

# Vites@QCon

Sugu Sougoumarane, Co-creator  
CTO, PlanetScale  
@ssougou  
ssougou.blogspot.com



**CLOUD NATIVE**  
COMPUTING FOUNDATION

# Database trends

- Transactional data explosion
- Move to cloud



# Transactional data options

- Single instance RDBMS
- NoSQL
- App Sharded RDBMS
  
- NewSQL



# Cloud

- Instances go down all the time
  - Good master promotion story
- Durability through replication
  - Semi-sync
- Small instances
- Discovery mechanism



# Vitess

- Leverage MySQL
- Massive Scale
- Battle-hardened
- Runs “anywhere”



A rocket launch at a space station with overlaid statistics. The background shows a rocket ascending from a launch pad, surrounded by large white plumes of smoke and fire. The sky is a clear blue. In the foreground, the metal lattice structure of a launch tower is visible on the left. The text is overlaid in white, bold, sans-serif font.

Vitess stats

Started **2010**

Marquee adopters

**6,000+** stars

**100+** contributors

**15,000+** commits

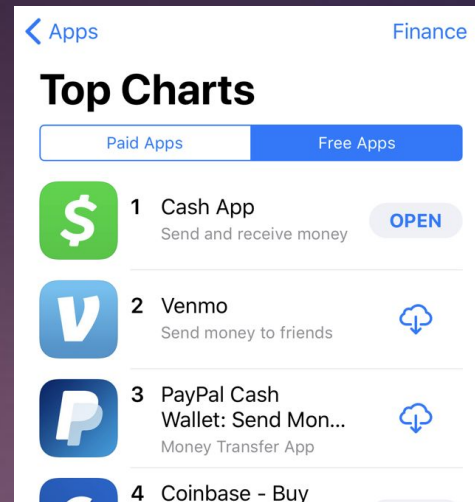
**500+** Slack members

# Key adopters

 slack 20% Migrated to Vitess

 10,000+ Tablets on Kubernetes

 Square Cash App fully runs on Vitess

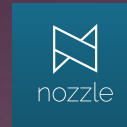


# The Community

## In production



## Evaluating



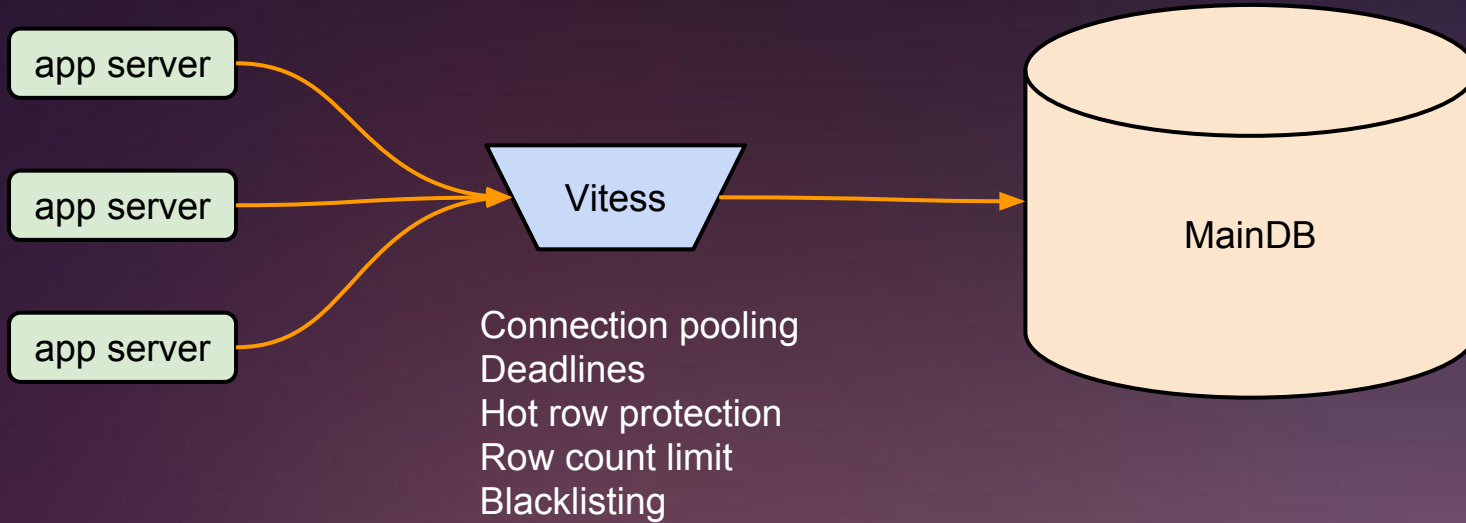




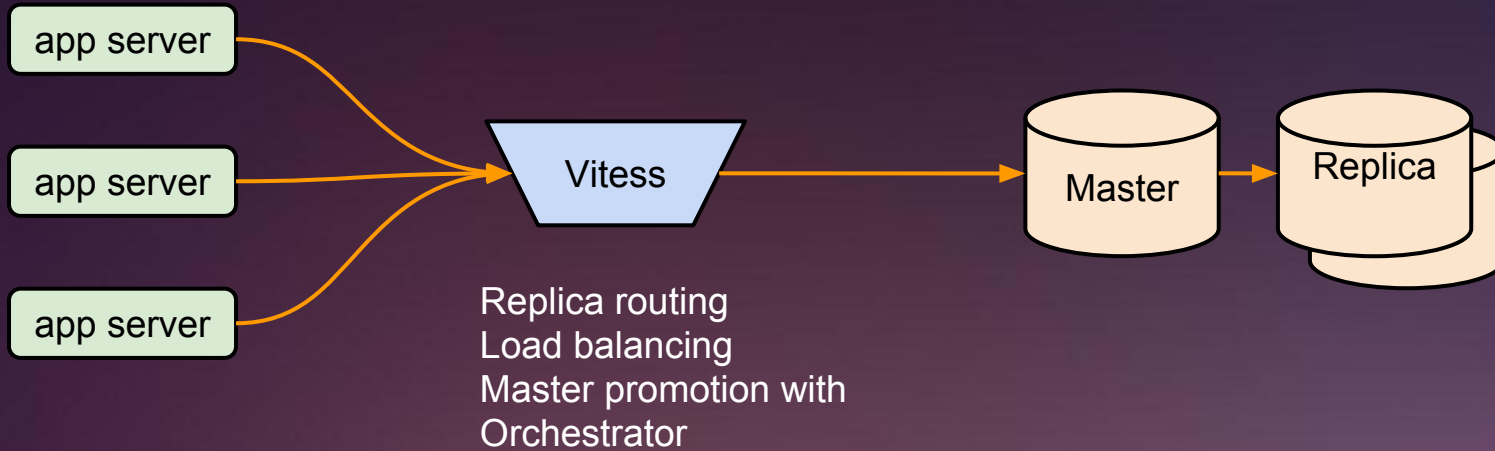
# MySQL Community Award

“Application of the year 2018”

