MySQL Query Benchmarking

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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
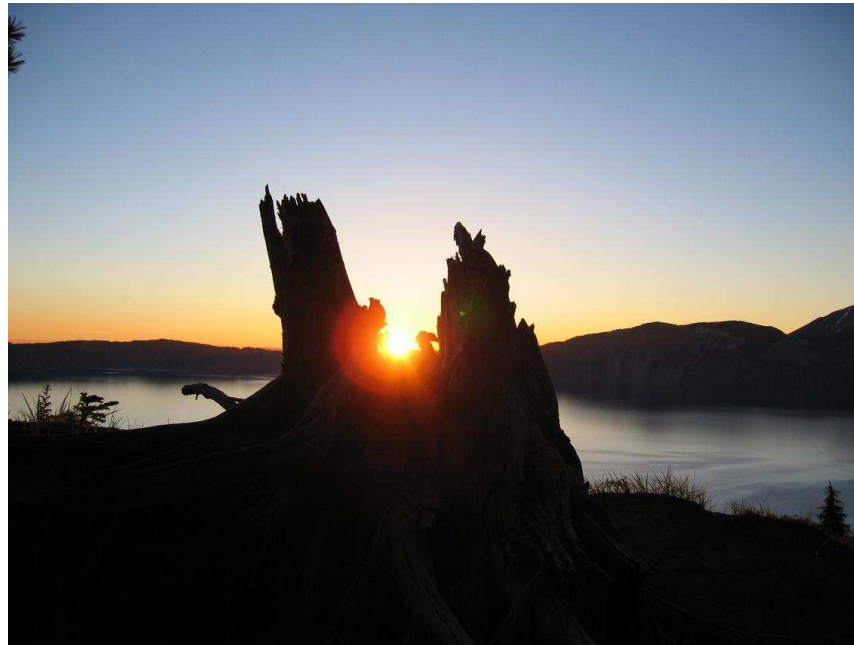
Yahoo! Is Hiring

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? :-)

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

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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
    - Uness you add the code, of course
- Tests can be run separately or as a whole
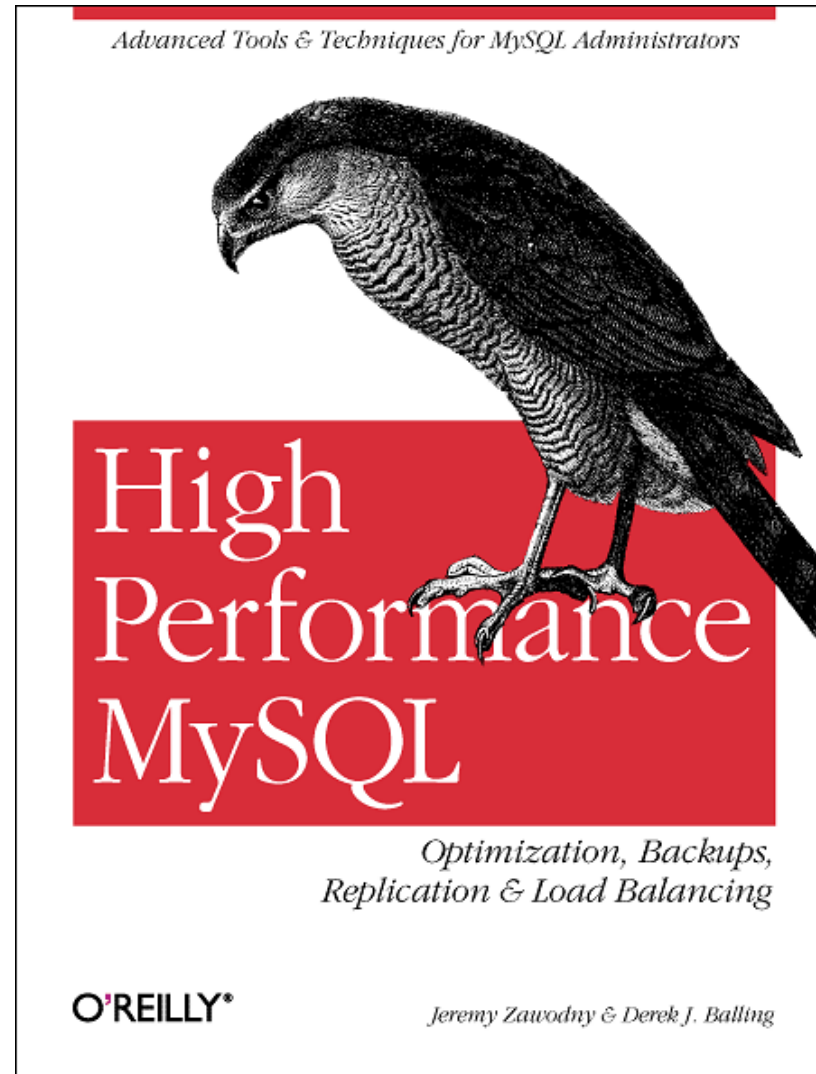- Look at the `sql-bench` subdirectory of the MySQL distribution
- Demo

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
- http://advanced-mysql.com/super-smack (coming soon)

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Mybench

- Perl-based bechmarking framework

- Very simple to use

- Quite flexible, since it's Perl

- You really need to know a bit about DBI to use it

- Demo

- http://advanced-mysql.com/mybench/ (coming soon)

Coming Soon

More Info

- MySQL's BENCHMARK() function
  http://www.mysql.com/doc/en/Miscellaneous_functions.html

- Custom Benchmarks for MySQL
  http://www.mysql.com/doc/en/Custom_Benchmarks.html

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

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

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Questions?