



第九届中国系统架构师大会  
SYSTEM ARCHITECT CONFERENCE CHINA 2017

# 云时代的数据库演变之路

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SACC  
2017

北京·新云南皇冠假日酒店



# 目录

- 数据库现状
- 面临的需求
- 生命周期管理
- 生存类需求
- 高阶需求
- 探索趋势

SACC2017

# 数据库现状

SQL

NO  
SQL

NewSQL

MySQL

ORACLE

redis

cassandra

PostgreSQL

Microsoft  
SQL Server

mongoDB

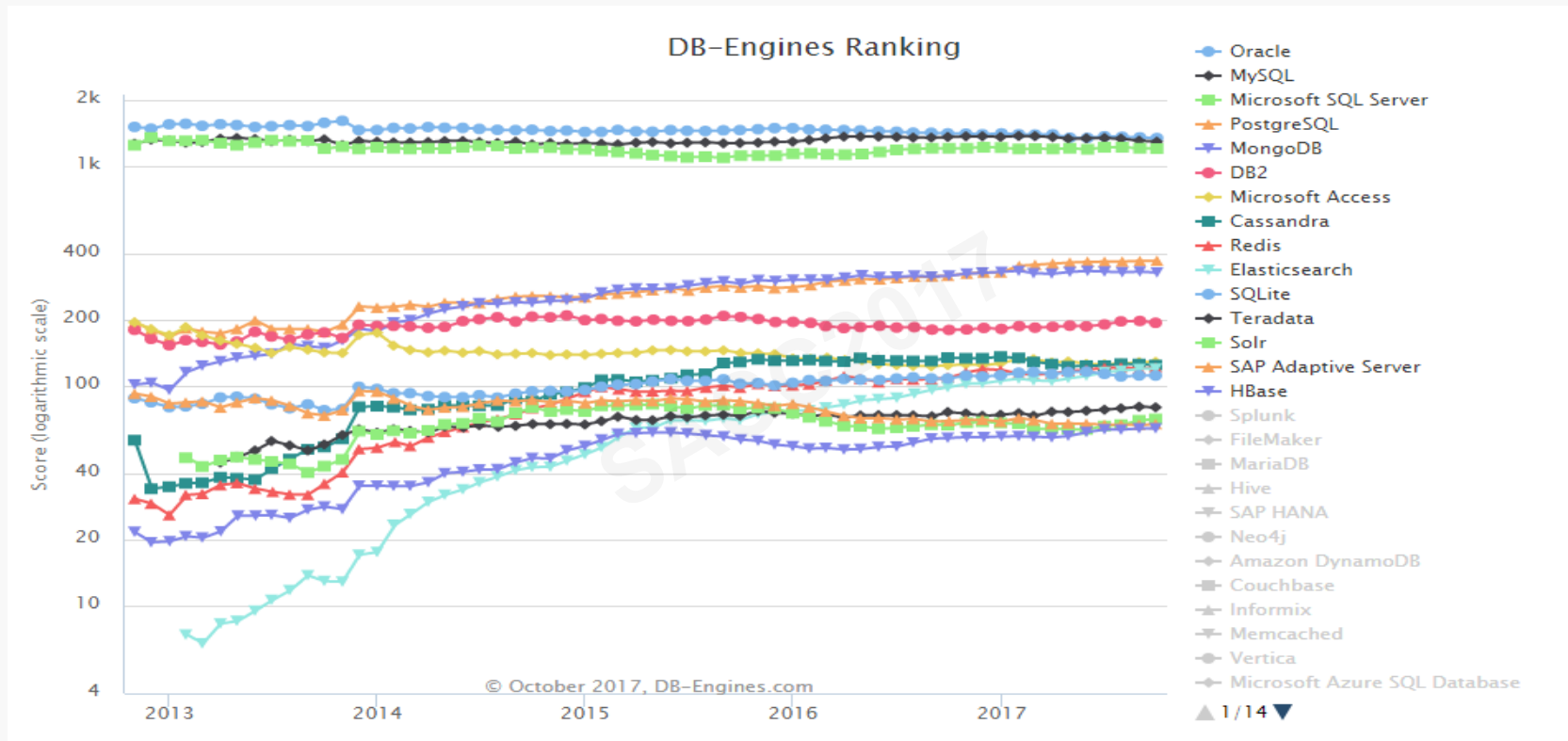
membase

IBM  
DB2

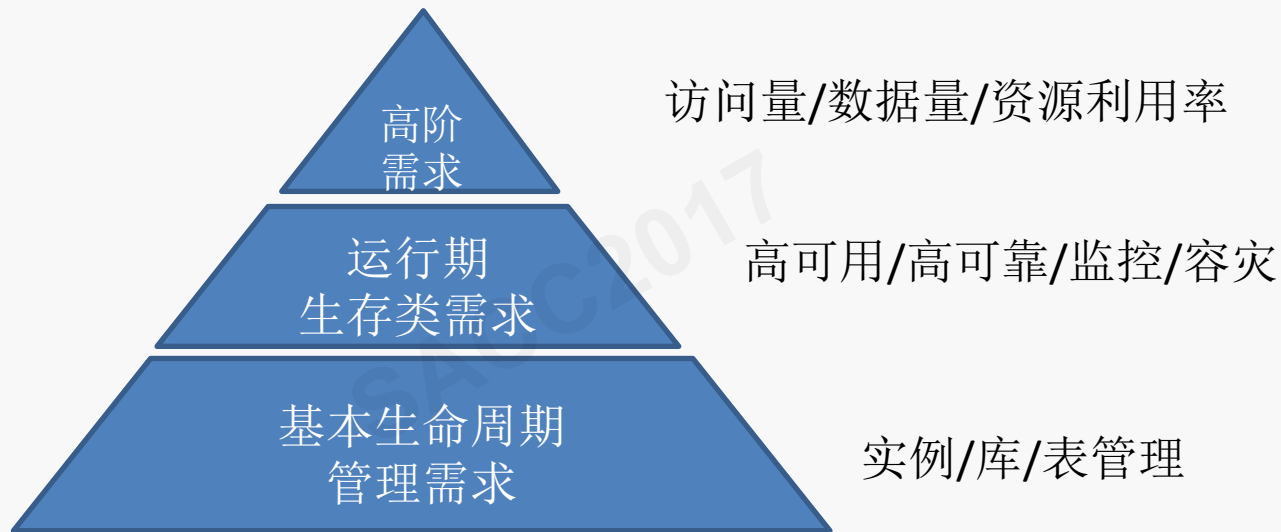
CouchDB  
relax

riak  
from the inside

