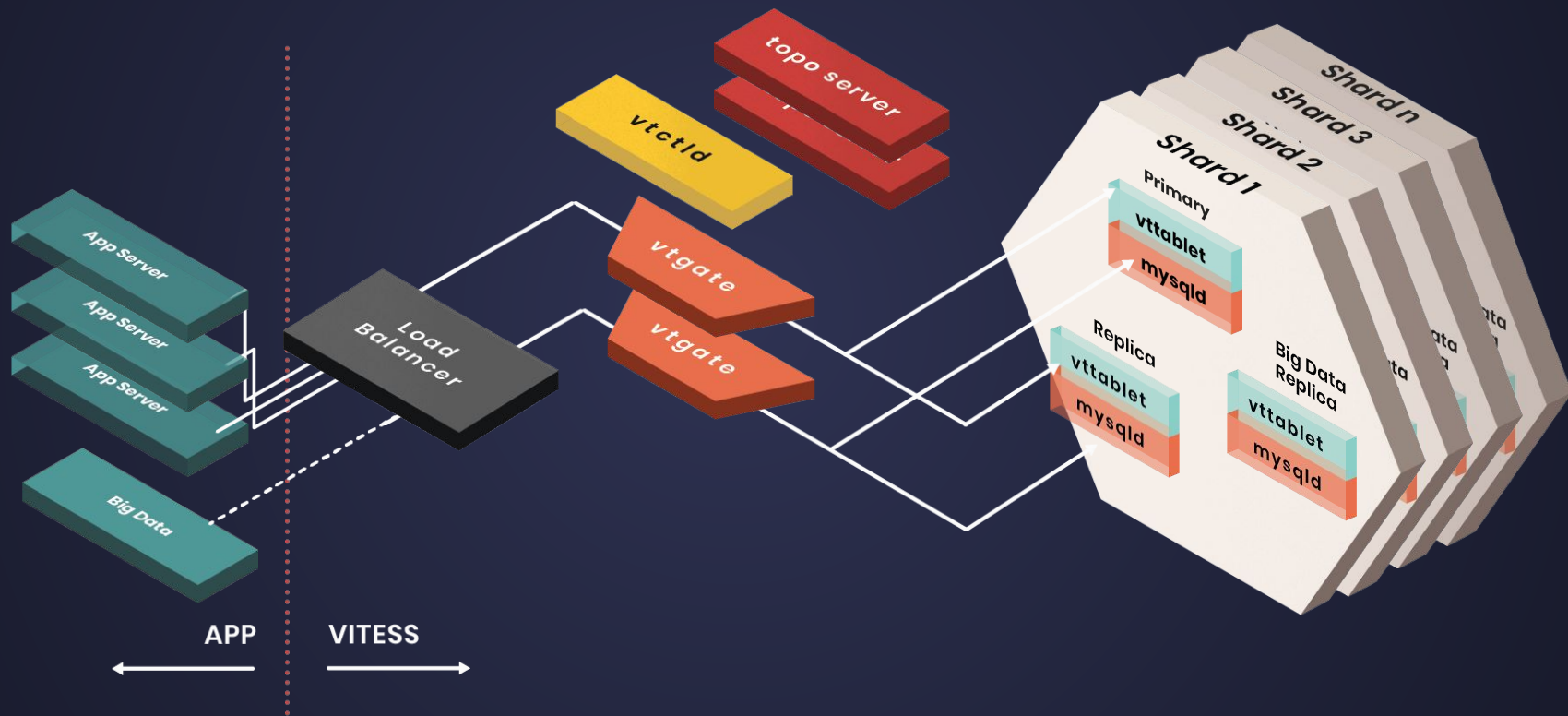
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- Keyspace
- Shard
- Topology server



Vitess Architecture



Demos / New Features



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- MySQL Compatibility
- VReplication
- Online Schema Changes
- Automatic failovers





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MySQL Compatibility

Harshit Gangal

Engineer @ PlanetScale

Andrés Taylor

Engineer @ PlanetScale

Vitess provides an illusion

A single
database

MySQL
5.7/8.0

A single,
dedicated
connection

Need to work with

Database
Frameworks

ORMs

Legacy
code

Third Party
Applications



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Risk-free way to adopt Vitess using VReplication

a short demo

Rohit Nayak

Software Engineer, PlanetScale

@rohitnayak

VReplication Demo



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Demo Steps

- Create *unmanaged* vtablet in keyspace *commerce* pointing to existing MySQL server
- Create Vitess Cluster in keyspace *customer*
- Start MoveTables vreplication workflow to move two tables into *customer*
- Confirm data has been transferred
- Switch reads for those tables to Vitess
- Switch writes as well
- Rollback to existing setup



VReplication Demo



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Other VReplication applications

- Migration
- Reshard
- Materialization
 - physical views
 - anonymization
 - aggregation
 - change data capture



VReplication Demo



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Several deployments at scale

- 2 TB database, 1->4->16 shards
- 3 Billion row table
- 600+ streams on single tablet
- Aurora upgrade





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Vitess: Online DDL

Shlomi Noach

Engineer @ PlanetScale

@ShlomiNoach



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ALTER TABLE

Out of the developer's hands



ALTER TABLE issues

Blocking

Resource
greedy

Unauditable

Uninterruptible

Workarounds

gh-ost

pt-osc

External
tools

Operational
domain

Vitess: Online DDL ALTER WITH 'gh-ost' TABLE Back into developer's hands

*Syntax subject to change



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Vitess: Automatic Failover Demo

Sugu Sougoumarane

CTO @ PlanetScale

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Resources



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- Docs: vitess.io
- Slack: vitess.io/slack
- GitHub: [vitessio/vitess](https://github.com/vitessio/vitess)
- Twitter: [@vitessio](https://twitter.com/vitessio)





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Questions?

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