



GOPS2017
Beijing



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2017 全球运维大会



北京站

指导单位：



数据中心联盟
Data Center Alliance



开放运维联盟
OOPSA Open OPS Alliance

大会时间：7月28-29日

主办单位：



高效运维社区
Great OPS Community



DevOps 时代



CIO 时代
CIO APP

大会地点：北京朝阳悠唐皇冠假日酒店

Inside Galera Cluster

王竹峰 Qunar DBA

About me



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▶ **dameng.com**

- **DM database 7 kernel developer**

▶ **renren.com**

- **MySQL**

▶ **qunar.com**

- **MySQL DBA**
- **inception toolkit**
- **redis patch**
- **Galera cluster sentinel**



zhufeng 

北京 西城



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Contents



▶ galera introduction

▶ questions to galera cluster

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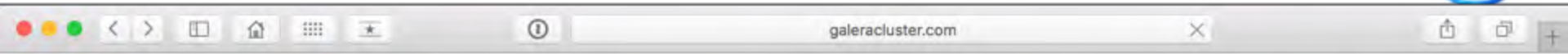
▶ galera concurrency control

▶ inside galera gcache

▶ does galera cluster have many problems?

▶ galera cluster is slow? really?

Galera Cluster introduction



GALERA  CLUSTER

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THE WORLD'S MOST ADVANCED OPEN SOURCE DATABASE CLUSTER

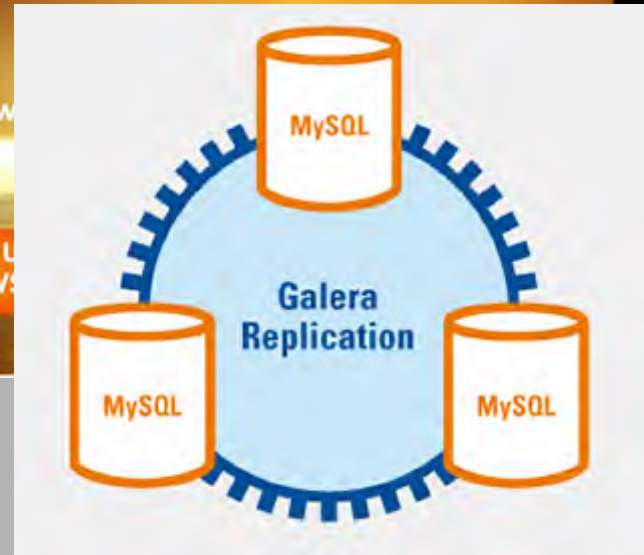
Galera Cluster for MySQL is an easy-to-use high-availability solution with high system up-time, no data loss, and scalability for future growth.

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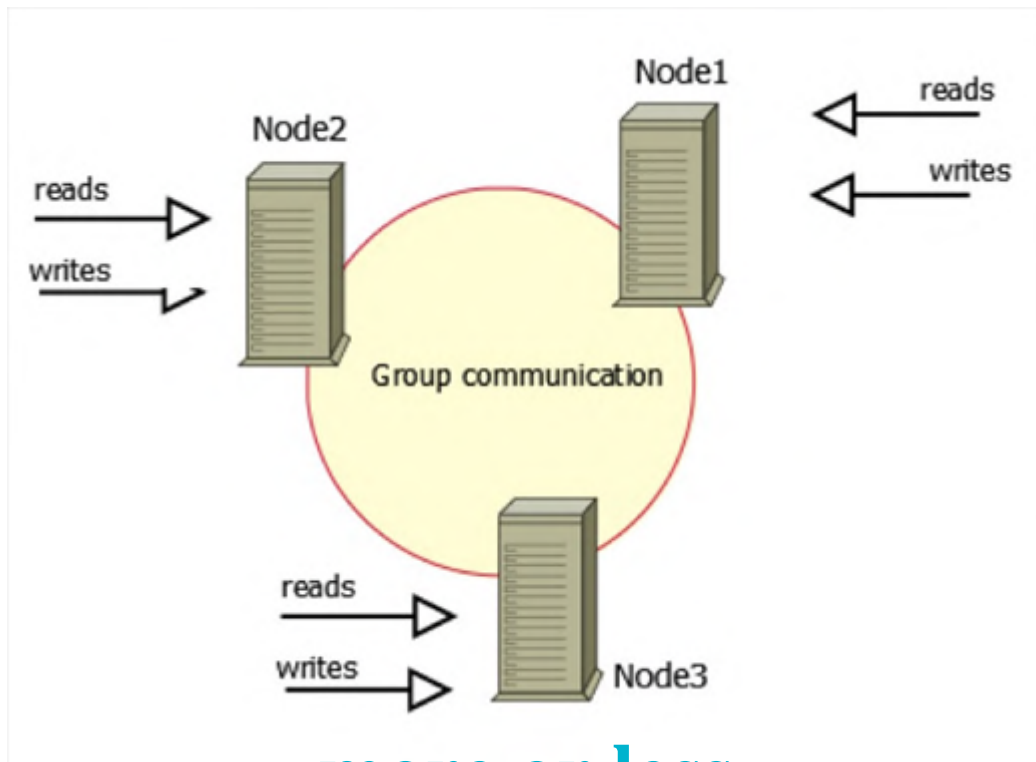


