TiDB 2.1: What's New and What's Next

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Agenda

- What's new in TiDB 2.1
  - PD/TiKV
  - TiDB
  - Tools
- What's next?

TiDB 2.1

PD/TiKV (1/2)

- Version Control

- PreVote

  - PD

  - TiKV

- Raft Learner

- Hotspot scheduling

- Asynchronous log

PD/TiKV (2/2)

- Fix DST issue
- Batch Split, Fast Split

SQL Layer (1/2)

- Optimizer && Execution Engine
  - Optimize the selection range of `Index Join` to improve the execution performance
  - Support `Index Hint` and `Join Hint` in the `UPDATE` and `DELETE` statements
  - Parallel `Hash Aggregate`, `Project` operators
  - New Aggregation Framework
  - Update statistic based on query feedback
  - Explain Analyze Statement
- DDL
  - Parallely executing DDL: AddIndex, Other DDL statements
  - Optimize the execution speed of `ADD INDEX`
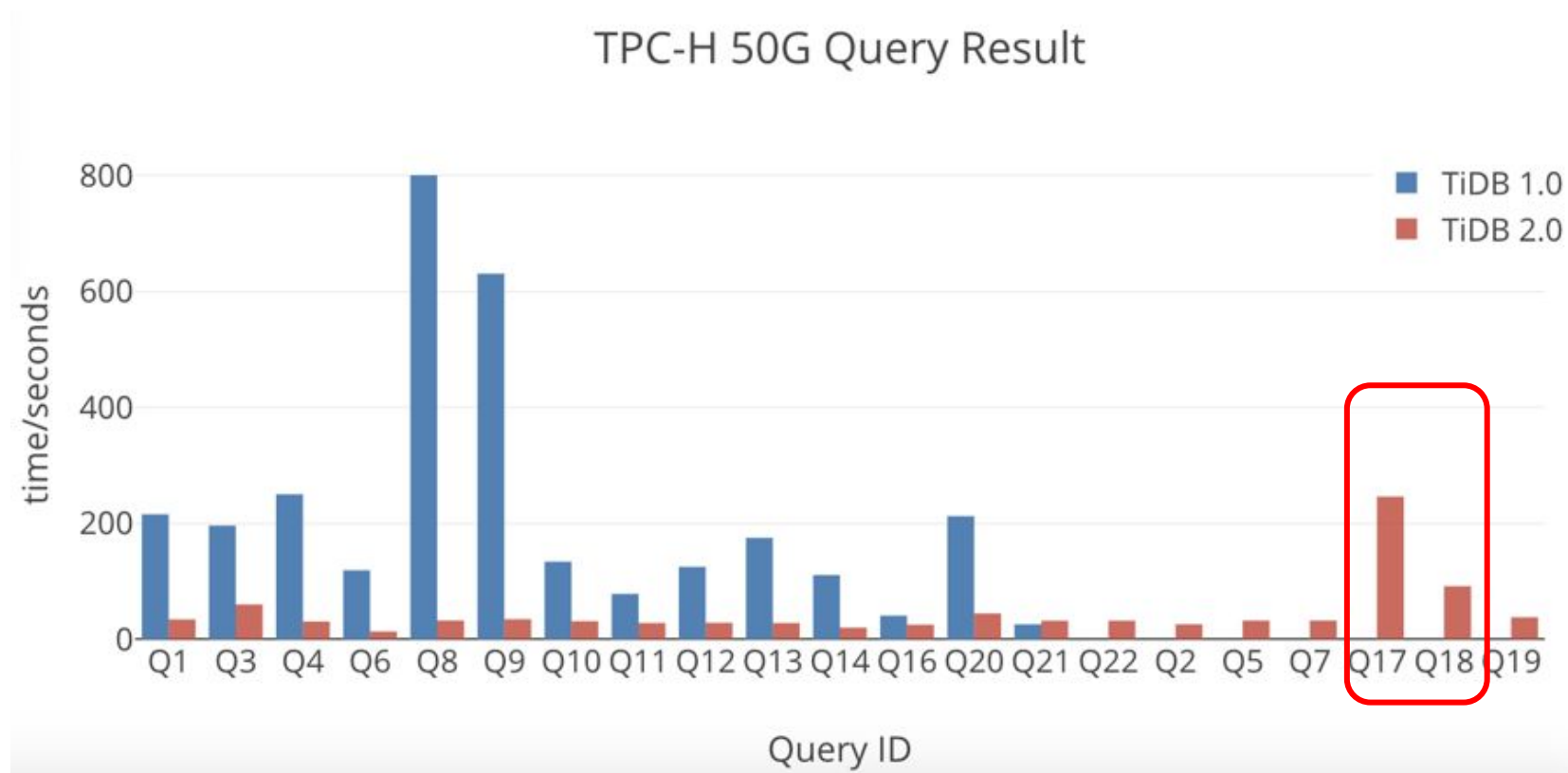
SQL Layer (2/2)