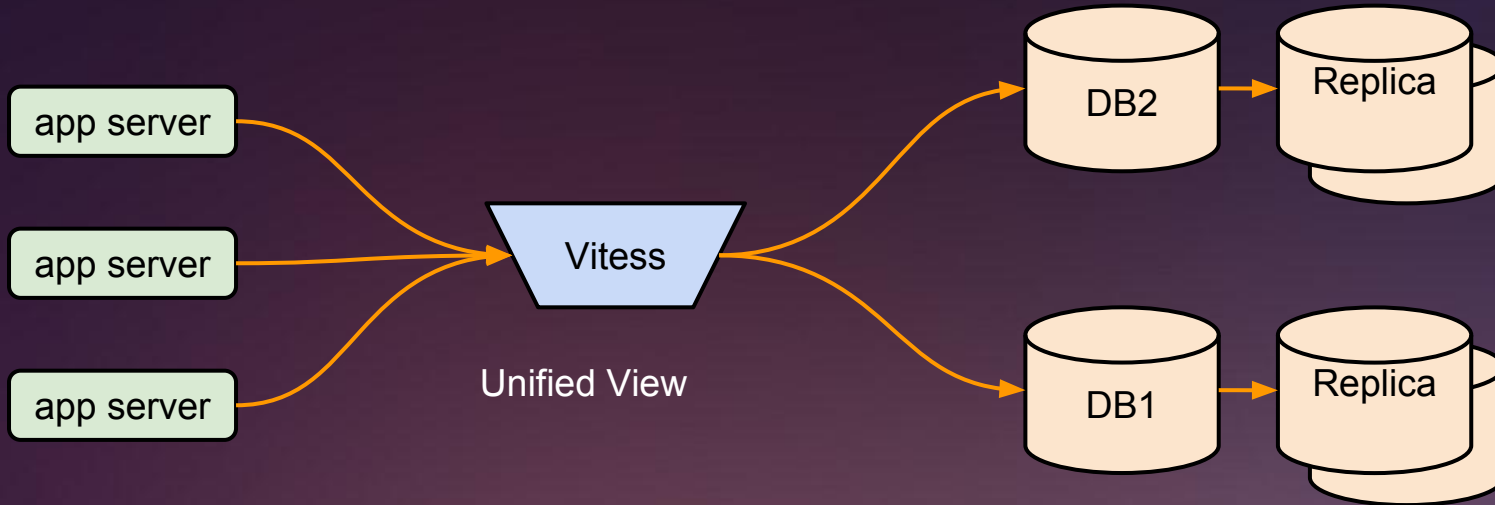
# Growing with Vitess



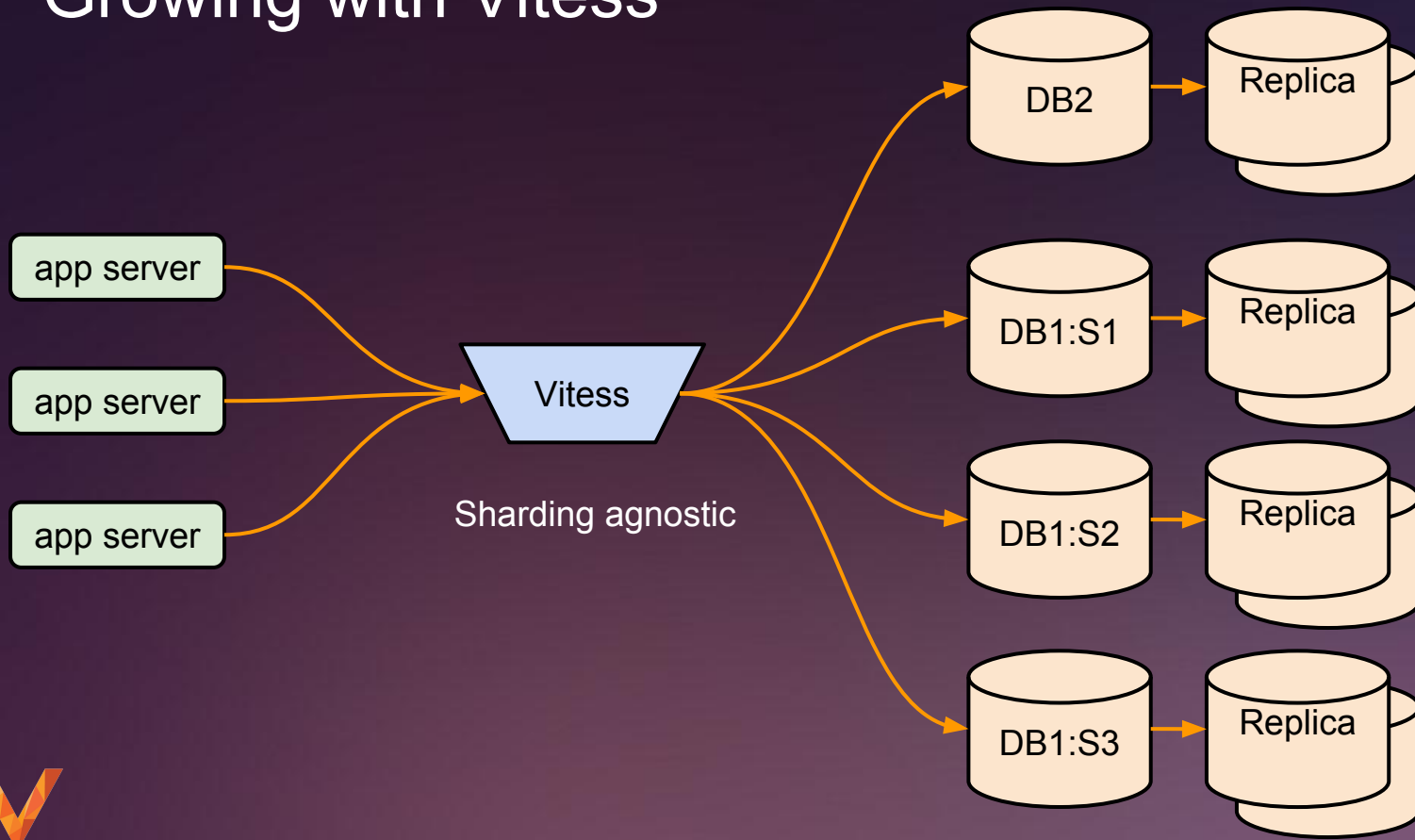
# Growing with Vitess



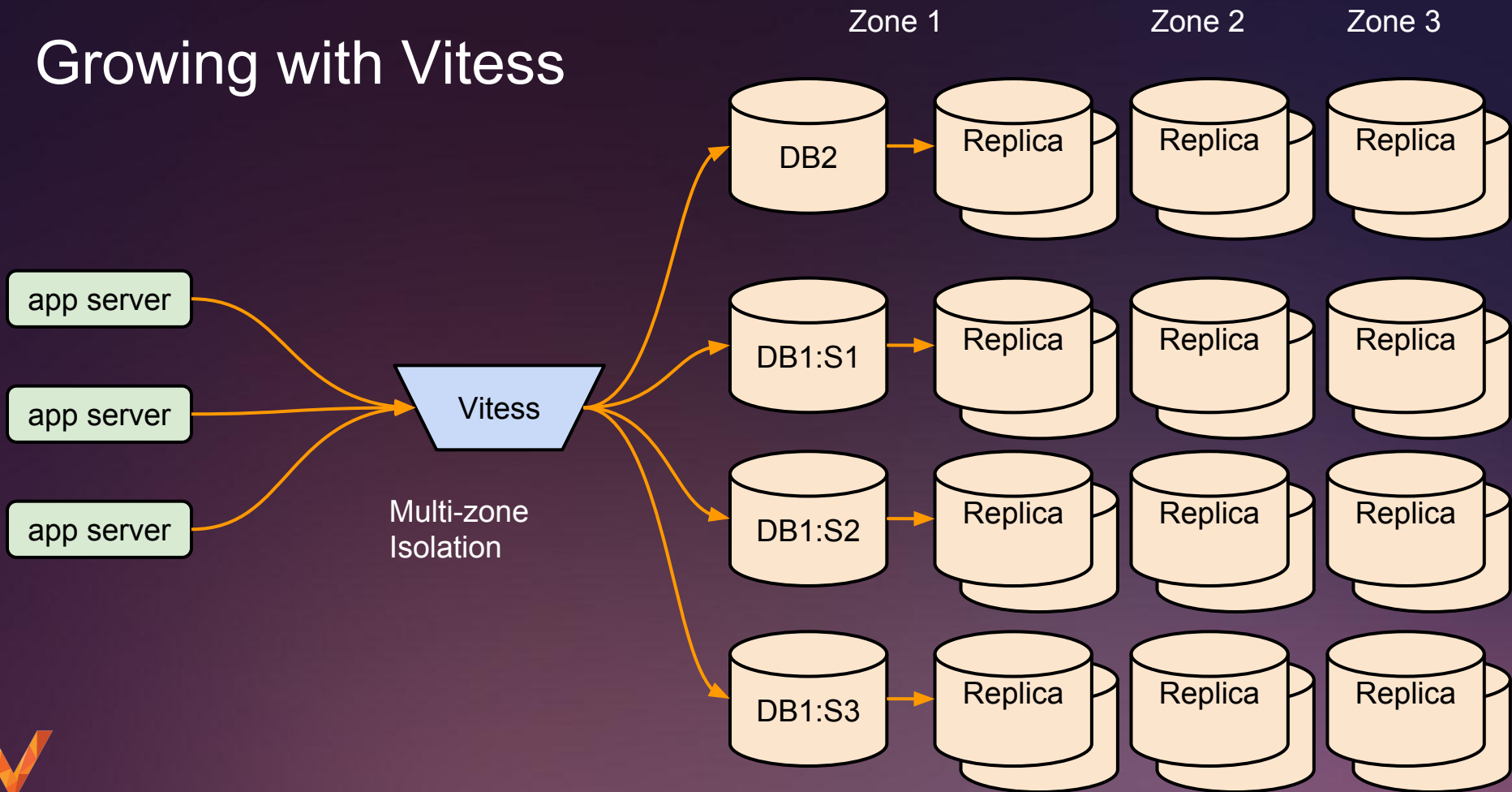