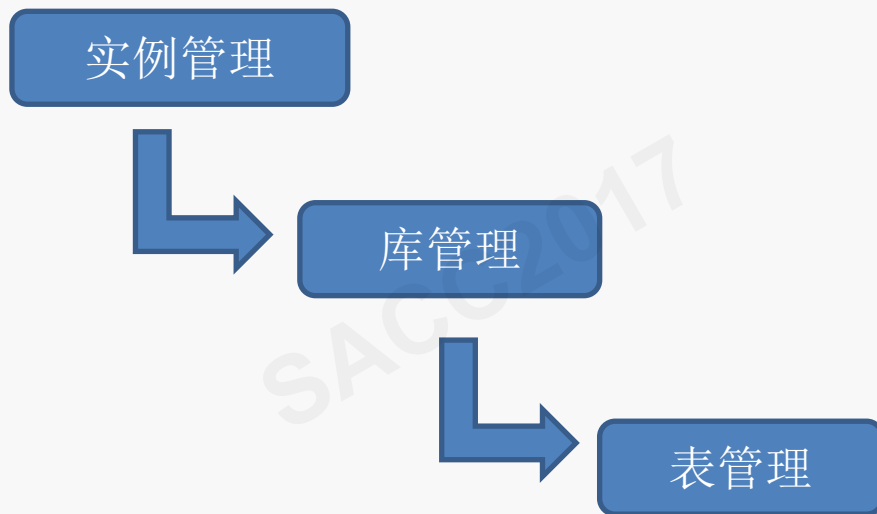
# 数据库现状



# 面临的需求



# 生命周期管理



# 生命周期管理

## ➤ 传统方式

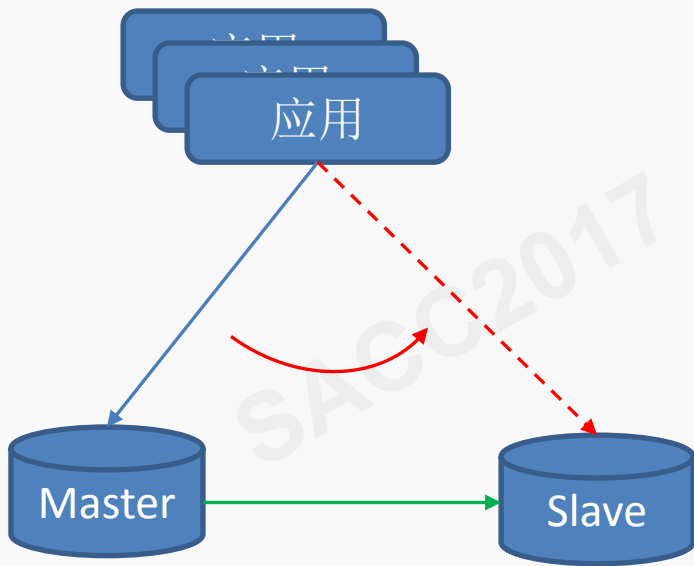
邮件申请，DBA手工执行

## ➤ 云

一键自动创建，分钟级搭建主从/秒级库表管理

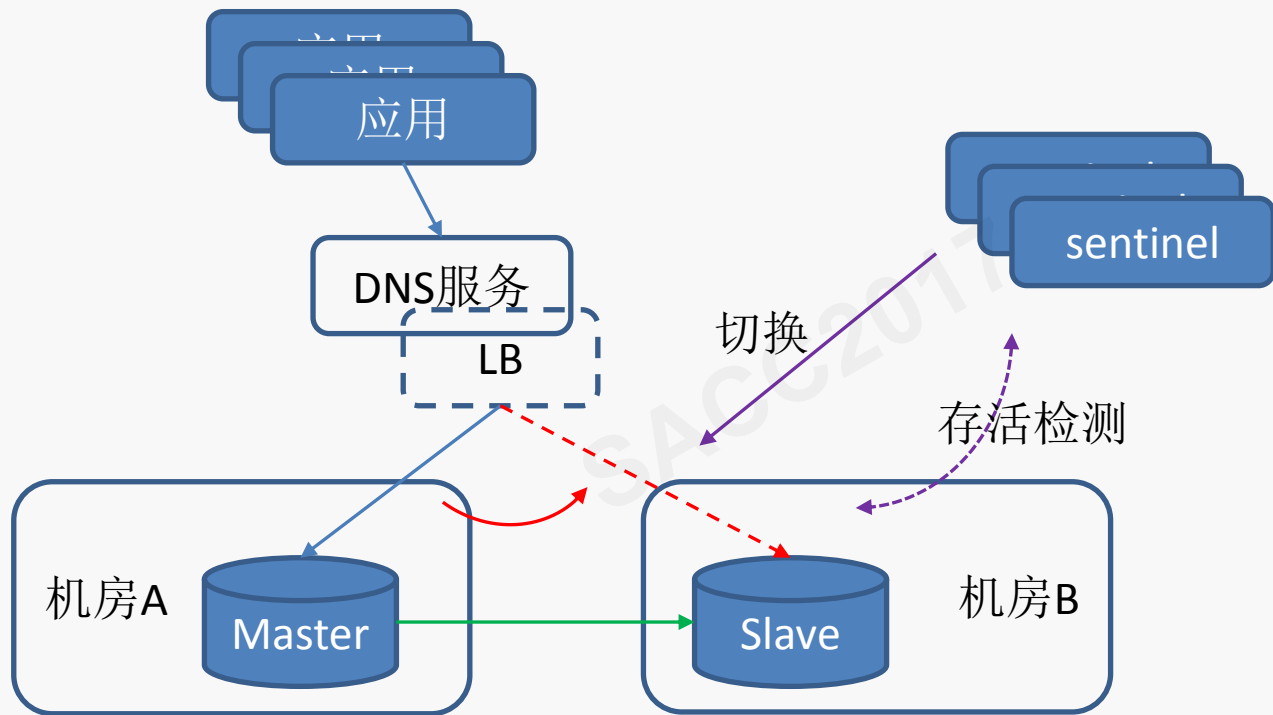


