

Vitess: Sharded MySQL on Kubernetes

Sugu Sougoumarane, Co-creator
CTO, PlanetScale



CLOUD NATIVE
COMPUTING FOUNDATION

@vitessio

What is Vitess

- Sharding middleware for MySQL
- Massively scalable
- HA
- Cloud-native





Vitess stats

Started 2010

8,000+ stars

16,000+ commits

Marquee adopters

100+ contributors

900+ Slack members

1000+ forks

Key adopters

 **slack** 30% Migrated to Vitess

 **Square** Cash App fully runs on Vitess

 **Pinterest** All of advertising campaign management





jack  @jack · Dec 8



Top Charts

Free Apps

Paid Apps



1 Cash App

Send, Spend Money,
Buy Bitcoin

OPEN



2 YouTube: Watch,
Listen, Stream

Videos, Music and Live Streams

OPEN



3 BURGER KING® App

Coupons & Mobile Order

GET



4 Instagram

Photo & Video



326



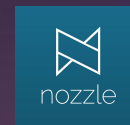
509



3.2K



The Community



Vitess on Kubernetes



2015



Google Cloud Platform Blog

Product updates, customer stories, and tips and tricks on Google Cloud Platform

Scaling MySQL in the cloud with Vitess and Kubernetes

Friday, March 20, 2015

Your new website is growing exponentially. After a few rounds of high fives, you start scaling to meet this unexpected demand. While you can always add more front-end

kubernetes release date



All

News

Images

Videos

Shopping

More

Settings

Tools

About 6,630,000 results (0.49 seconds)

Kubernetes / Initial release dates

July 21, 2015



kubernetes

Production Workloads



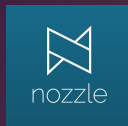
Oldest, since 2016



Hundreds of keyspaces



10,000+ Tablets



Migrate from cloud to cloud
MySQL 8.0





Kelsey Hightower
@kelseyhightower

Following

I'm always going to recommend people exercise extreme caution when running stateful workloads on Kubernetes. Most people who are asking "can I run stateful workloads on Kubernetes" don't have much experience with Kubernetes and often times the workload they are asking about.

12:10 AM · 24 Mar 2019

283 Retweets 895 Likes



30

283

895



Tweet your reply



Kelsey Hightower · Mar 24

Some people believe that rubbing Kubernetes on a stateful workload turns it into a fully managed database offering rivaling RDS. This is false. Maybe with enough effort, and additional components, and an SRE team, you can build RDS on top of Kubernetes.

21

151

488



Sugu Sougoumarane @ssougou · Mar 24

Replying to @kelseyhightower

@vitessio fills this gap. @HubSpot and @JD_Corporate have been running stateful workloads on it for over two years now. But it will be nice if Kubernetes put more thought into this problem area :).

