

ORACLE

# 20 years of operating and scaling MySQL at Booking.com

- Nicolai Plum
- Senior Database Engineer
- Booking.com Ltd
- 22 July, 2025



# Booking.com origins



Flights to  
**4,500+**  
destinations  
worldwide

**360M+**  
verified guest  
reviews and  
**24/7**  
customer service  
in **45**  
languages and  
dialects

Since 2010,  
Booking.com has  
welcomed

**6.8B+**  
guest arrivals

**31M+**  
total reported  
listings  
worldwide

**8.1M**  
options in homes,  
apartments and  
other unique places  
to stay

**140** offices in **70** countries over  
**5,000** employees in Amsterdam

**30**  
different types of  
places to stay,  
including homes,  
apartments, B&Bs,  
hostels, farm stays,  
bungalows, even  
boats, igloos and  
treehouses

**175,000**  
destinations around the world

Travelers can pick up a car in over  
**45,000** locations, across **144**  
countries. We work with over **700**  
car rental suppliers across the globe.

Curated bookable  
attractions and  
experiences in over  
2,300 cities

Booking.com  
today

# MySQL for 20+ years

- Read scale-out via replication
- Speed
- High reliability
- Easy, flexible administration

# Not only MySQL

- Platforms
- Databases
- Data
- Applications

# Platforms - Automated

- Provisioning via APIs
  - With dependencies, access controls, networking, security, compliance...
- Installation image or OS management or service instance creation
- Ongoing management
  - Don't re-install databases very often
- Many components to orchestrate