# 高可用

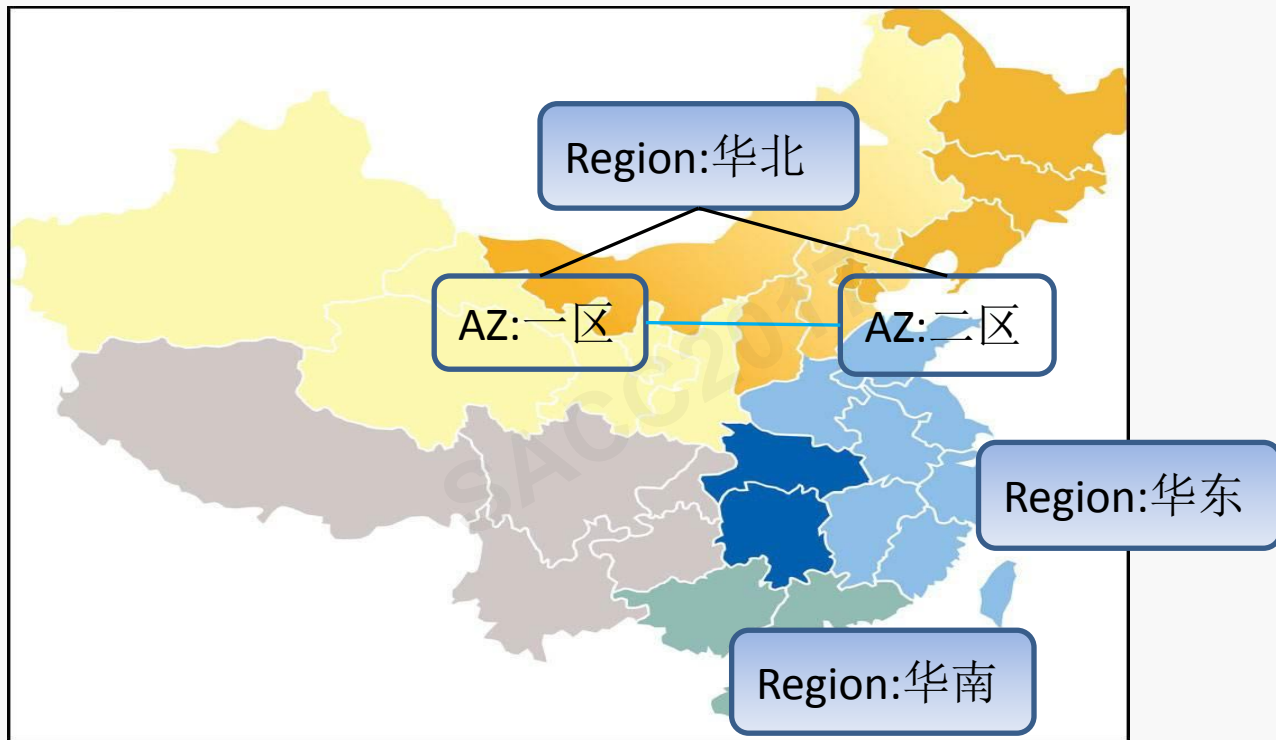




# 高可用



# 高可用



# 高可靠



# 监控

## 物理机/操作系统层面

- 存活/机器负载/CPU/内存/网卡/硬盘等

## 数据库层面

- 存活/主从/慢SQL/连接数等

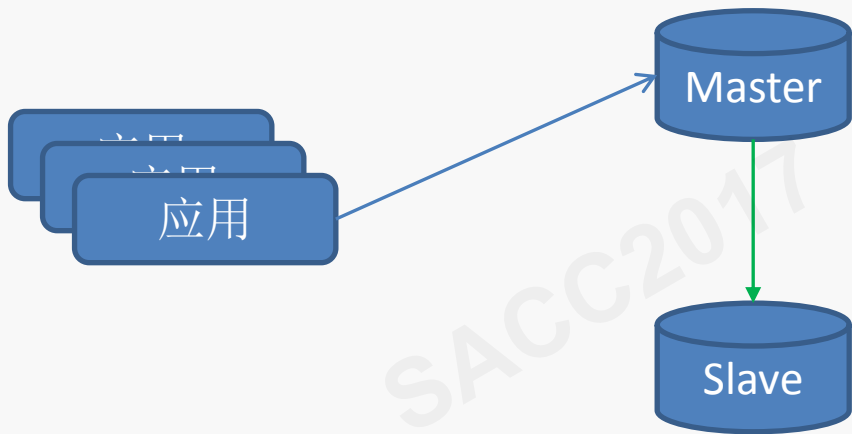
## 依赖系统

- DNS/LB/云存储/云监控/云主机/网络