2

1

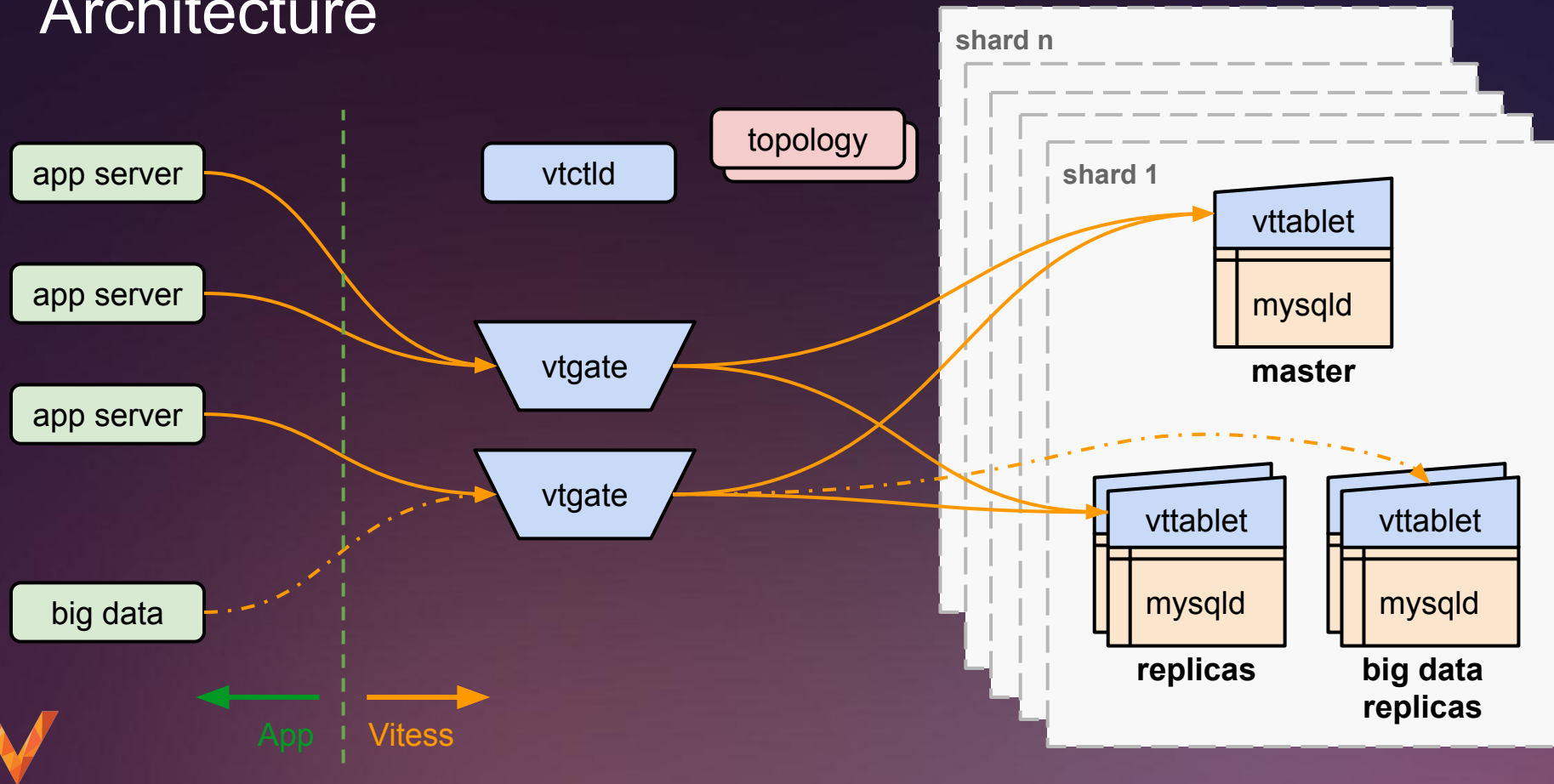
11



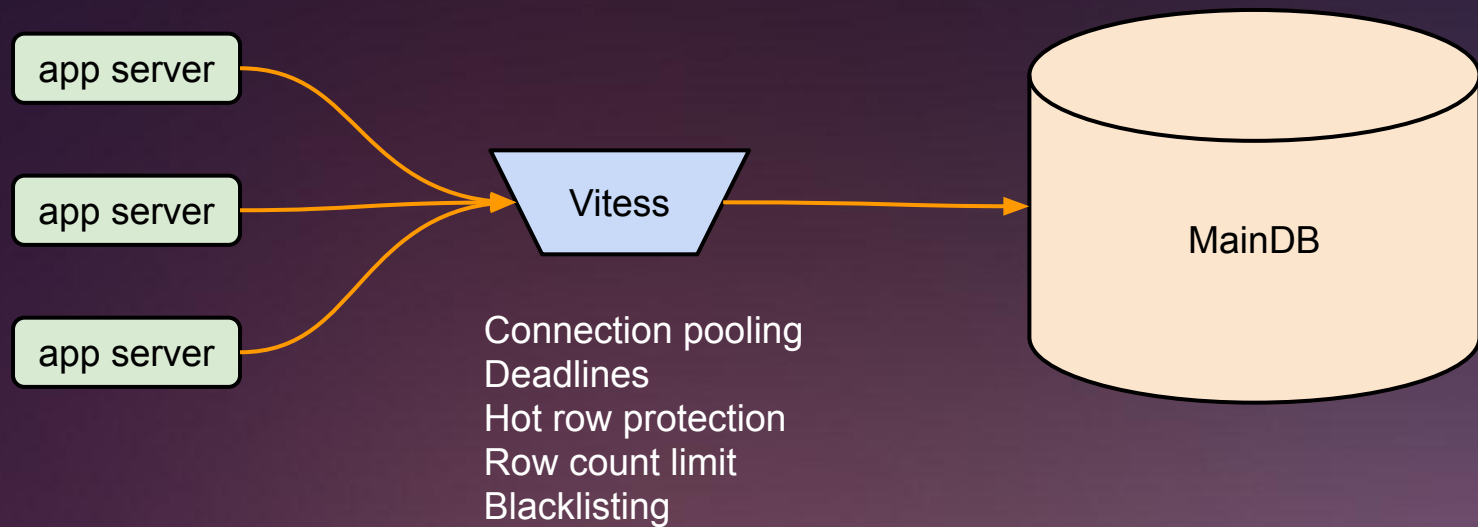
ONE DOES NOT SIMPLY

MOVE MYSQL TO KUBERNETES

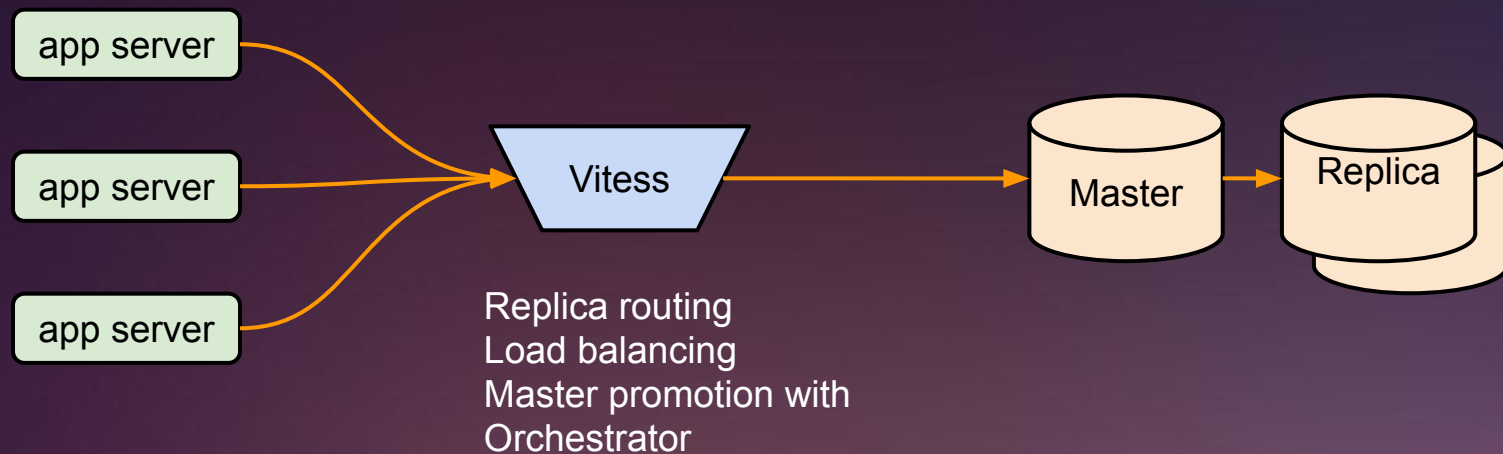