Questions to galera cluster

- ▶ is real synchronous replication ?
- ▶ need to wait the cert result from others ?
- ▶ the performance of multi-write
- ▶ data consistency
- ▶ what to certificate? how to certificate?
- ▶ how to deal with certification failure ?



Architecture



more or less

- ▶ multi-master
- ▶ synchronous replication
- ▶ No replication relay
- ▶ concurrency control
- ▶ switch over as will
- ▶ state transfer automatically
- ▶ so-easy for dba

Architecture

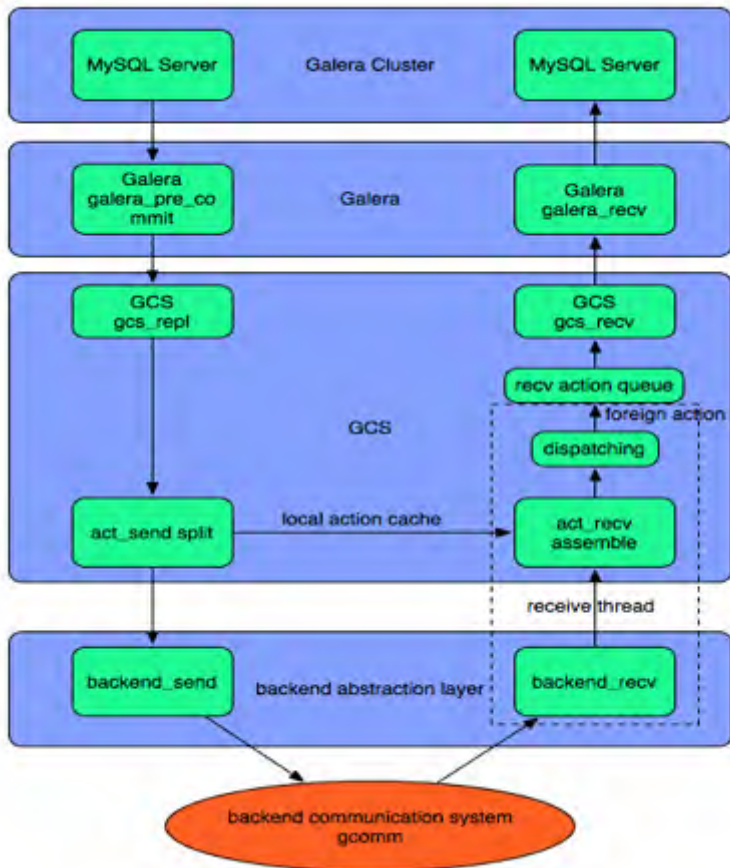
Server

galera API

galera logic

galera message