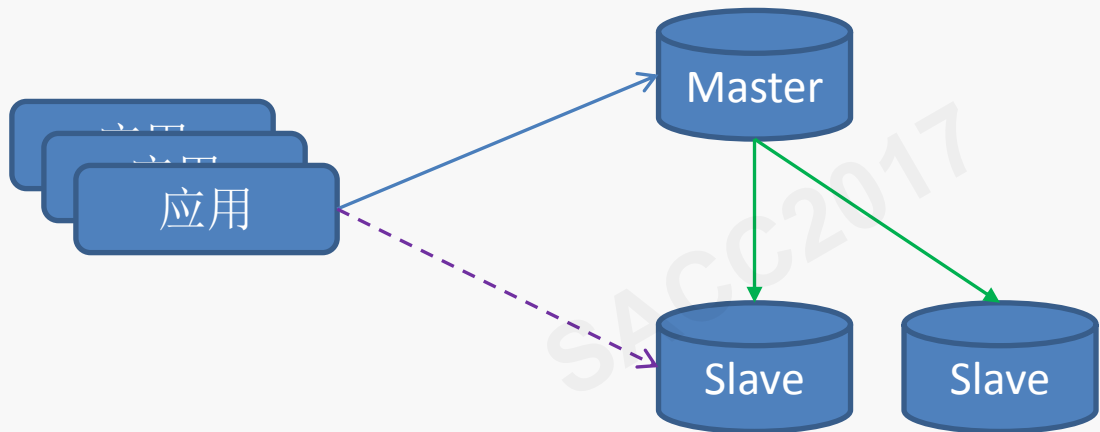
## 业务层面

- 生命周期管理功能监控/高可用、高可靠功能定时验证

# 访问量



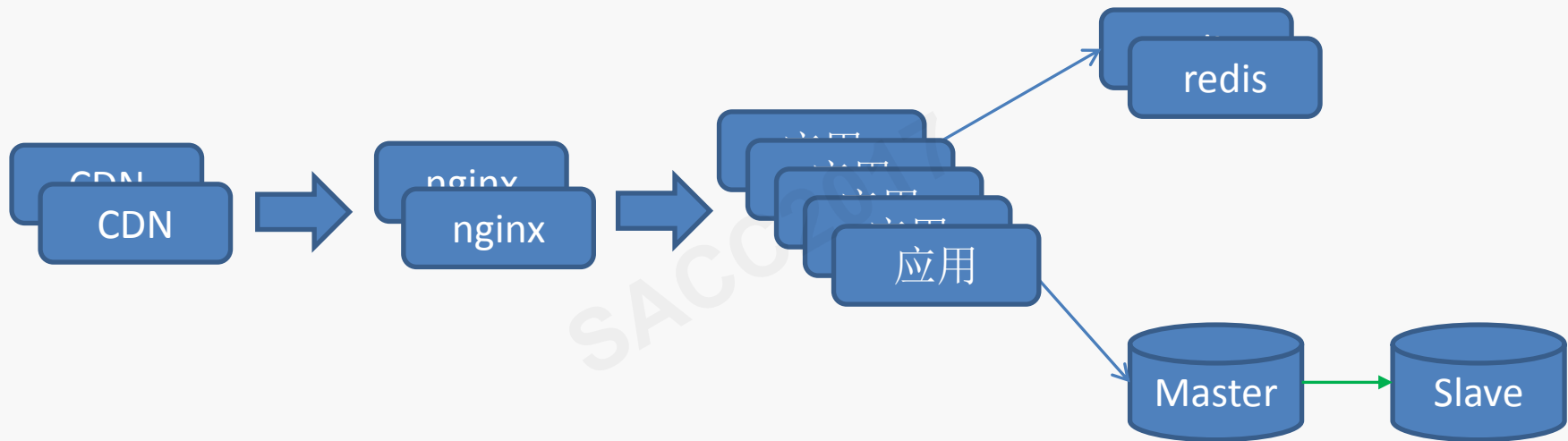
# 访问量



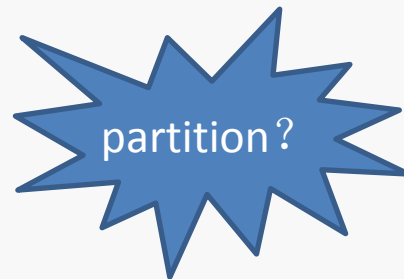
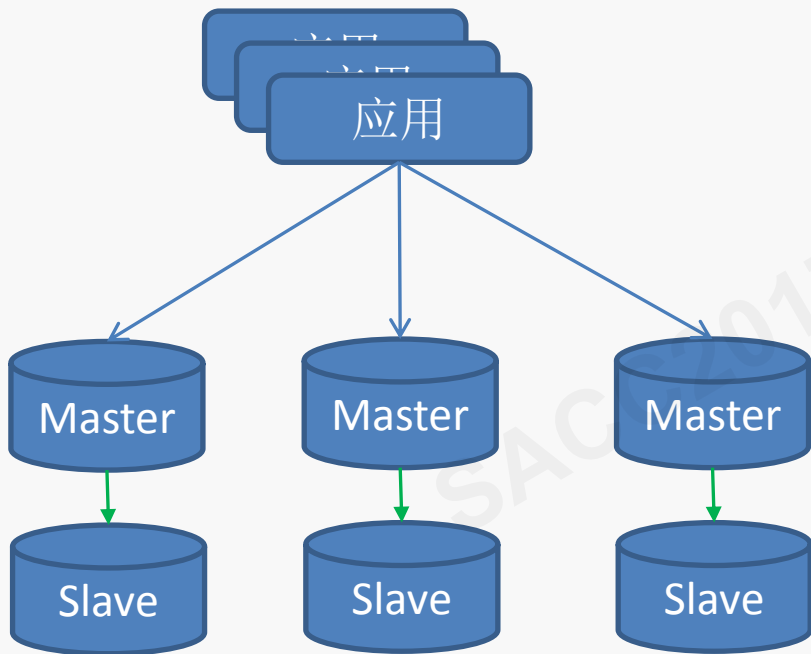
读写分离方案?

一主多从?