Architecture



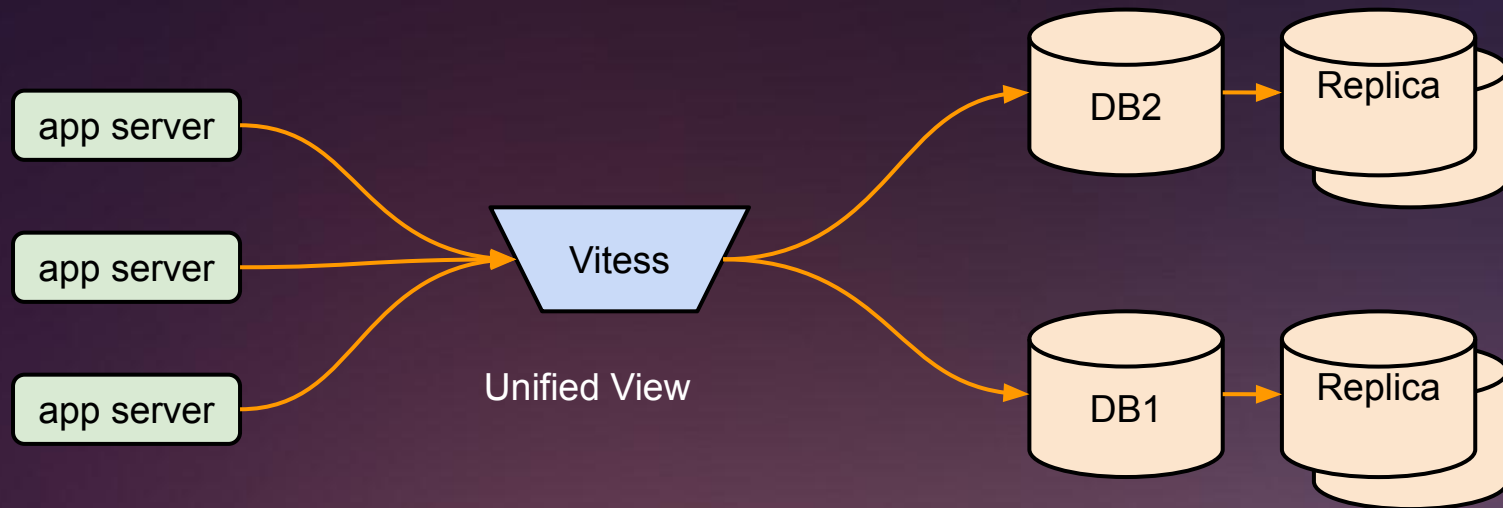
Starting with Vitess



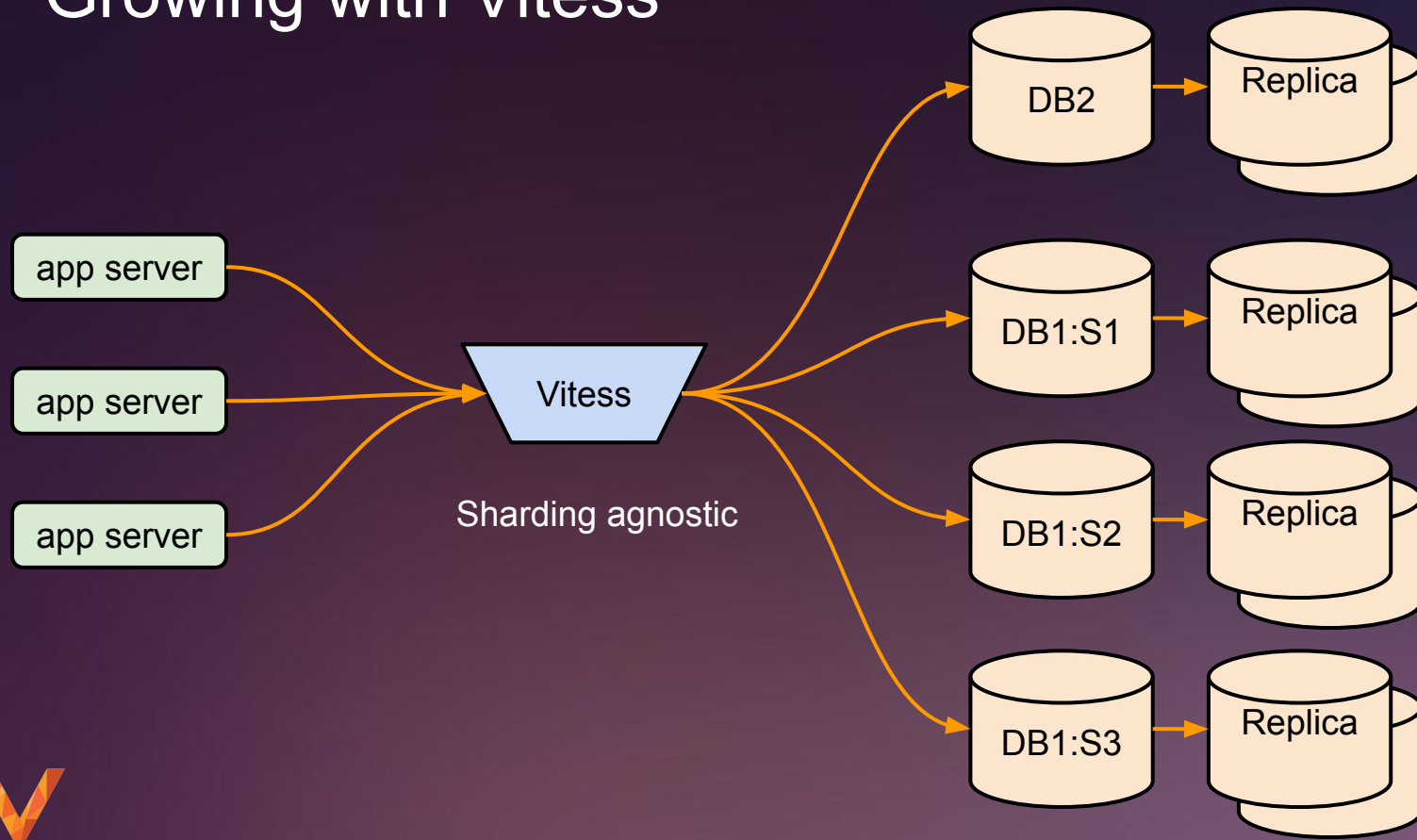
Growing with Vitess



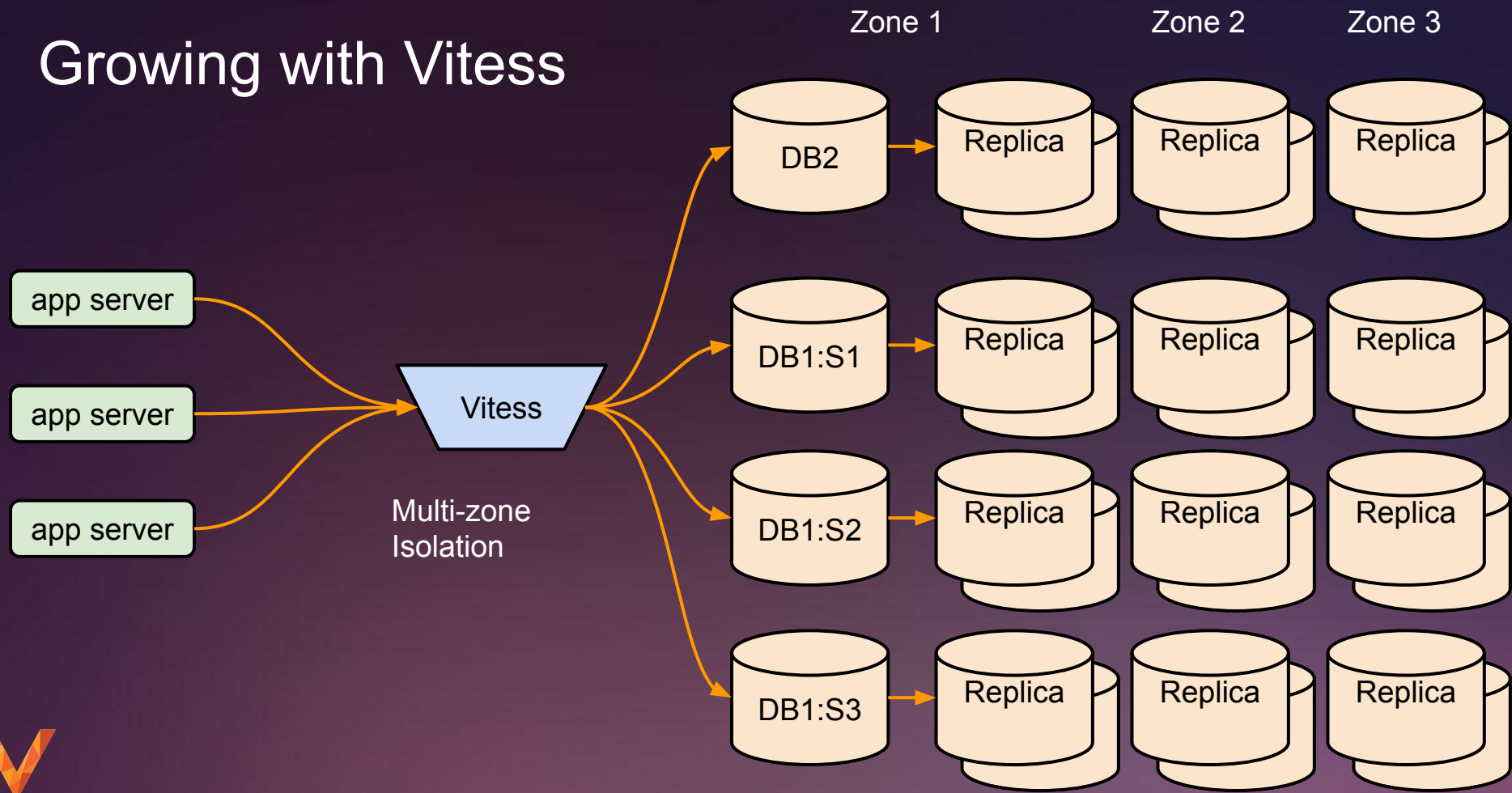
