MySQL Query Benchmarking

Jeremy Zawodny
Yahoo! Inc.

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Jeremy@Zawodny.com
http://jeremy.zawodny.com/mysql/
About Me

• Long-time MySQL user
  – Using for 5-6 years
• Active on MySQL mailing lists
• Yahoo's resident “MySQL Geek”
  – Part of the platform engineering group
  – MySQL support, planning, tuning, etc.
• Write about LAMP for Linux Magazine
• Random MySQL consulting
• E-Mail: Jeremy@Zawodny.com
MySQL at Yahoo!

- 200-400 servers world-wide
- Mission-critical
- FreeBSD and Linux on commodity hardware
- Replaces home-grown DB systems, sometimes Oracle
- Used both “live” and in batch processing
- Replication and load-balancing to scale
Yahoo! Is Hiring

It's not just Amazon and Ticketmaster. We need good, open source-loving hackers to help build some of the world's most popular web destinations.

We use FreeBSD, C/C++ (gcc), Apache, Perl, PHP, MySQL, vi(m), Emacs, and even some Java here and there.

I'm collecting resumes...
Outline

- Why
- What
- When
- How

- Mysql-bench
- super-smack
- mybench
- Book Plug
Why Benchmark

• Know when to expect problems
• To answer important questions:
  - How much load can you handle?
  - What's likely to break first?
  - Where will it break? How?
  - Does the server scale gracefully?
  - How will the application behave when busy?
  - Does your monitoring system notice?
    • You do have one, right? :-)

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Why Benchmark

• Compare alternative implementations
  - Queries
  - Indexes, Table Types
  - Application Logic

• Test server hardware configurations
  - Should I add RAM or disks?
  - Is RAID-10 really faster than RAID-5?
  - Will dual CPUs really help?
    • How much?

• Because it's easy
What to Benchmark

• Individual queries
• A normal “session”
• The whole application
  - Requires more work/tools
  - Web apps aren't too difficult
    • Many load/stress testing tools available
    • Apache Bench (ab) is a simple start
When to Benchmark

• Benchmark early and often
• During design
  - Helps make decisions about table structure, indexes, etc.
  - Know early on if you have sufficient hardware
• Before launch
• Anytime you're wondering “which is faster, A or B?”
Quick Question

Who here has already setup a system for benchmarking MySQL?
How to Benchmark

• Change one parameter at a time
  - Have a plan
  - Know what you're testing
  - Record your findings and configuration

• Always repeat test runs (3 times min.)

• Separate client and server

• Be aware of external influences

• Use realistic configurations
Mysql-bench

• A good overall benchmark
  - Useful for comparing servers and configurations in a general way
  - Doesn't test your specific application
    • Unless you add the code, of course

• Tests can be run separately or as a whole

• Look at the sql-bench subdirectory of the MySQL distribution

• Demo
Super-smack

- Separate multi-threaded C++ tool
- Build a configuration file to specify test conditions
  - Takes time to configure
  - Can generate data if needed
- Simulate any amount of load necessary (within reason)

- Demo
Mybench

- Perl-based benchmarking framework
- Very simple to use
- Quite flexible, since it's Perl
- You really need to know a bit about DBI to use it

- Demo
Coming Soon
More Info

- MySQL's BENCHMARK() function

- Custom Benchmarks for MySQL

- MySQL super-smack
  http://advanced-mysql.com/super-smack/

- MyBench
  http://advanced-mysql.com/mybench/
Questions?