# 访问量

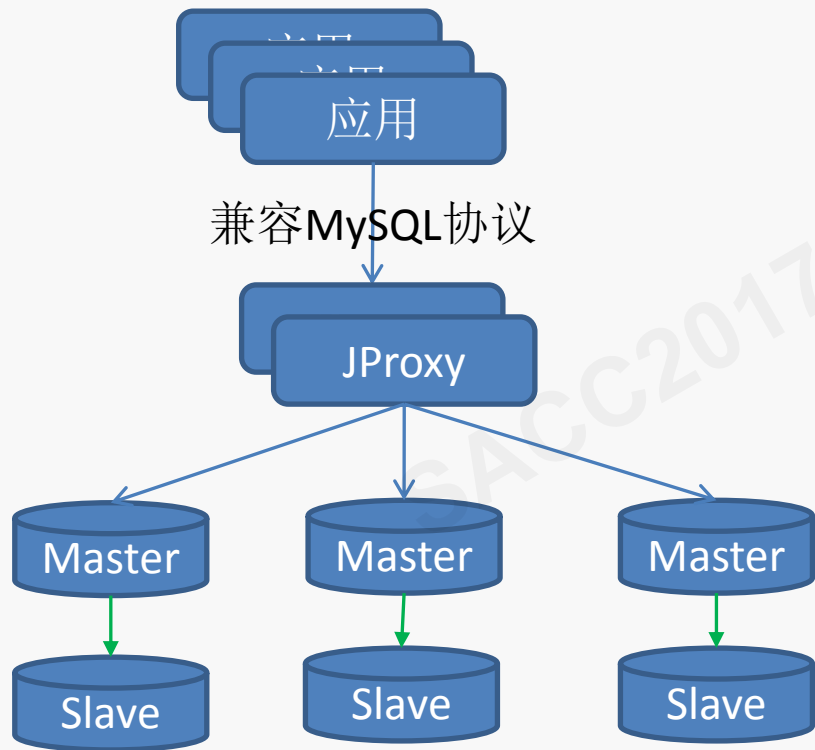


# 数据量

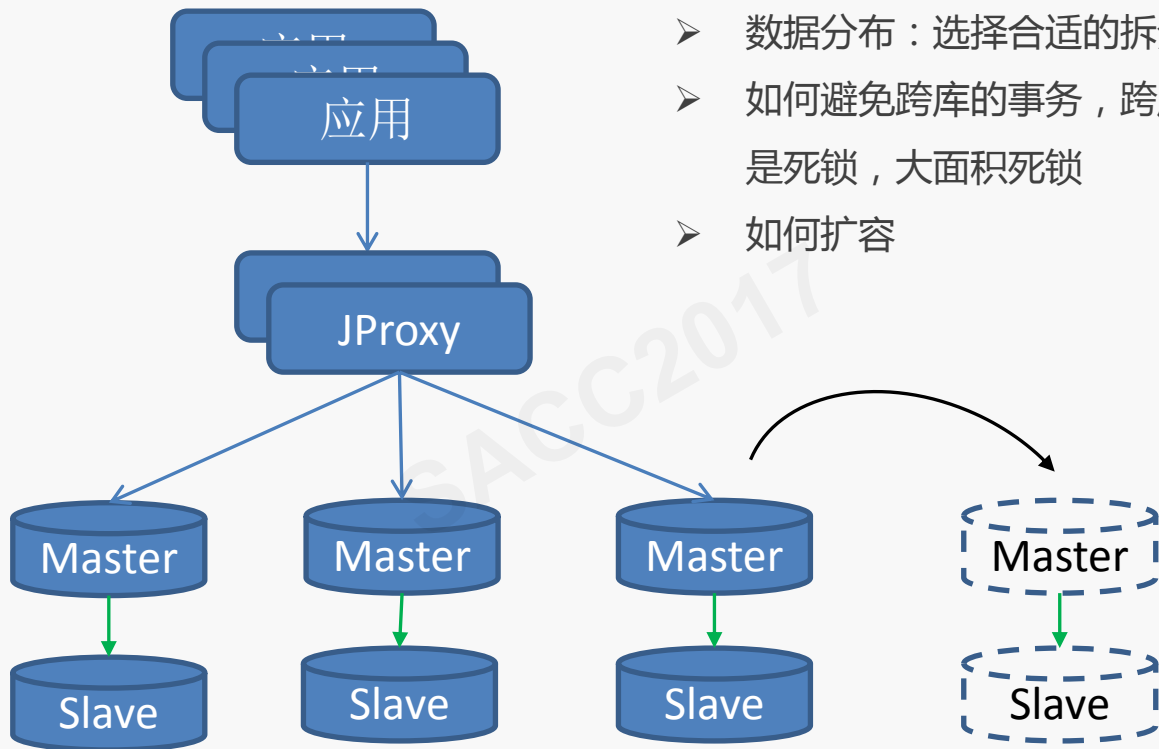




# 数据量



# 数据量



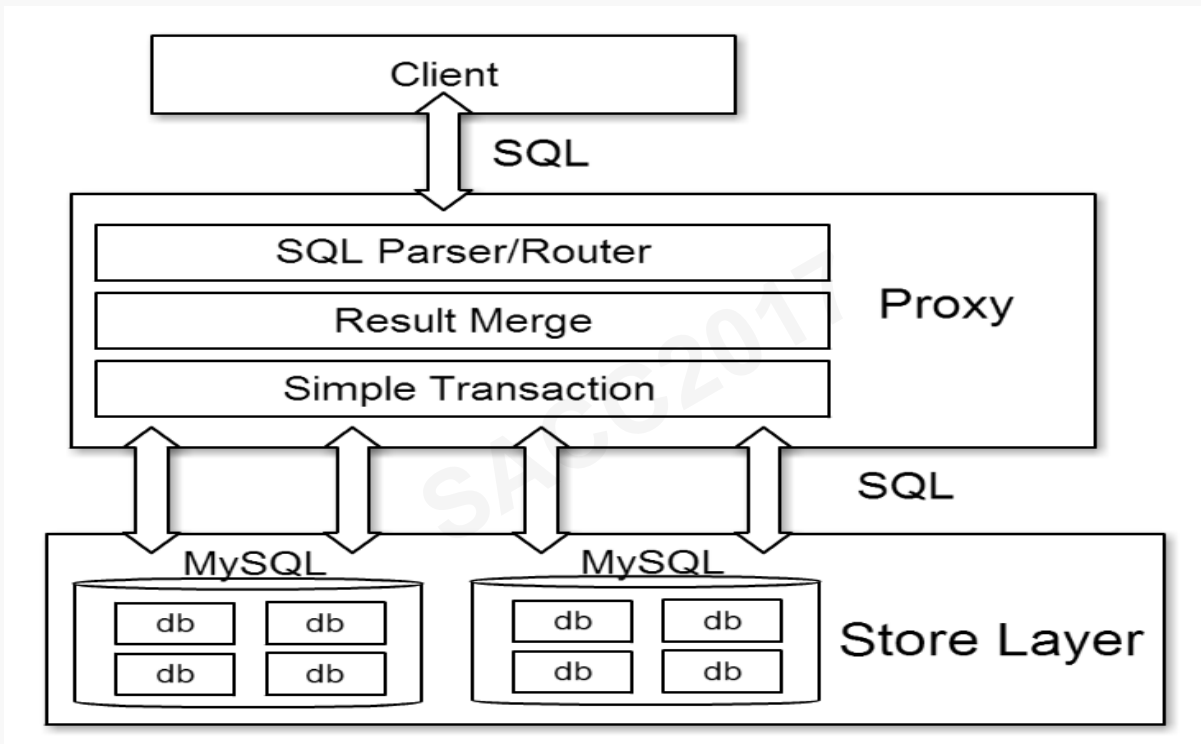