# Growing with Vitess



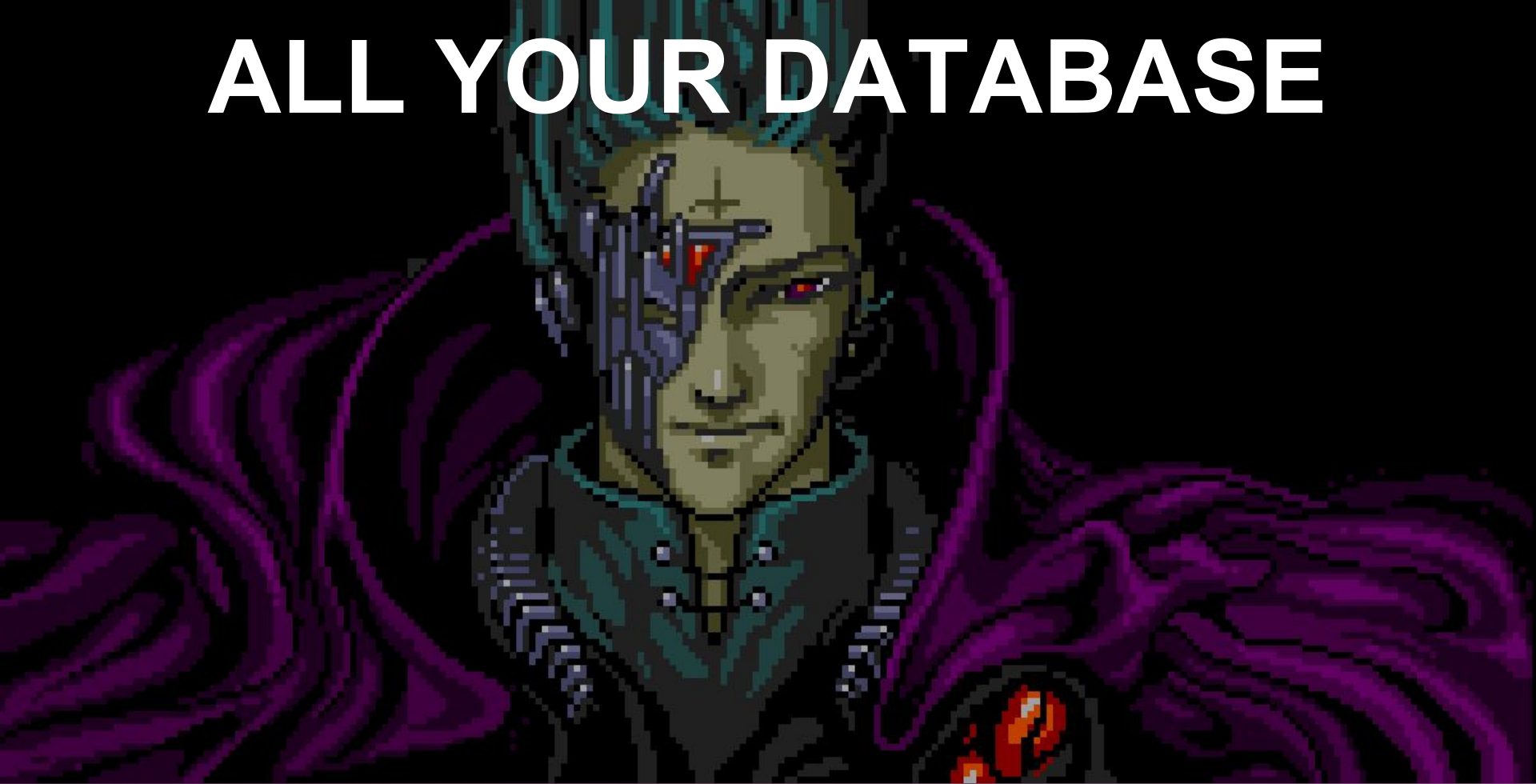
# Growing with Vitess



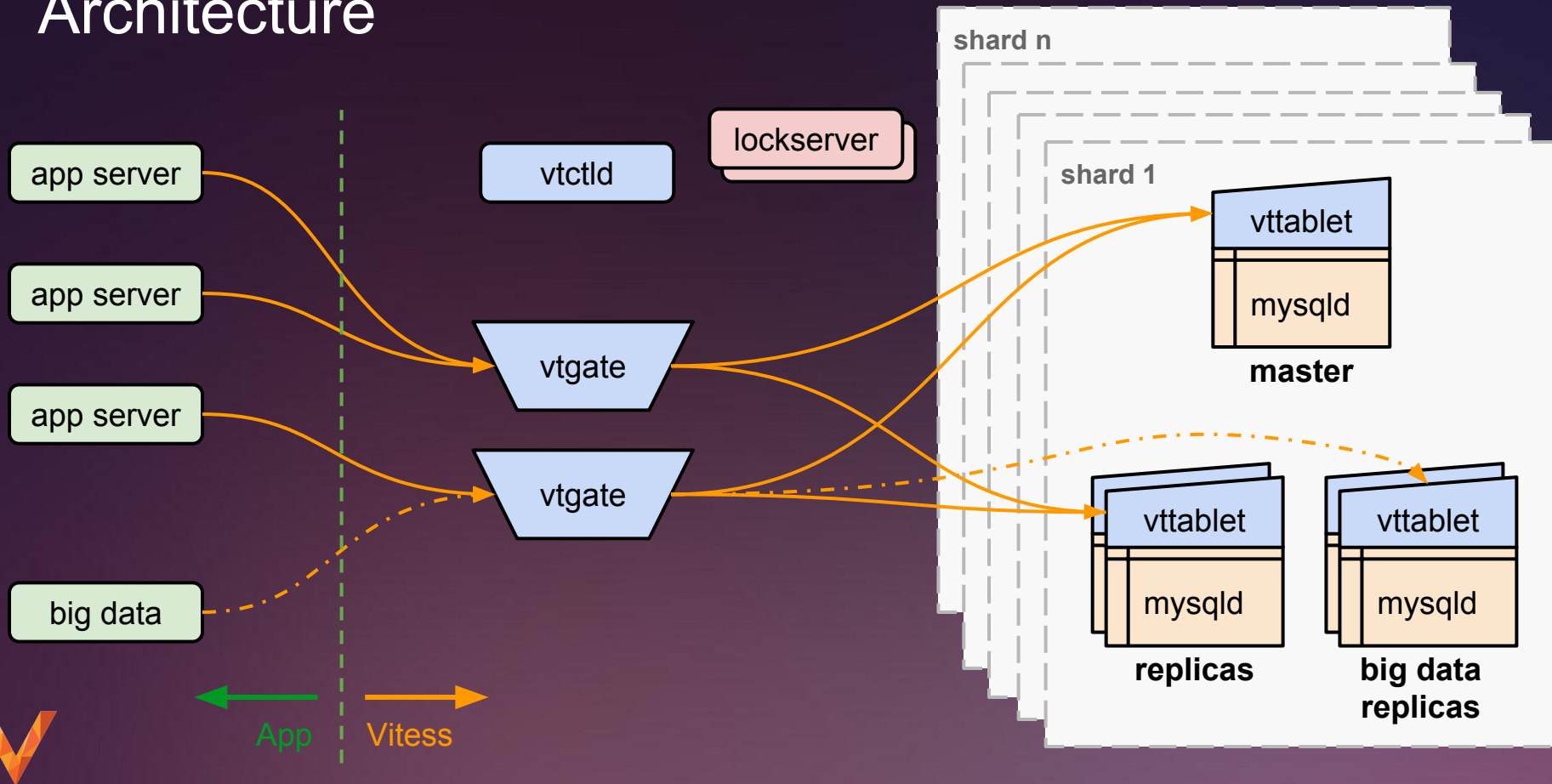
# Growing with Vitess



# ALL YOUR DATABASE



# Architecture





# Sharding concepts

## VTGate

- VSchema
- Primary Vindex
- Secondary Vindex
  - Unique
  - Non-unique
- Shared Vindex
- Sequences

## Database

- Schema
- Primary Key
- Secondary Key
  - Unique
  - Non-unique
- Foreign Key
- Auto-increment