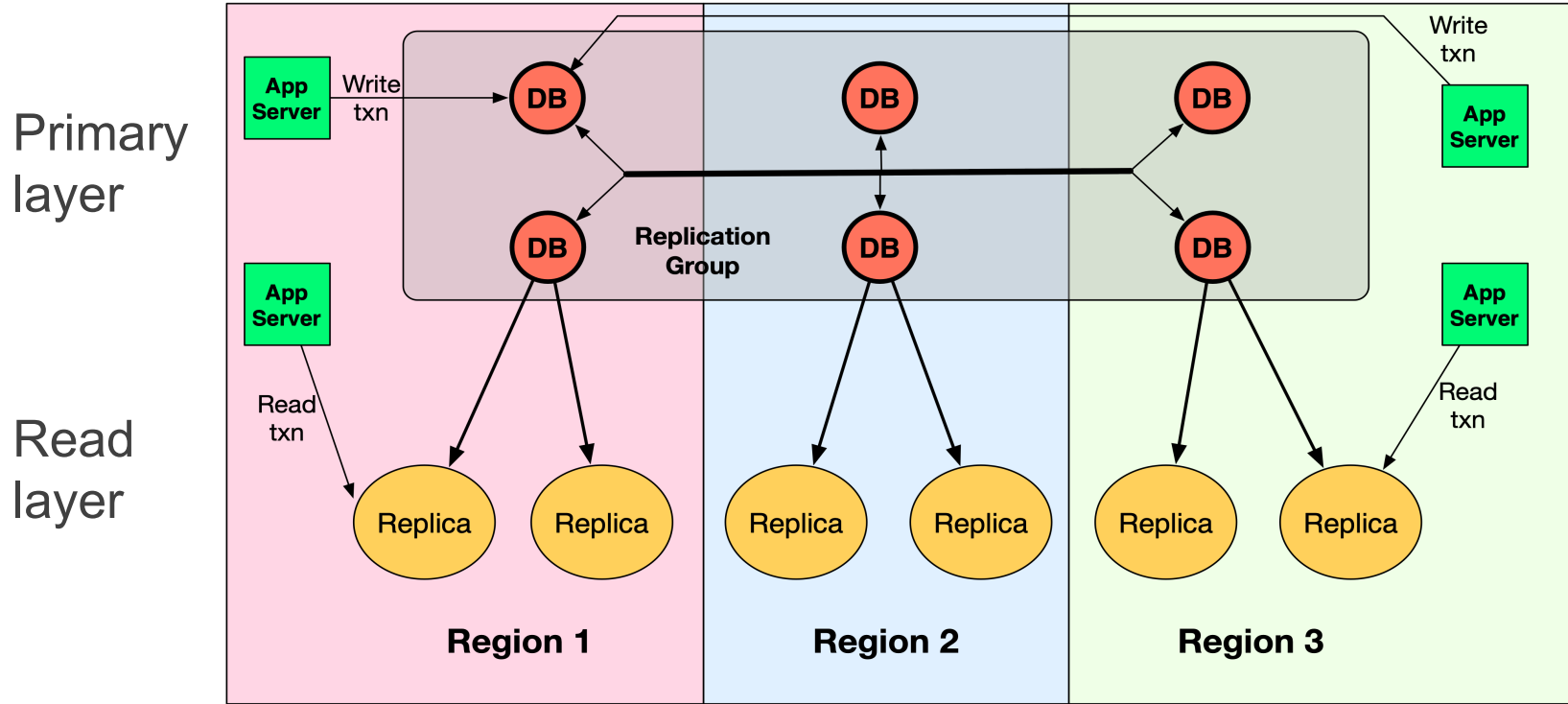
# Platforms

- Consistent
- Predictable
- Reliable
  - *Reasonably* stable and reliable
  - Cattle, not pets
    - Well-tended, pedigree cattle
- **Automated**

# Databases – actual MySQL

- Replication for reliability and scalability
  - There cannot be only one
- Group Replication or equivalent
- Automated data copying (cloning) and setup
- Automated configuration
  - Including online parameters