Growing with Vitess



Growing with Vitess



Growing with Vitess



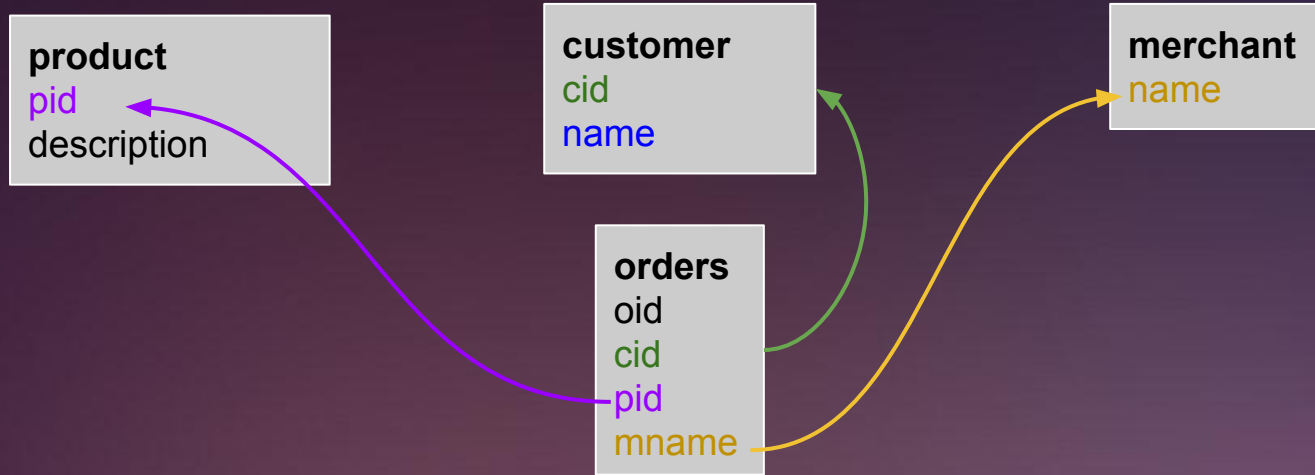
Demo



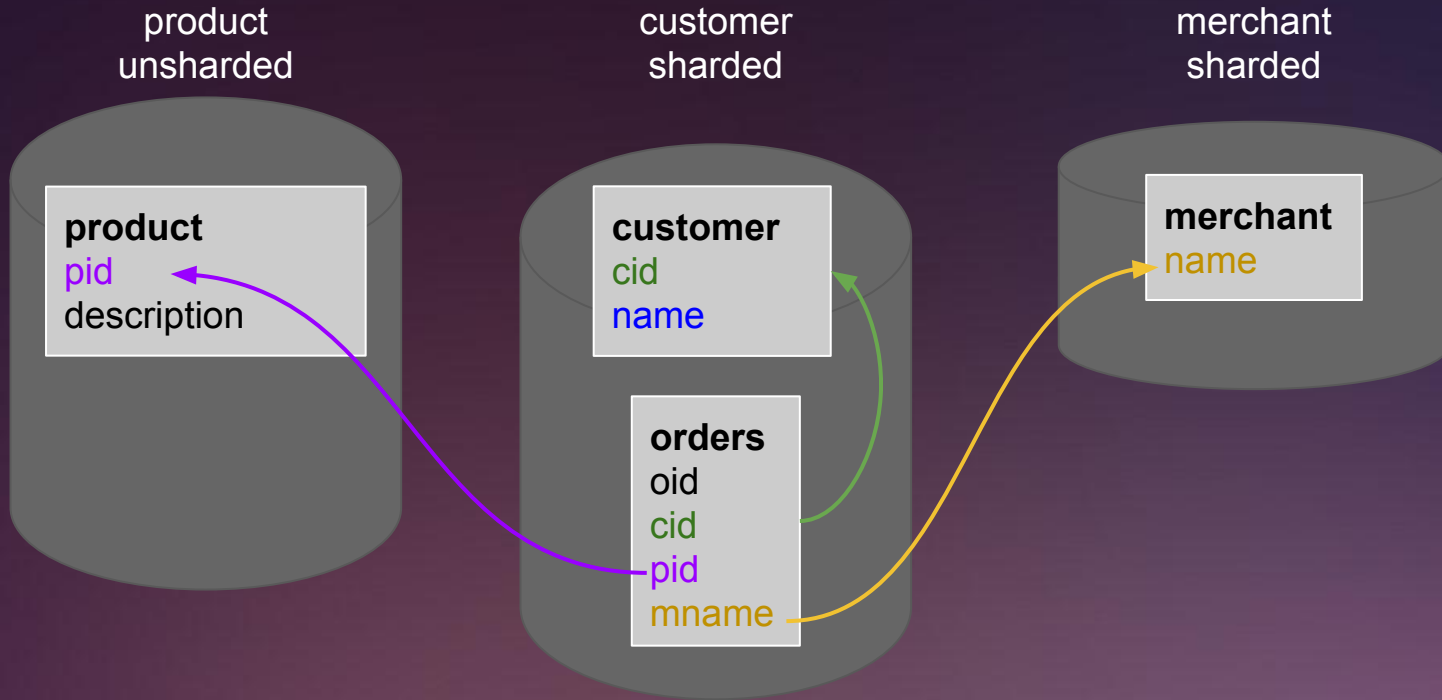