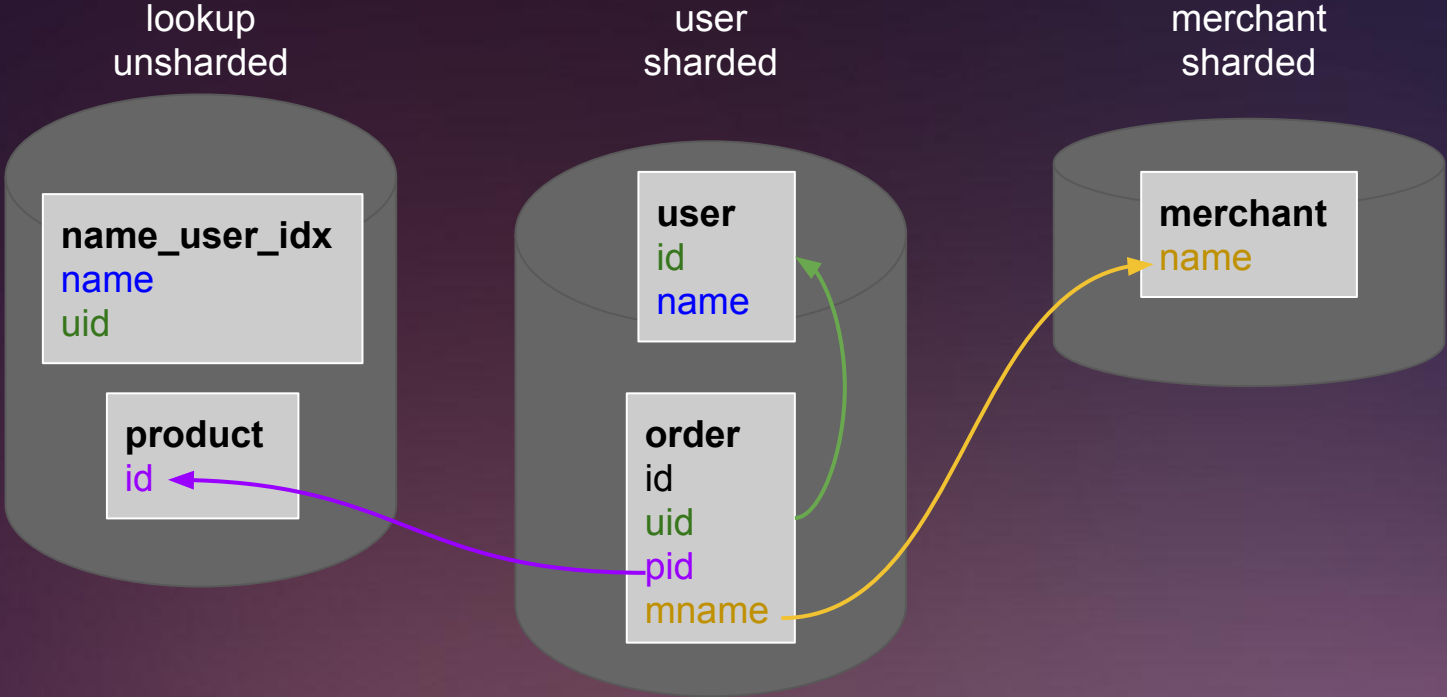


# Resharding

- No downtime
- Vertical and Horizontal
- Splits and Merges
- Checks and balances



# Demo



# Questions?

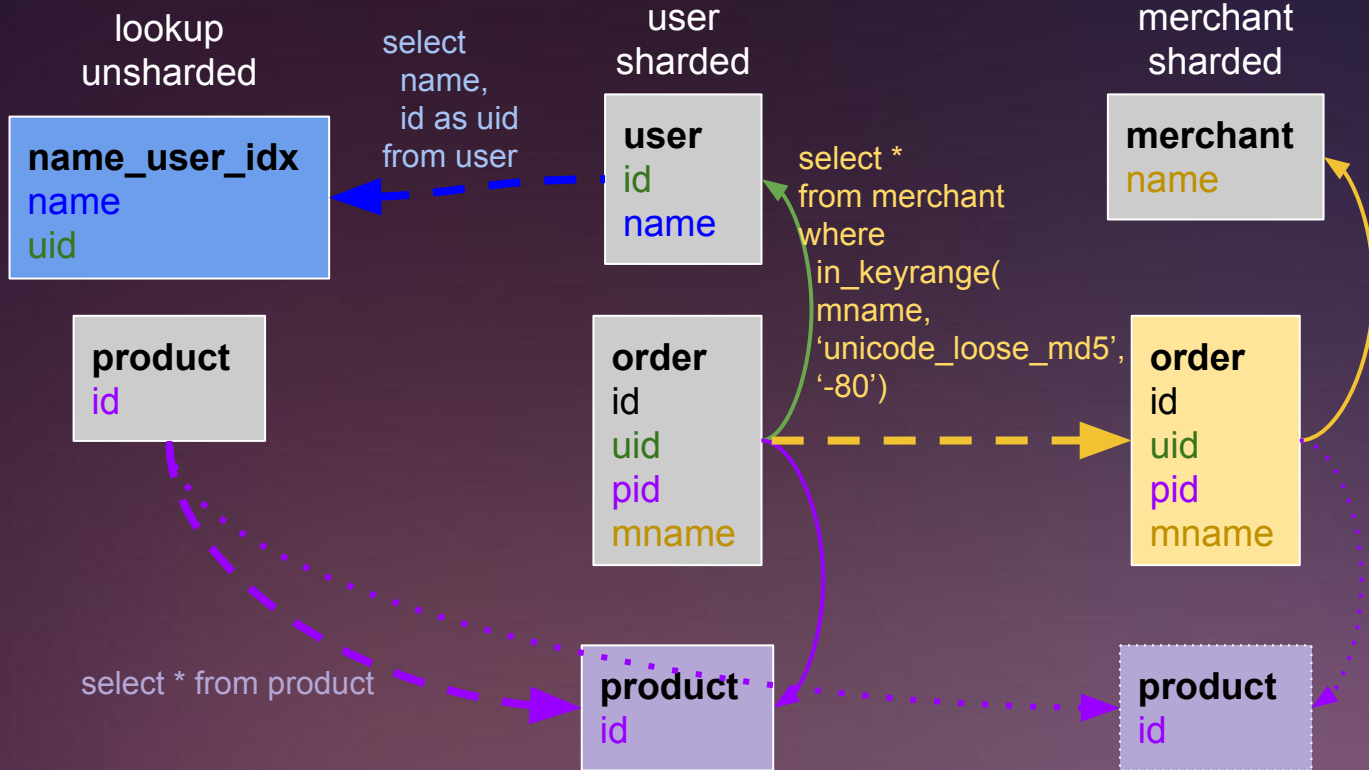
- Sign into slack channel at [vite.io](https://vite.io)
- Try bringing up a cluster on your laptop or kubernetes
- GH: <https://github.com/vite/vite>