# MySQL GR Deployment

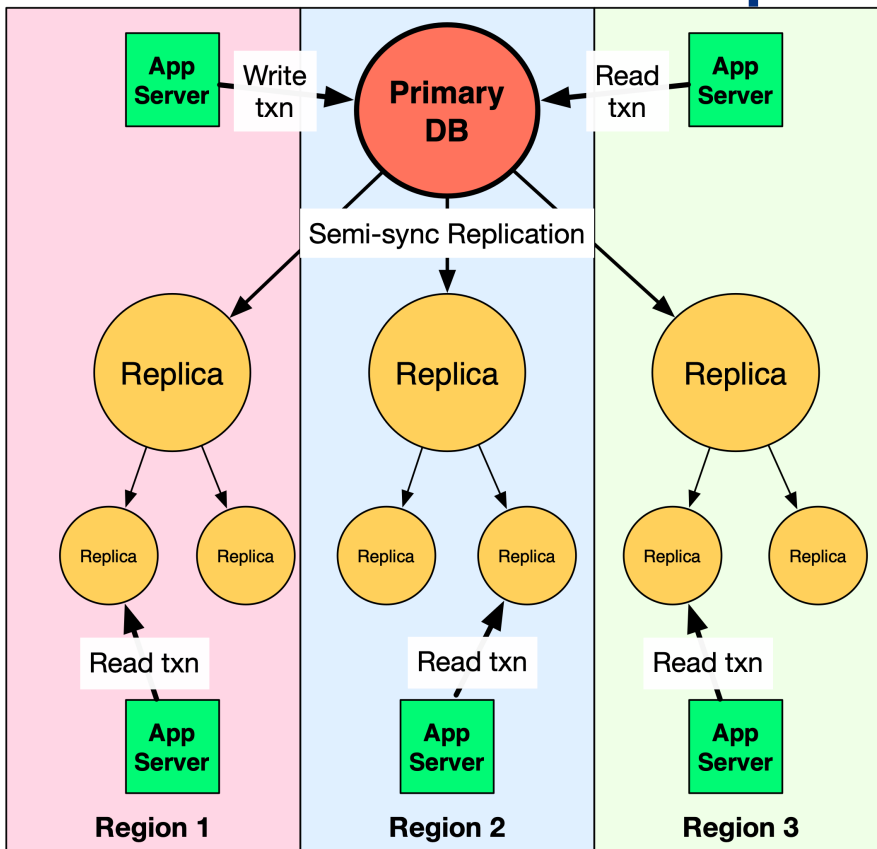


# MySQL Classical deployment

Primary layer

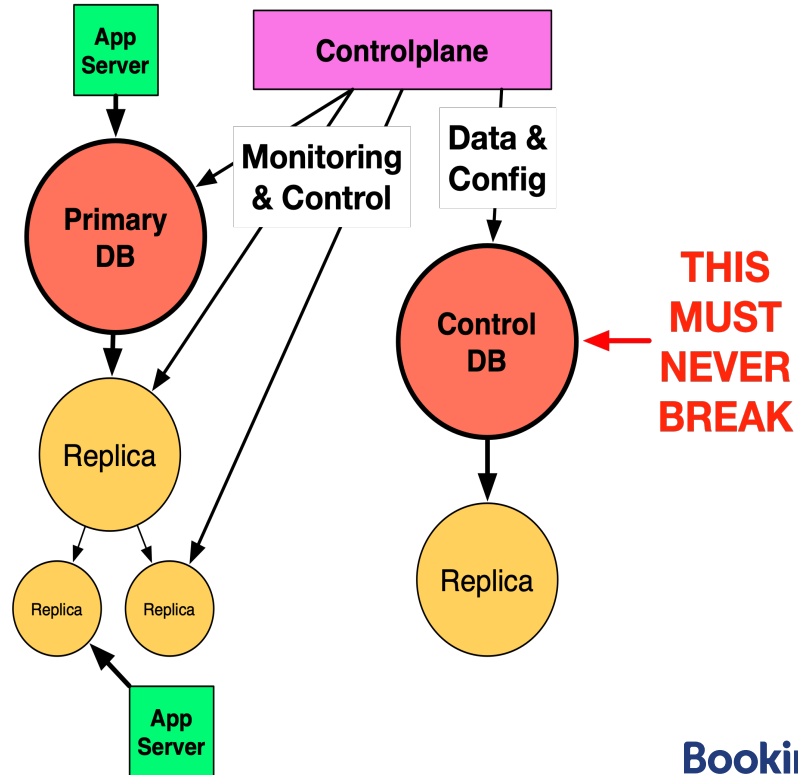
Intermediate & Standby layer

Read layer



# Managing MySQL at scale: It's Databases all the way down!

- Management tools use MySQL
- ... which must never break?
- Use clustering or alternate datastore



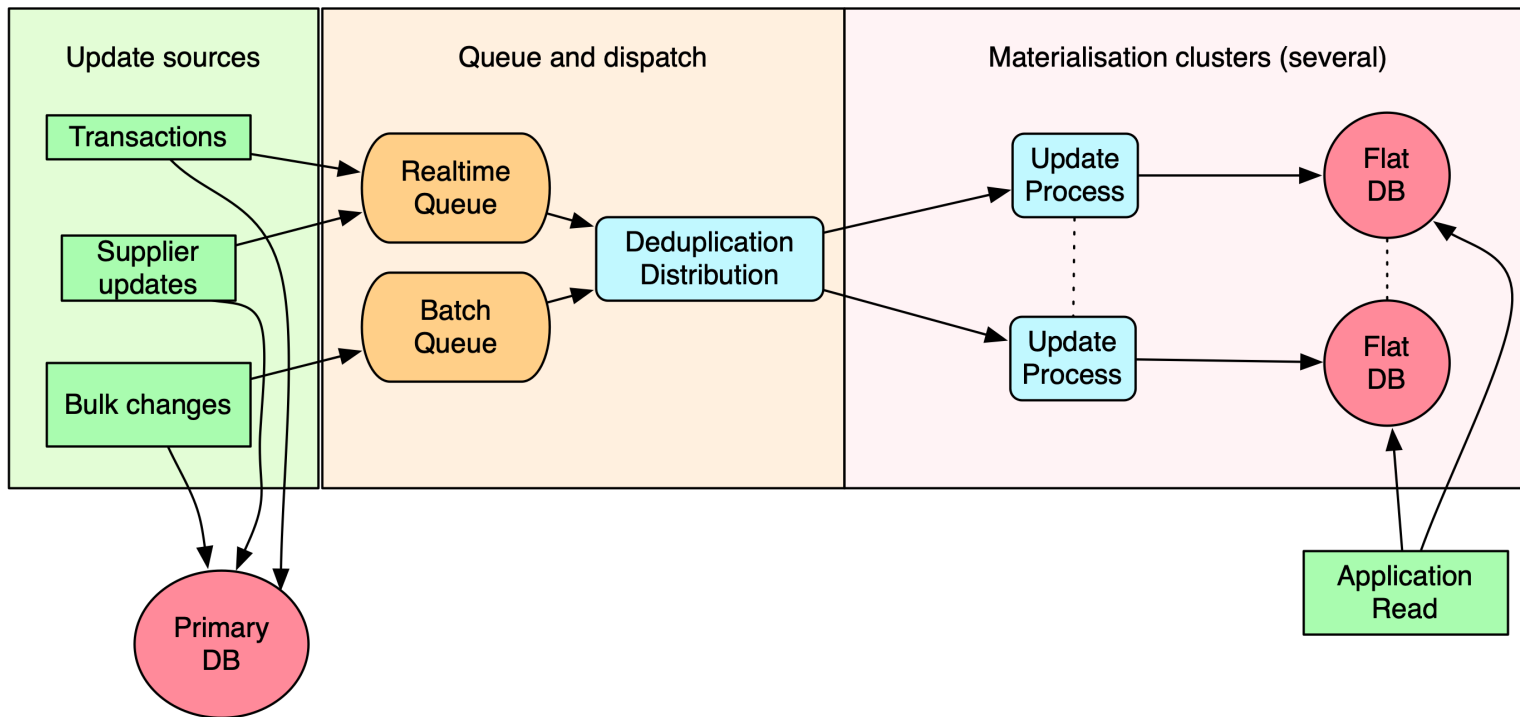
# Data and Data Models

- Developer-led data models
  - Self-service for schema changes
  - Self-service for application access to data
  - Tools for guidance and compliance
  - Architecture advice and consultancy
- Data model change is hard without downtime
  - Online schema changes
  - Application feature switches