- 数据分布：选择合适的拆分字段/拆分方式
- 如何避免跨库的事务，跨库事务最痛苦的事情是死锁，大面积死锁
- 如何扩容

# 资源利用率

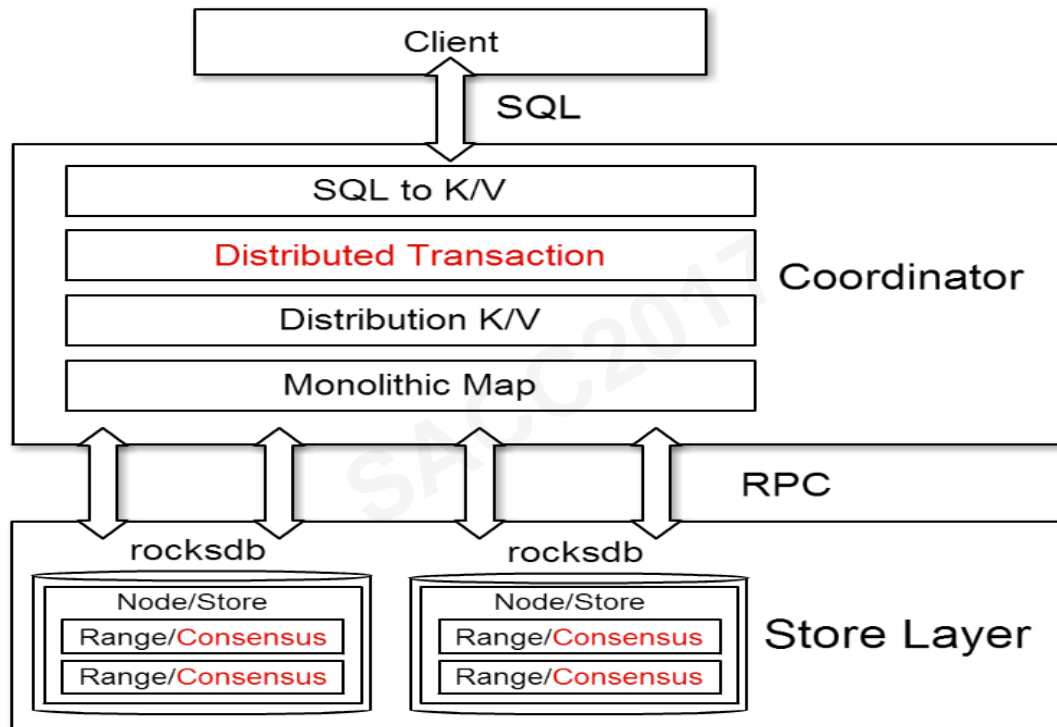
- 多租户——系统层面实现隔离
- 操作系统层面——VM
- 进程隔离——Container



