

Upgrading to MySQL 5.6 @ Scale

14 April 11:30AM - 12:20PM
Ballroom E

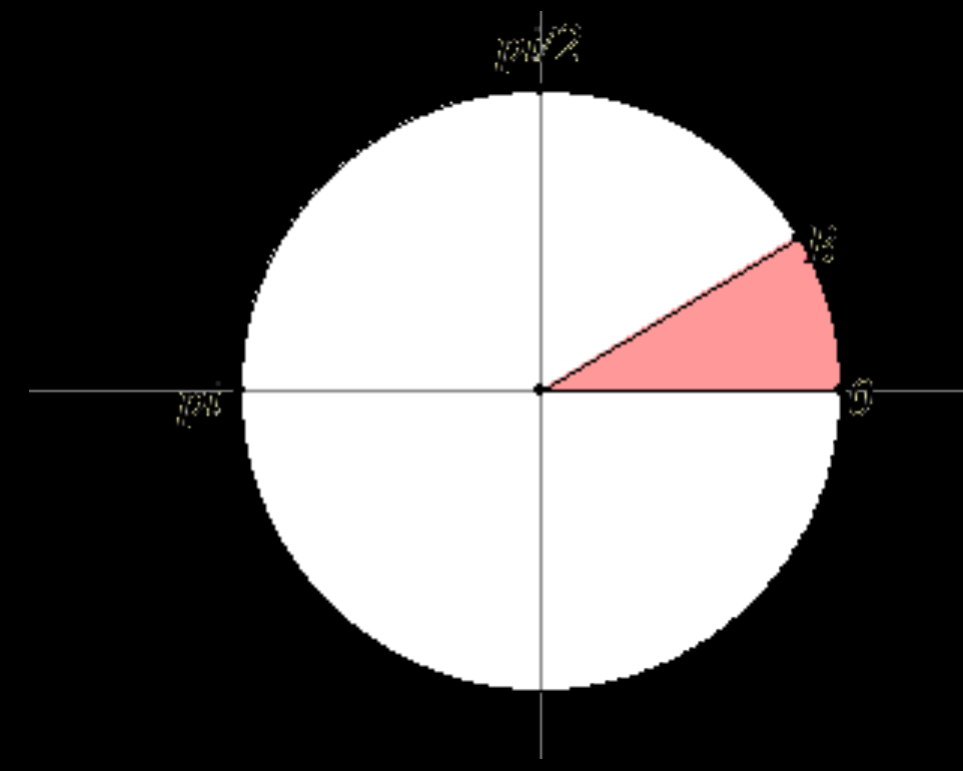
#PerconaLive
2015



Who am I?

- **Jonah Berquist**
@hashtagjonah
- **Senior Database Administrator at Twitter**

Who am I?



- **Tom Krouper**
@CaptainEyesight
- **Former Staff DBA at Twitter**
- **MySQL DBA ~ 10 years**



Agenda

- **Why Upgrade?**
- **Infrastructure**
- **Upgrade Process**
- **Issues & Bugs**
- **Status**



Why Upgrade?

- Online DDL
- Compression
- GTID
- Parallel Replication
- Performance Improvements
- WebscaleSQL
- General improvements





Infrastructure

- **Clusters**
- **Roles**
- **Shards**
- **Replication**
- **Gizzard**

Roost Cluster:

db.roost.master
db.roost.slave.app
db.roost.slave.analytics
db.roost.standby
db.roost.hub