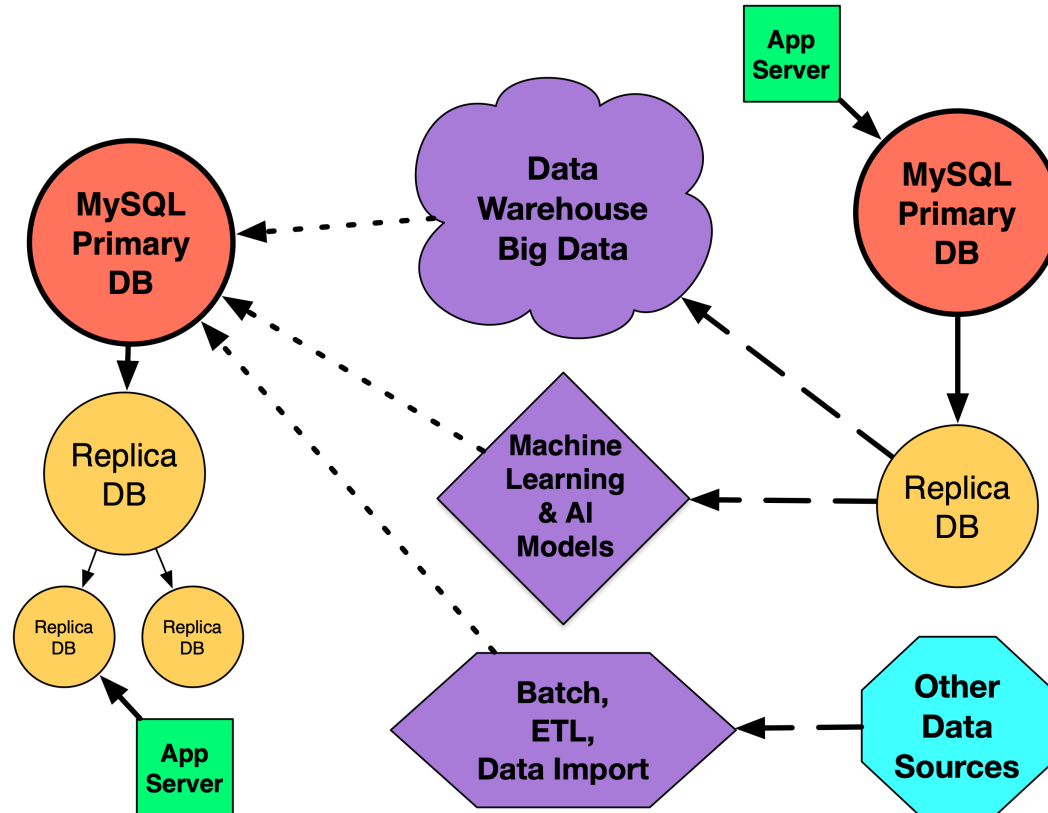
# Data and Data Models

- Multiple data models
  - Relational + Document
  - Write-optimized & Materialised Read-optimized
- Process big data in ML/Warehouse and transfer to MySQL

# Materialised data models



# ML, AI, Data Warehouse



# Applications

- Service discovery integration
  - Dependant on available Platform features
  - Anycast or network routing
  - DNS lookup
  - Other directory services
- Avoid constructing bad queries
  - Prefer Primary Key lookup
  - Query time limits, size limits
  - Avoid wide joins and join on non-indexed columns

# Applications accepting imperfections

- Accept transaction failures
  - Deadlocks, Network connection drops, Application exceptions.
- Accept unreachable endpoint
  - During planned service changes or failure recovery
- Accept eventual consistency
  - Large-scale MySQL is a distributed, eventually-consistent data store

# Overview

- Relentless automation
- Unified controlplane
- Set developers up for success
- Devs, platforms, compliance, security:  
must set the database up for success too

# Success is more than Technology

- Agility is more important than perfection
- SLO mindset is essential:
  - 99.99% is 4m23s per month.
- Predicting the future is hard, so stay flexible
- Co-operation to achieve the common goal.
- Shared attitude for success is more important than the exact technology you use.

— Thank you