THE REGRET FEATURE

I'VE MADE A HUGE MISTAKE

Marketplace schema



Sharded



WARNING



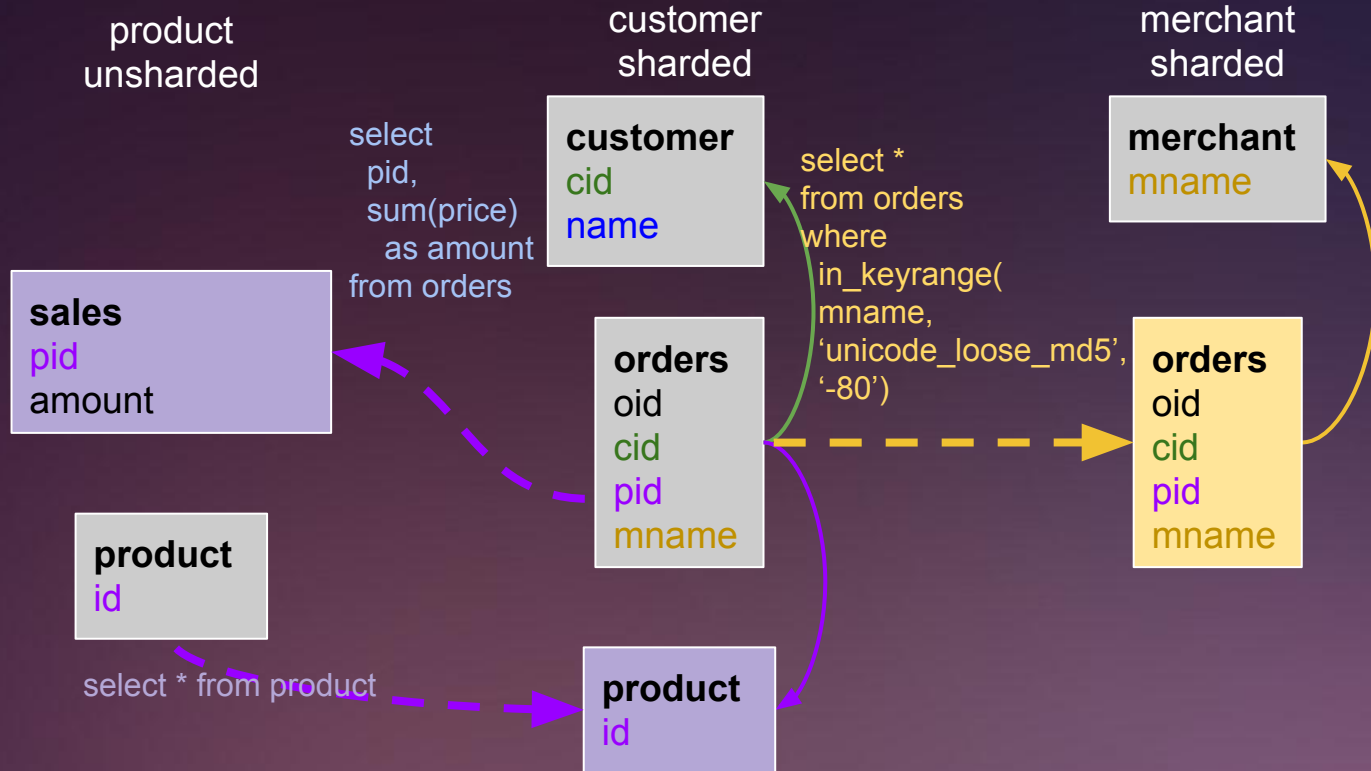
**THESE STUNTS ARE PERFORMED
BY TRAINED PROFESSIONALS**



DO try these at home



VReplication





Use cases

- Materialized Views
- Real-time Rollups
- Resharding
- Backfilling of lookup vindexes
- Schema deployment
- Data migration
- Change notification



What's next?

- Sign into [slack](#) channel at [vitess.io](#)
- Try bringing up a cluster on your laptop or kubernetes
- <https://vitess.io/docs/tutorials/>
- <https://github.com/vitessio/vitess>
- [Square Cash blog posts on sharding with Vitess](#)
-  @sougou
-  @vitessio @planetscaledata @ssougou

Questions?