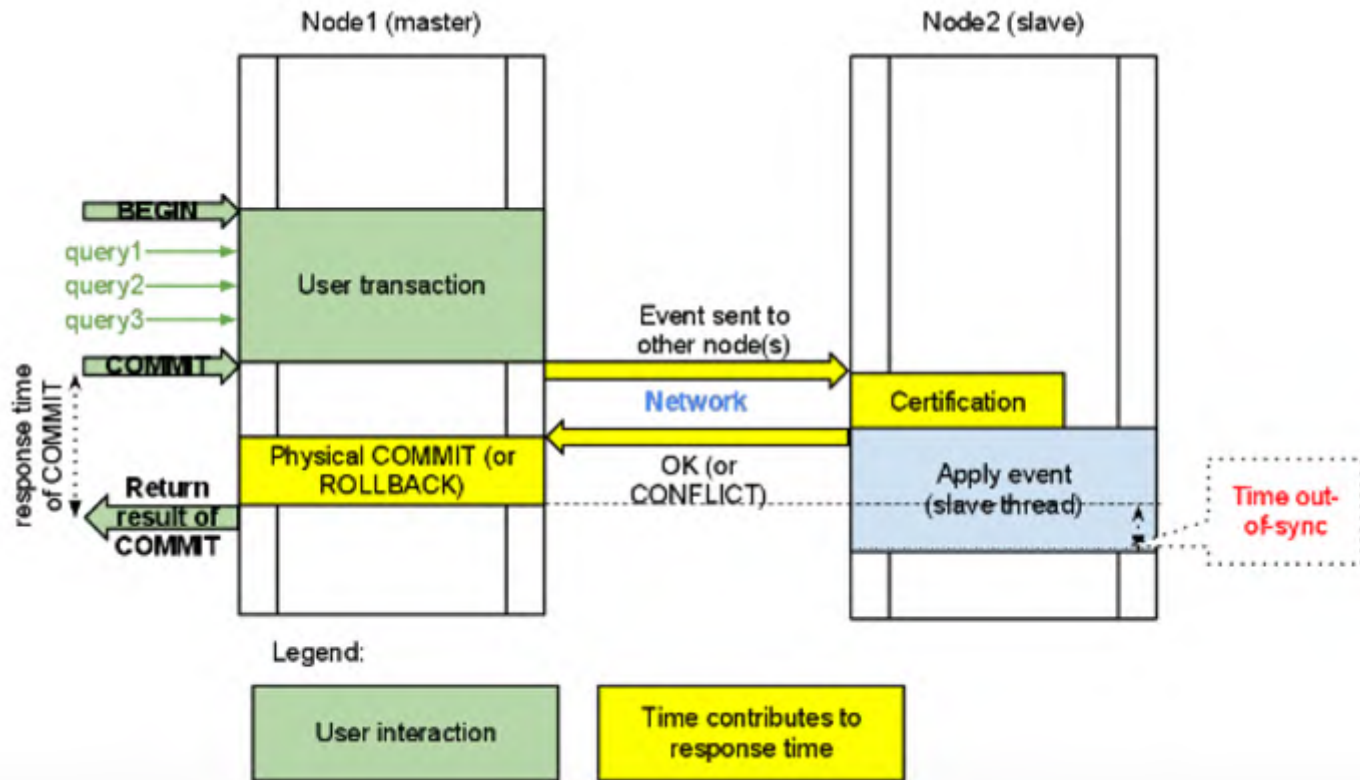
network



Architecture



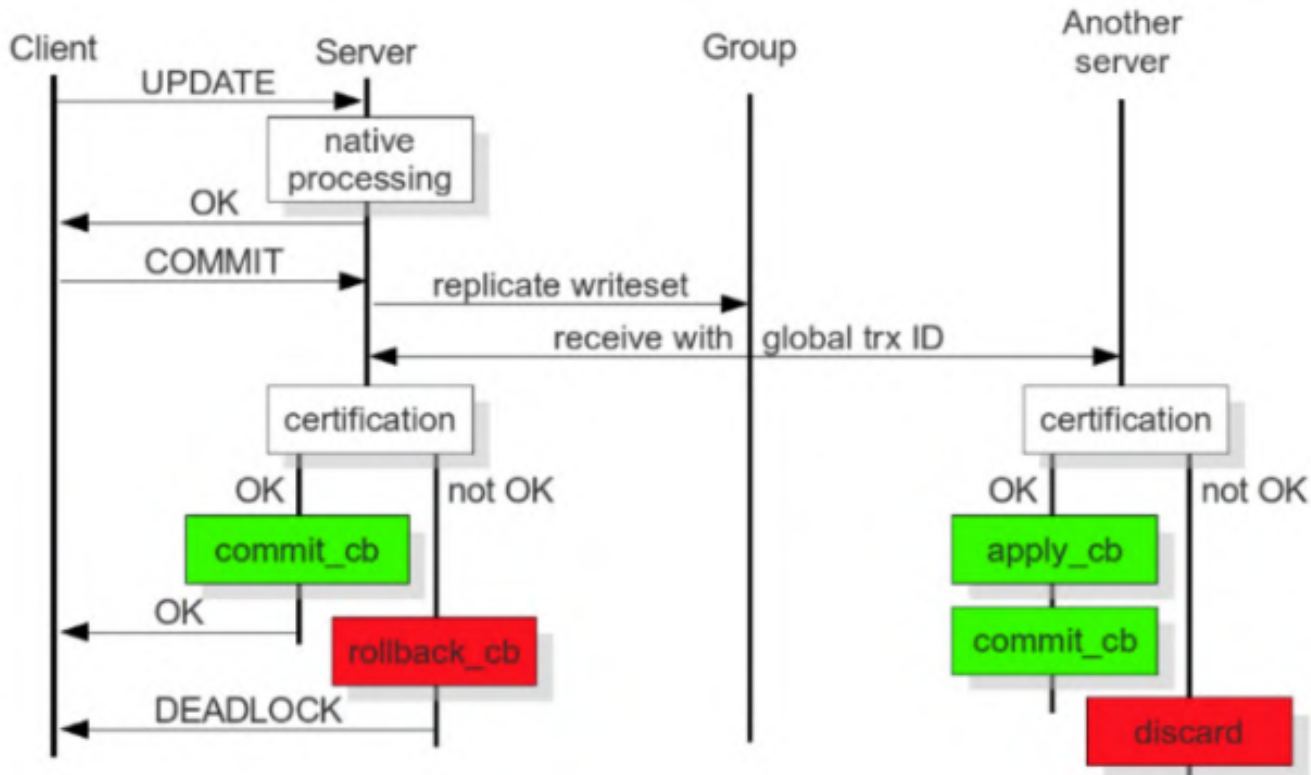
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Architecture



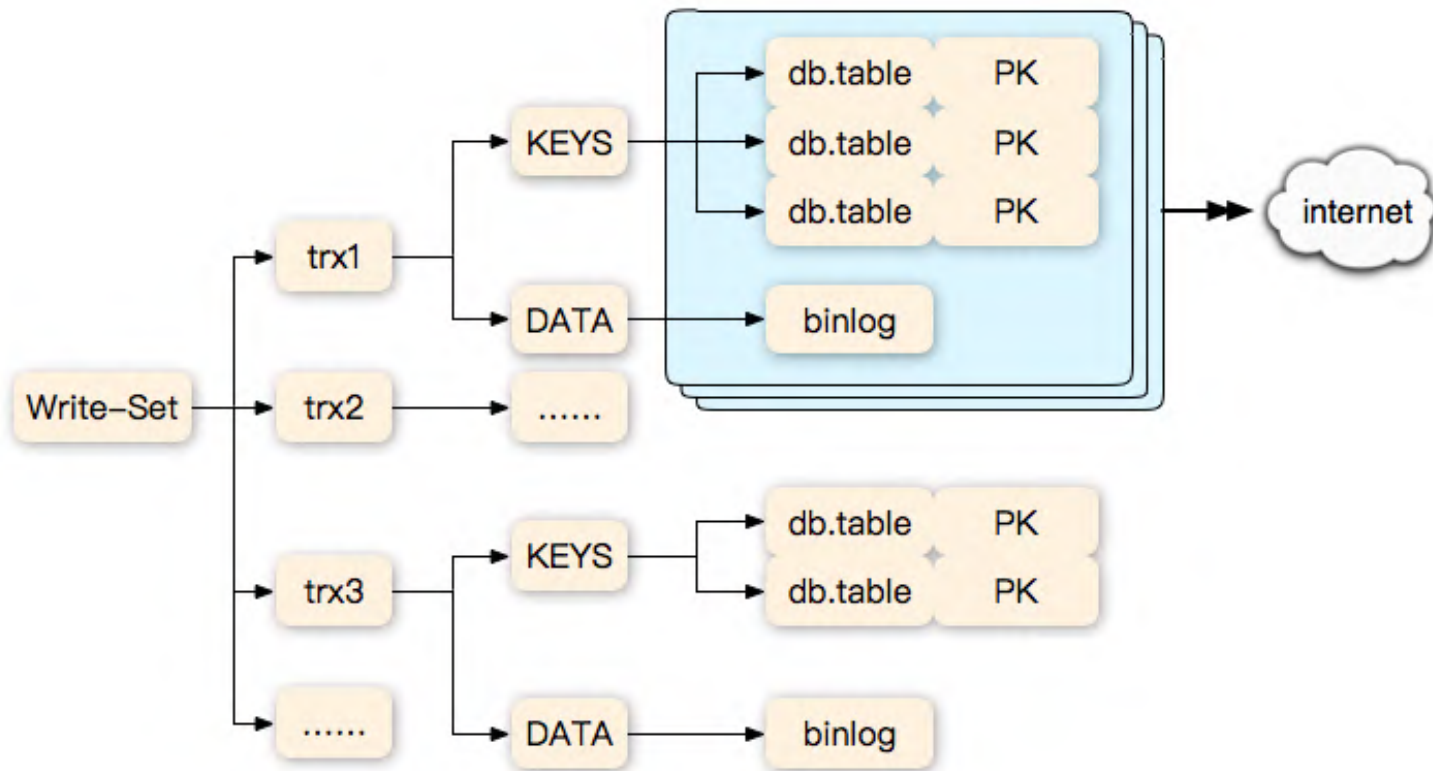
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Galera Write-Set