# Appendix



# Demo



# DB Protection

- Connection pools
- Hot rows
- Damage control
  - Row-count limit
  - Time limit
  - Transaction time limits
- Blacklisting



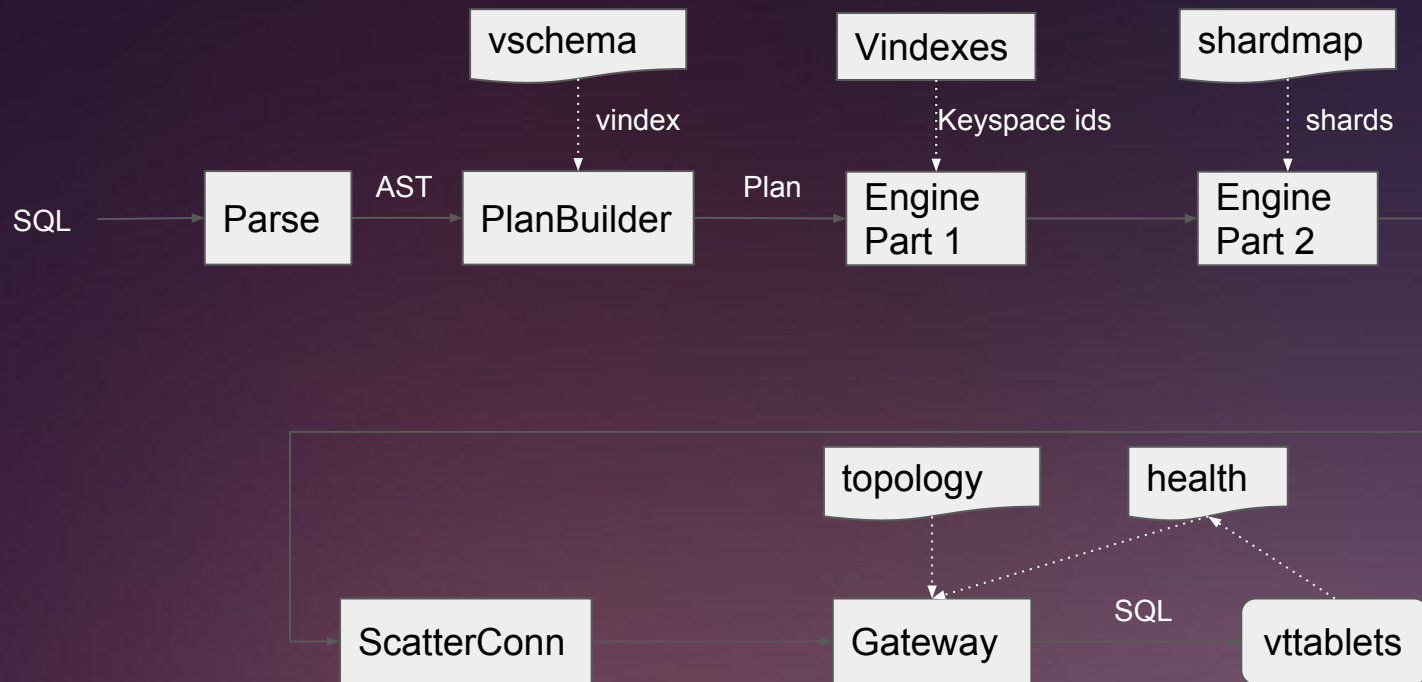
# Observability

- Stats end points
- Per-query stats
- Querylog





# Life of a Query: VTGate



# Life of a Query: VTablet



# Roadmap

- Materialized views
- Real-time rollups
- VSchema-based resharding
- Full cross-shard SQL support