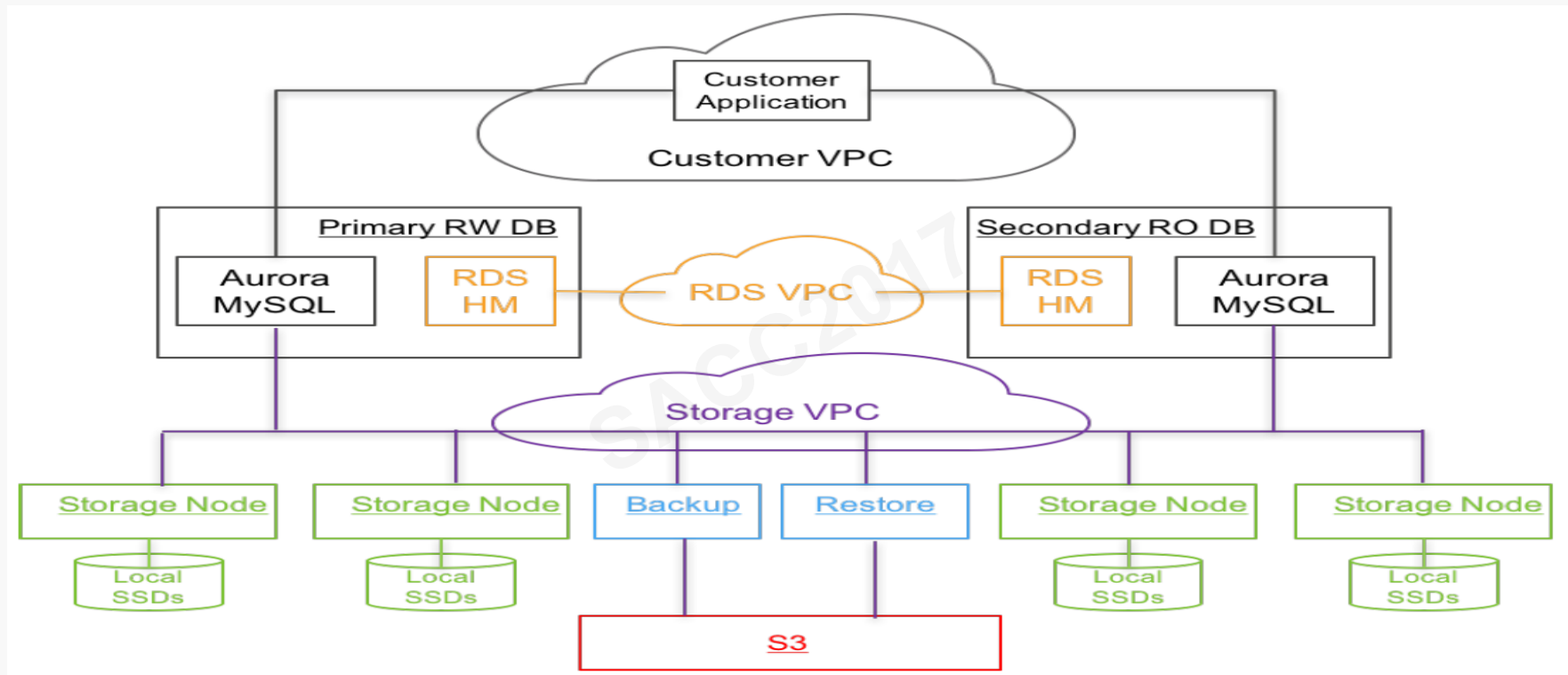
# 探索趨勢



# 探索趨勢



# 探索趨勢



THANKS

The background features a dark, almost black, space filled with numerous bright blue particles. These particles are arranged in several distinct, curved paths that sweep across the frame from the bottom left towards the top right. A bright, white-to-yellow light source is positioned behind the word 'THANKS', creating a strong lens flare effect that illuminates the surrounding particles and casts a soft glow on the dark background.