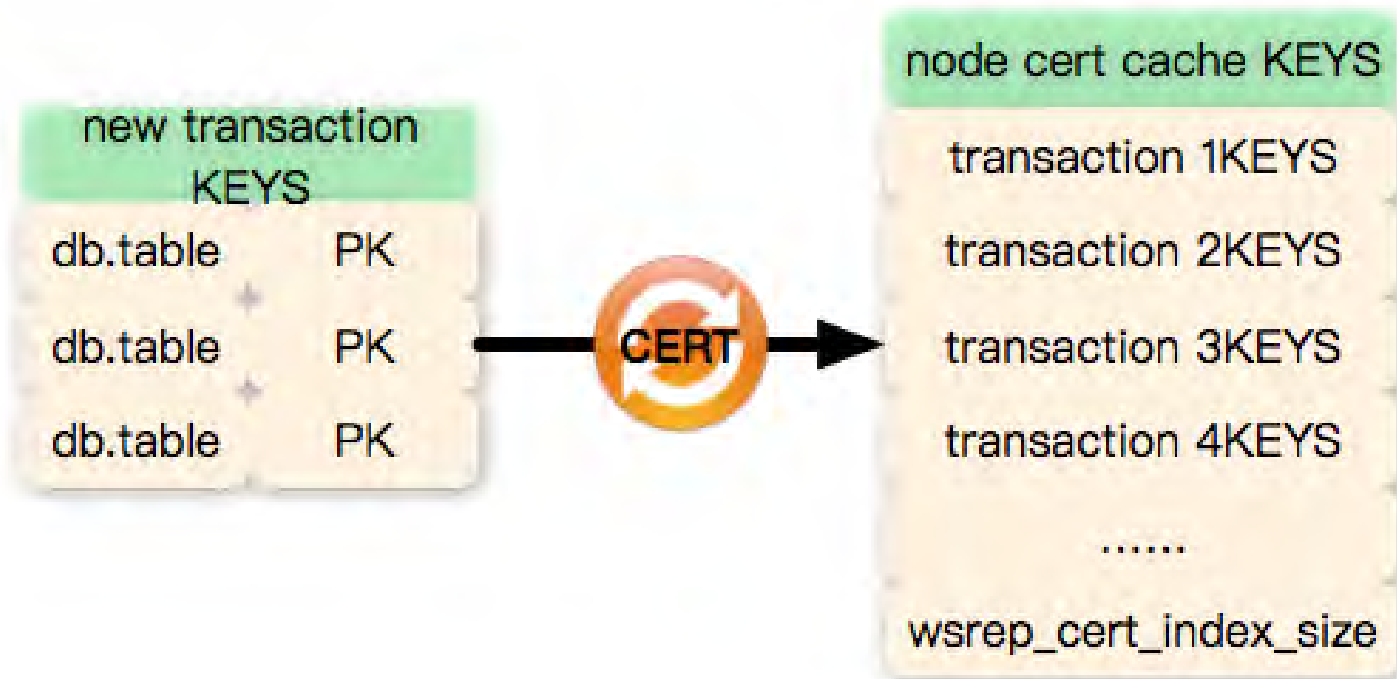
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Galera Write-Set