- DML && Server
  - Optimize the conflicted transaction performance
  - Optimize the statement performance of `insert ignore on duplicate key update`
  - Optimize explain output
  - Server-side cursor
  - Slow query
  - Table Partition (Range Partition, Experimental)

- HTTP API
  - Scatter the distribution of table Regions in the TiKV cluster
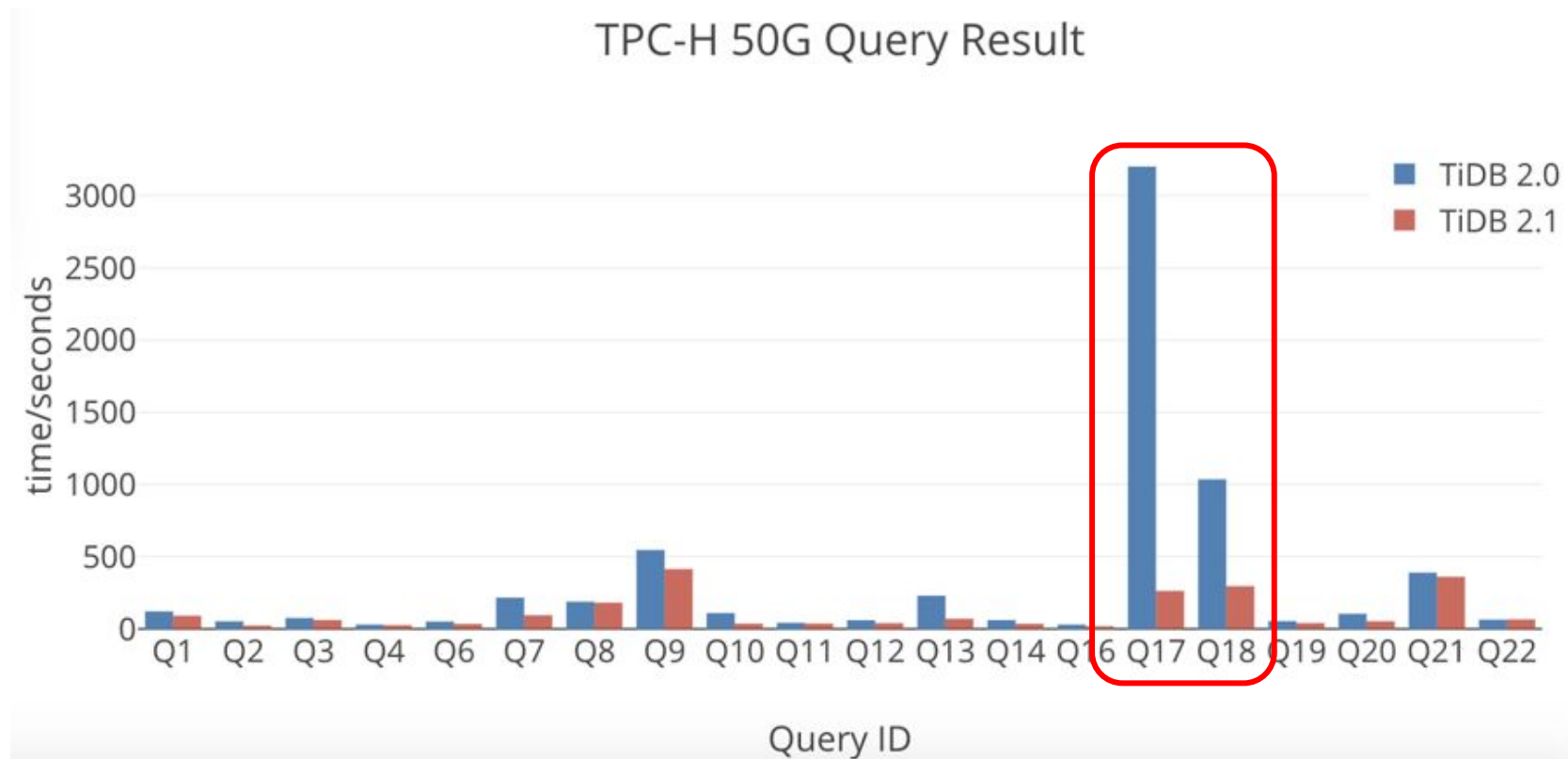 - General log
  - Log level