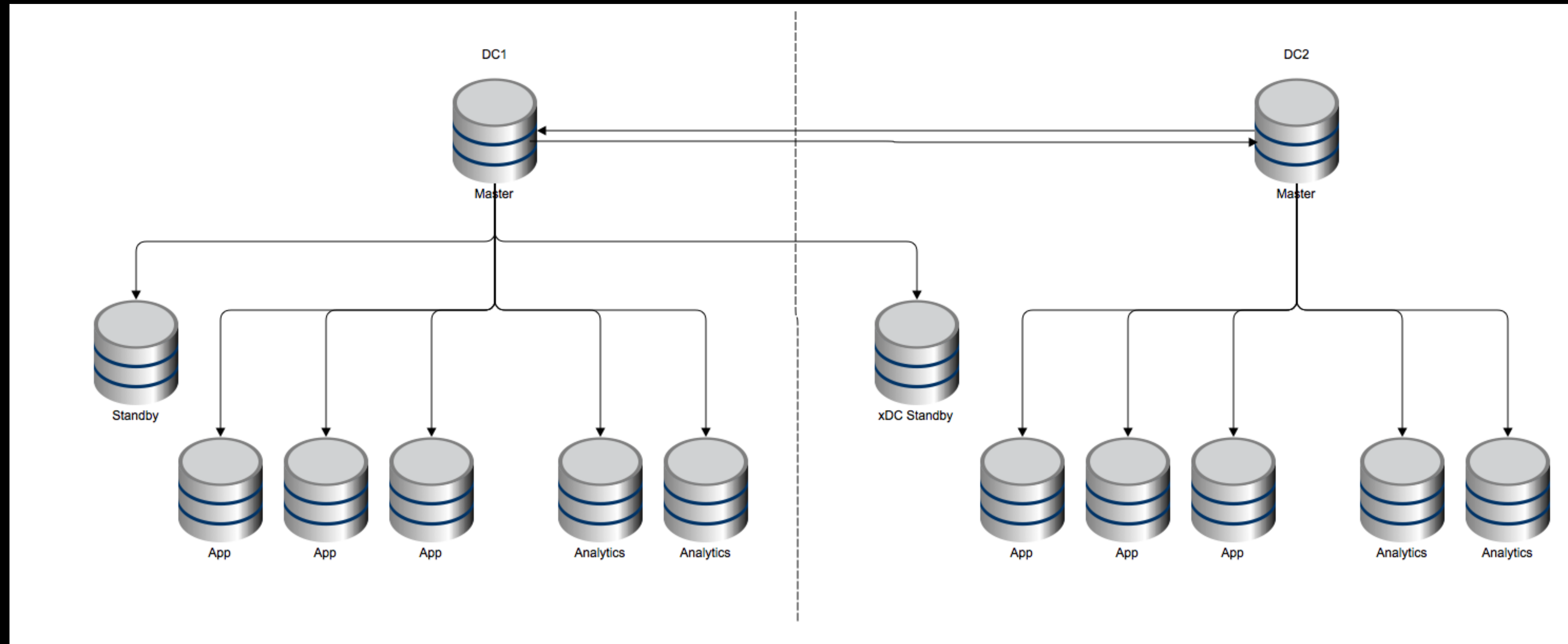
TBird Cluster:

db.tbird.gizzard:000
db.tbird.gizzard:001

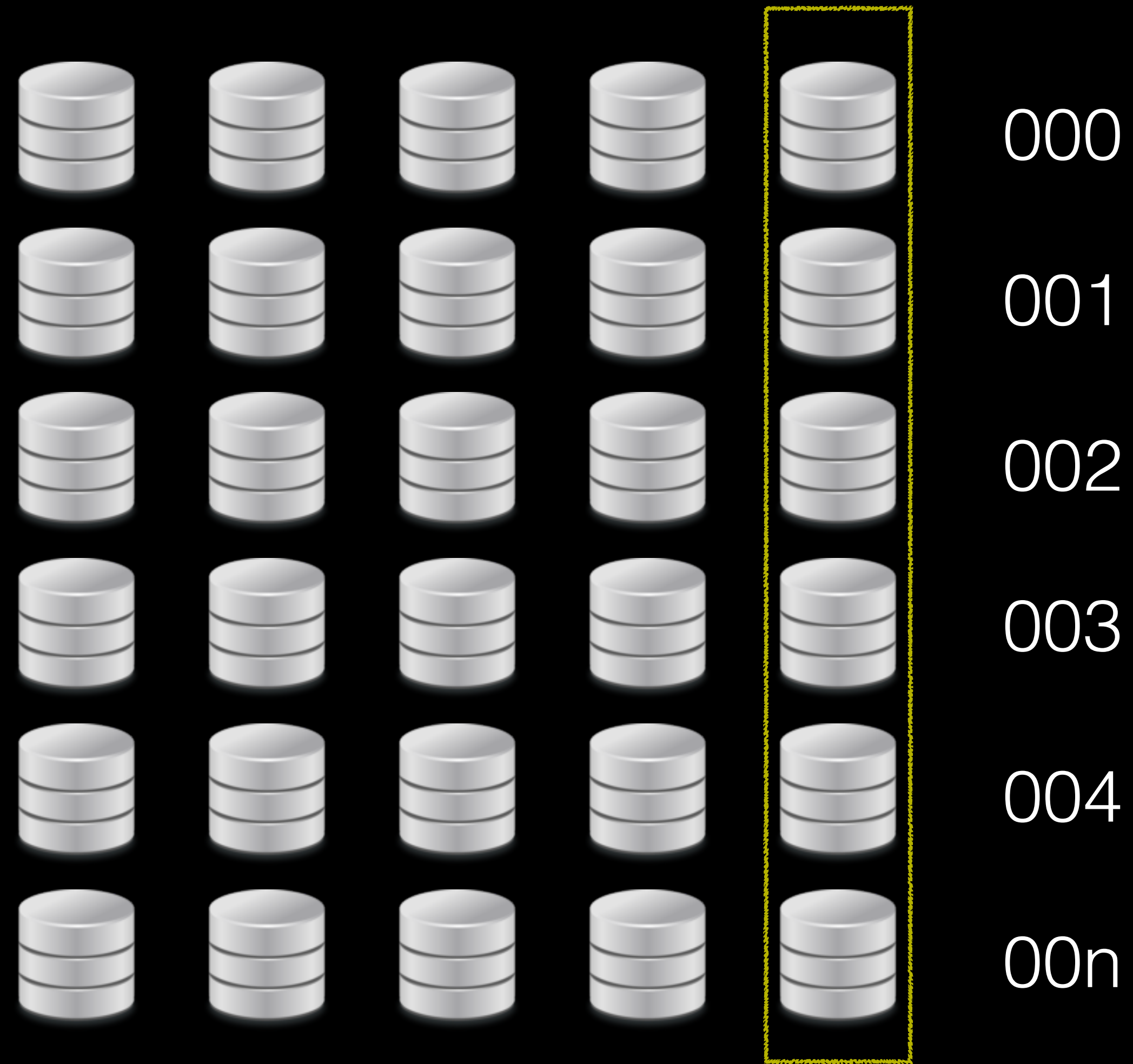
7



#Replication



#Gizzard





Upgrade Process

- Initial Testing/Benchmarking



11



Upgrade Process

- **Bake in process**
 - Read Replicas
 - Gizzard Shard
 - Development Cluster

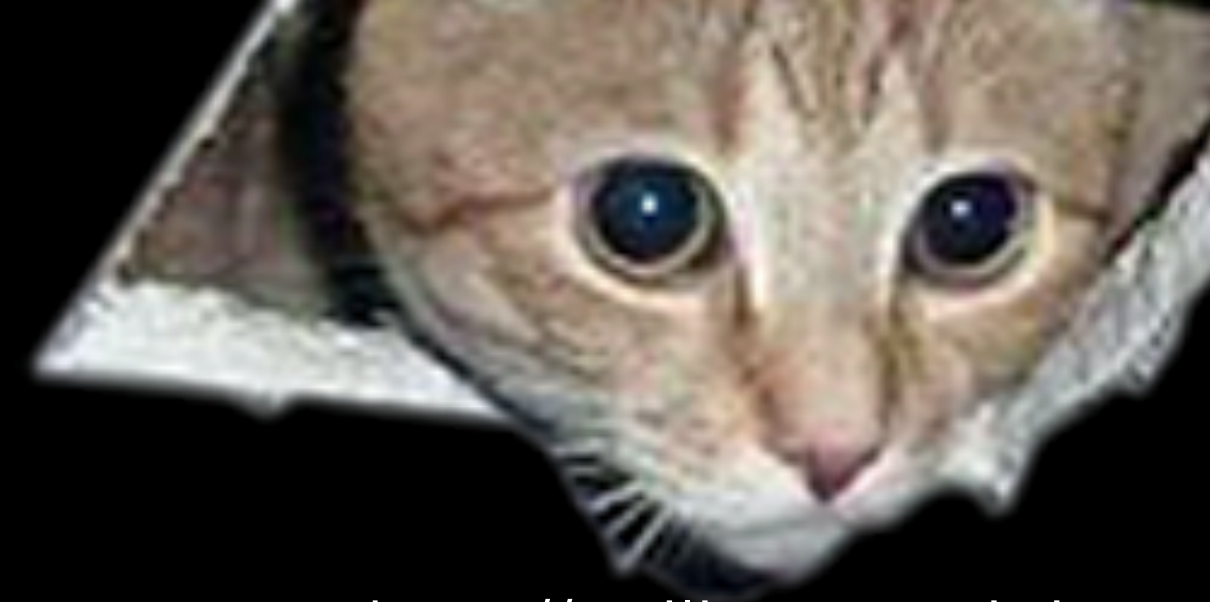


12



Upgrade Process

- Tooling: Ansible



<http://ceilingcat.ninja>



13



Ansible

- <http://www.ansible.com>
- Agentless (uses SSH)
- Upgrading multiple servers at once
- Skip already upgraded boxes
- Rules in place to deal with different roles
- Verified upgrades