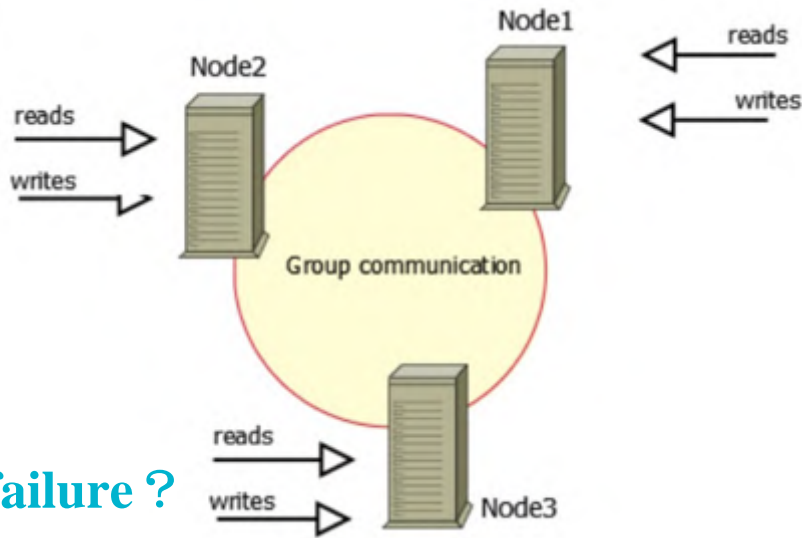


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Galera Write-Set

why to certificate ?



what is certificating failure ?

- two Write-Sets come from different nodes
- two Write-Sets have the same keys
- the older GTID is invisible to new transaction