Tools

- [Lightning](#)

- [New binlog](#)
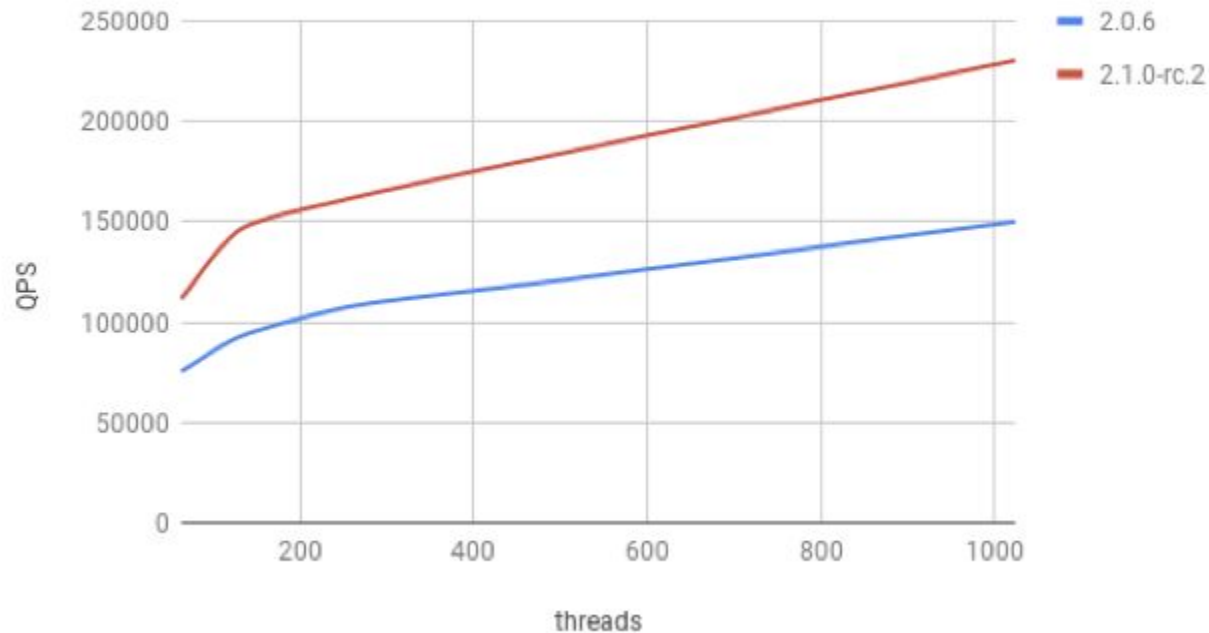
Benchmark

2.0 VS 1.0 on TPC-H Scale 50

TPC-H 50G Query Result

2.1 VS 2.0 on TPC-H Scale 50

TPC-H 50G Query Result

2.1 VS 2.0 on Sysbench Point-Query

Point Select

2.1.0-RC5 is shipped.
2.1.0-GA is not far away.

What's Next?

PD

- Hotspot Scheduling
  - Collecting Information
  - Auto balance/split hot region
- Powerful replica strategy
  - IDC
  - Replica count 3/5/7

TiKV

- Multi-thread Raft store

- Multi-thread Apply worker

- Consensus Join

- The next generation storage engine

  - Optimize for large key-value

  - Compaction

TiDB

- Optimizer
  - Join Reorder
  - Cascades Optimizer
- Execution Engine
  - Parallel operators
  - Projection pushdown
  - Improve the performance of OLTP workload
  - File sort
- Table Partition (Range Partition, GA)
- View, Window Function, CTE

Open Source

- Document
  - [Design Docs](#)
  - [Source Code Reading](#)
  - [Community](#)
- Open Source Community
  - More open
  - 20k+ Stars
  - More contributors: 161 -> 215
  - One more committer

One more thing: A brand new admin tool

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Thanks !