Upgrade Process

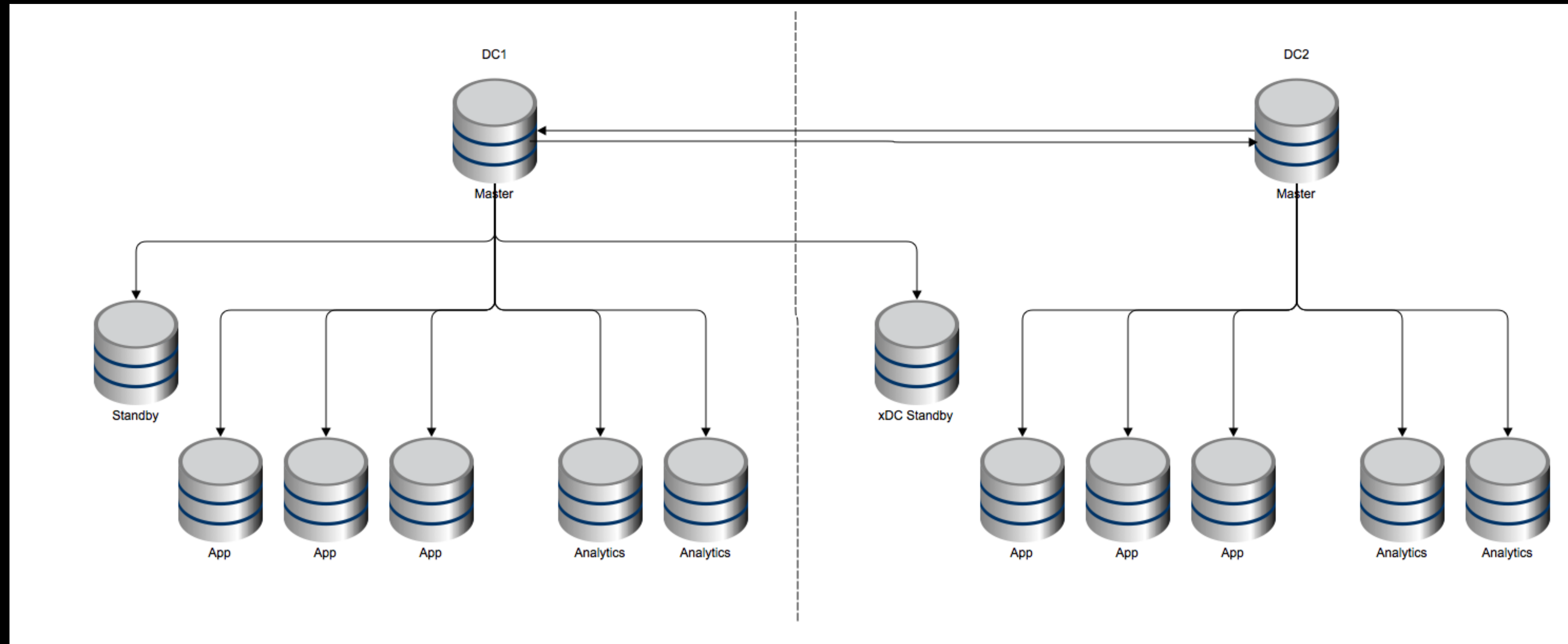
- Replication Upgrades



15



#Replication



Upgrade Process

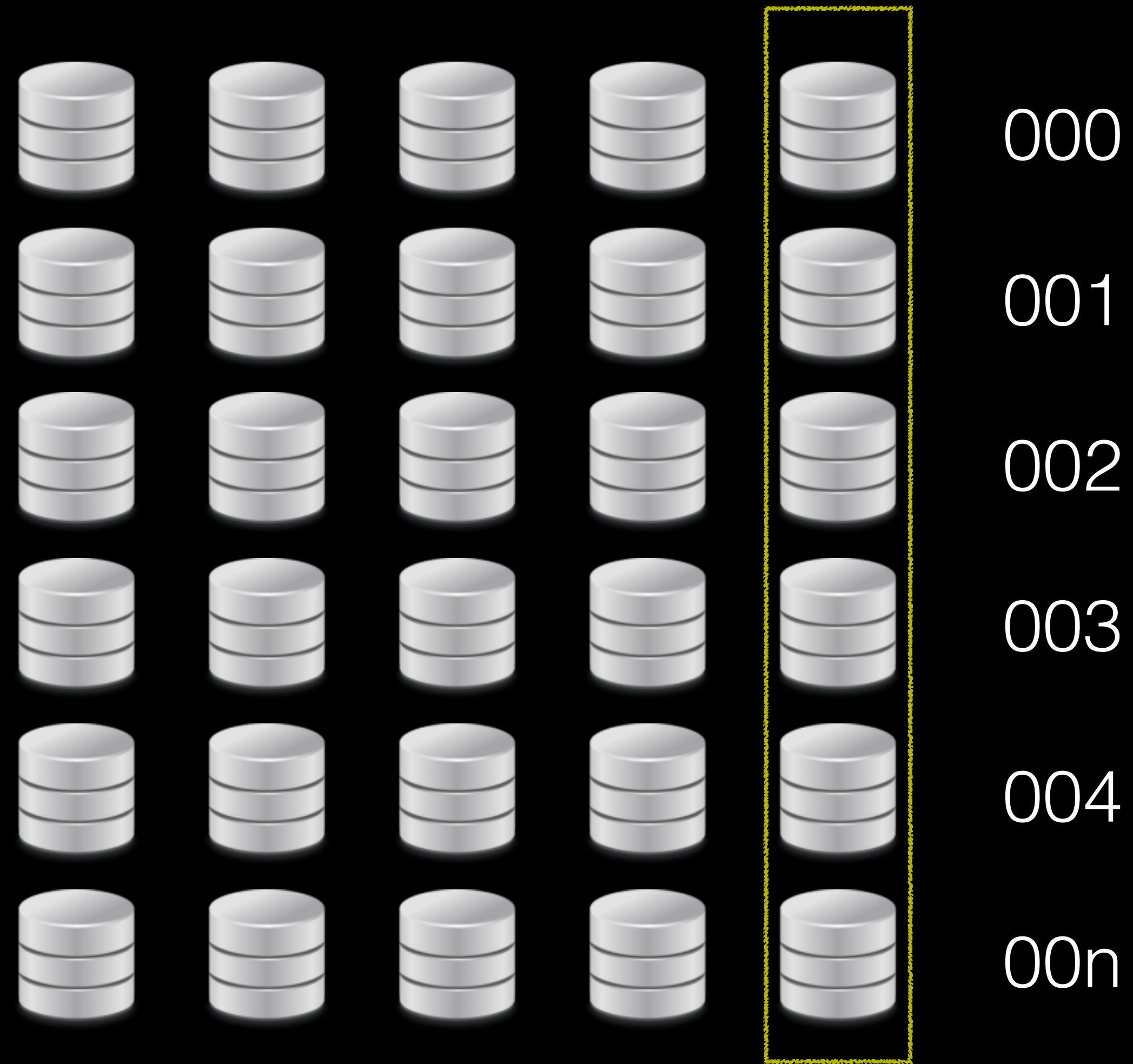
- Gizzard Upgrades



17



#Gizzard



18





Issues & Bugs

- **Replication breakage on 5.6.21 (Bug #19704825)**
 - temporary tables were released too early



Issues & Bugs

- **Parallel Replication**
 - multi-threaded slaves w/large events



Issues & Bugs

- `explicit_defaults_for_timestamp`



Issues & Bugs

- Query regression



Issues & Bugs

- **Buffer pool dump & restore (Twitter's vs. 5.6)**



Issues & Bugs

- Backups done on 5.5 using LVM snapshots



Issues & Bugs

- timestamp/datetime format change



Issues & Bugs

- **5.0 client errors on 5.6 server**
 - SET OPTION SQL_QUOTE_SHOW_CREATE=1;





Status

- **~80% of the hosts upgraded**
 - mostly replicated clusters left to upgrade

Status

- **Using parallel replication and GTID on new shared cluster.**
 - Still need to upgrade GTID on existing cluster in production
 - GTID upgrade done in test environment
 - Webscale Patches
 - Heartbeat issues



Status

- Roll out compression





32



@TwitterDBA | Upg

#ThankYou

Tom Krouper
@CaptainEyesight

Jonah Berquist
@hashtagjonah

MySQL at Twitter - 2015
15 April 4:30PM - 5:20PM
Ballroom G

#Questions?

33