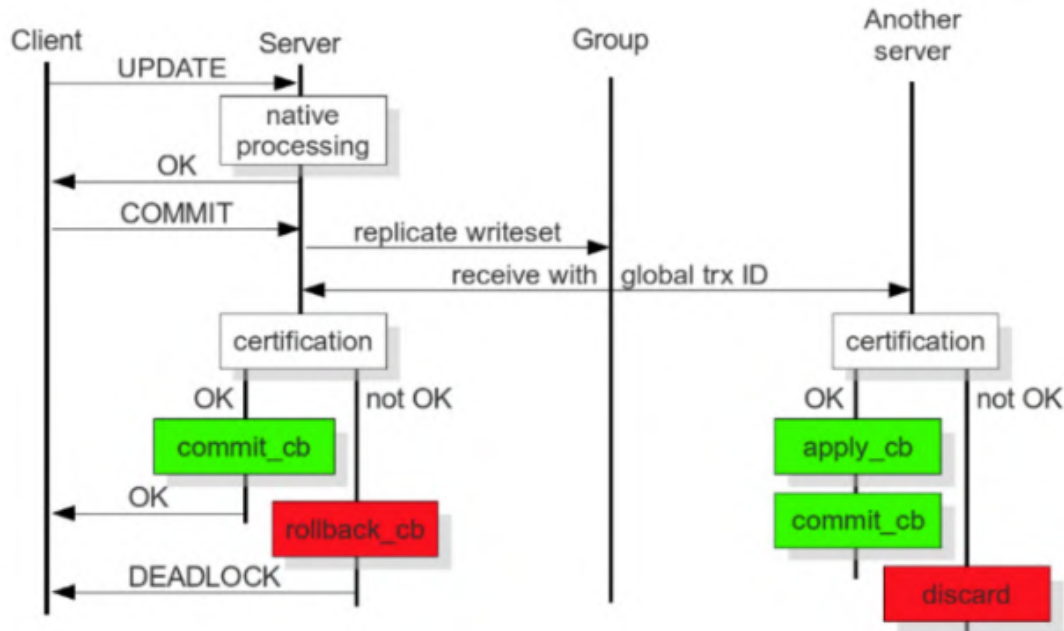


Galera Write-Set

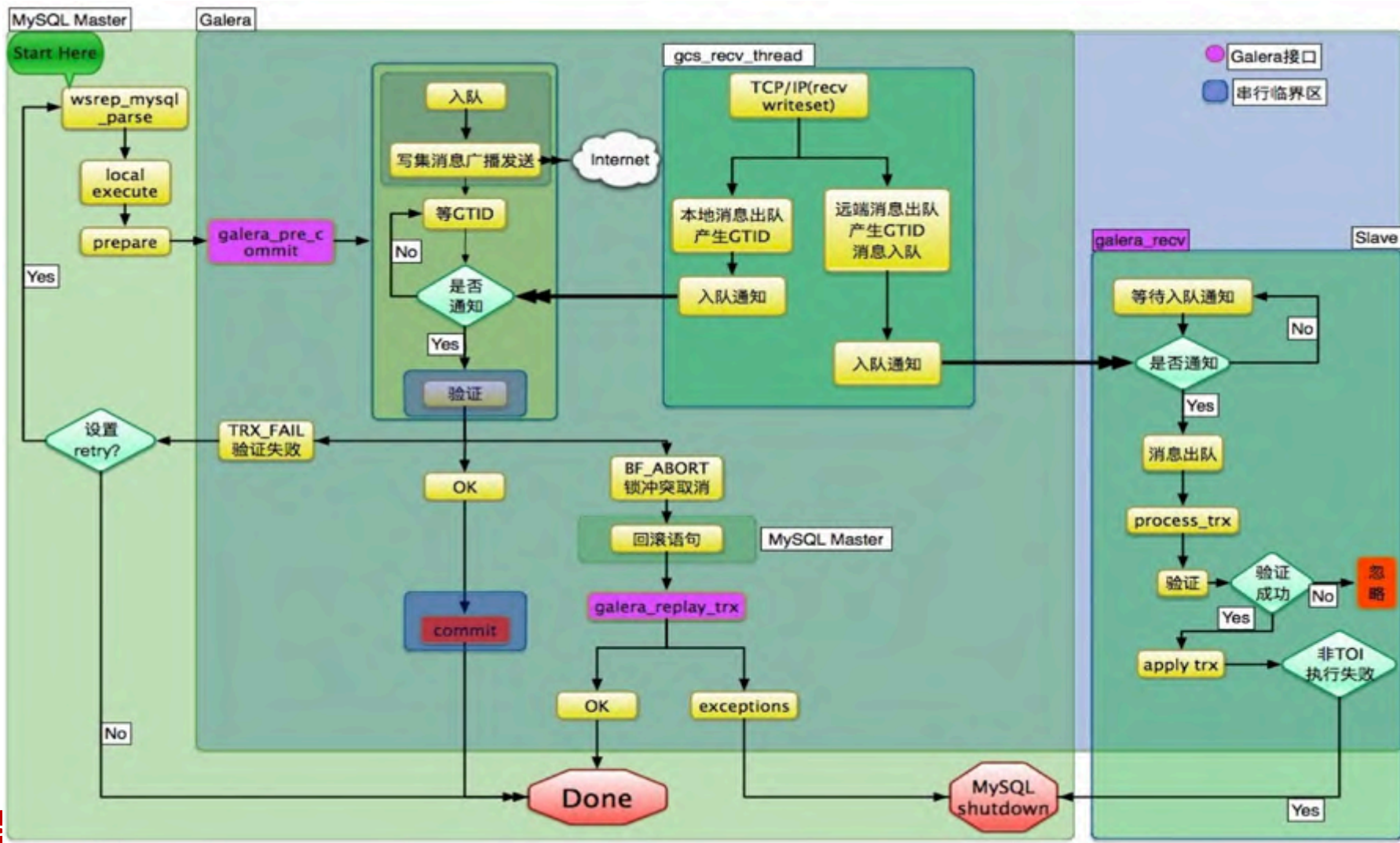


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- ▶ local certification, replicate, which first? any questions?
- ▶ how to deal with certification failure ?
- ▶ and execution ?



Galera Write-Set



Galera Concurrency Control

- ▶ write-set replication
- ▶ write-set local certification
- ▶ write-set slave apply
- ▶ write-set commit



Inside Galera Gcache



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definition

function

state transfer

what size to set

influence

theory

HA



Have many problems?



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- ▶ DDL result in whole cluster hang ?
- ▶ DDL result in deadlock ?
- ▶ how to cancel DDL execution ?
- ▶ flow control



Galera cluster slow? really?

- ▶ galera concurrency control
- ▶ local certification
- ▶ wait GTID
- ▶ synchronous replication
- ▶ multi node write





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会议

- 8月18日 DevOpsDays 上海
- 全年 DevOps China 巡回沙龙
- 11月17日 DevOps金融上海

培训

- EXIN DevOps Master 认证培训
- DevOps 企业内训
- DevOps 公开课
- 互联网运维培训

咨询

- 企业DevOps 实践咨询
- 企业运维咨询



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Thanks

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