What's new in MySQL 5.5?

Lenz Grimmer
MySQL Community Relations Specialist
$ whoami

SuSE
1998

MySQL
2002

Sun Microsystems
2008

Oracle
2010
Investment in MySQL
Rapid Innovation

• Make MySQL a Better MySQL
  – #1 Open Source Database for Web Applications
  – Most Complete LAMP Stack
  – Telecom & Embedded

• Develop, Promote and Support MySQL
  – Improve engineering, consulting and support
  – Leverage 24x7, World-Class Oracle Support

• MySQL Community Edition
  – Source and binary releases
  – GPL license
MySQL 5.5 Highlights

• InnoDB becomes the default
• Improved Performance & Scalability
• Improved Availability
• Improved Manageability & Usability
• Improved Instrumentation & Diagnostics
InnoDB 1.1 as Default Storage Engine

- ACID Transactions, Foreign Keys, Crash Recovery
- Plugin replaces built-in version
- Newly created tables use InnoDB by default
- MyISAM and other Storage Engines still available
- Many performance/scalability improvements
- Better instrumentation & diagnostics
InnoDB Performance improvements

- Multiple/Split Buffer Pool Instances
- Multiple Rollback Segments
- Improved recovery performance
- Native async I/O on Linux
- Extended Change Buffering (with delete buffering, purge buffering)
- Control of overall I/O capacity
- Restored group commit
InnoDB Scalability Improvements

• Improved Log Sys mutex
• Separate Flush List mutex
• Improved Purge Scheduling
• Improved default thread concurrency
• Control of background I/O threads
• Control of using the OS memory allocator
• Faster locking algorithms
InnoDB Instrumentation/Diagnostics

- InnoDB stats in PERFORMANCE_SCHEMA
- More extensive SHOW ENGINE INNODB STATUS
- New INFORMATION_SCHEMA tables
Improved Availability

• Semi-synchronous Replication
• Replication Heartbeat
• Replication Slave fsync() options
• Automatic Relay Log Recovery
Other replication improvements

- Per-master event filtering
- Replication Slave Side Type Conversions
- Individual Log Flushing
- SHOW RELAYLOG EVENTS
Improved Manageability & Usability

• PERFORMANCE_SCHEMA
• SIGNAL/RESIGNAL
• Pluggable authentication framework
• More Partitioning Options
MySQL 5.5 SysBench Benchmarks
Linux

MySQL 5.5 vs. 5.1 - Read Only

200% performance gain for MySQL 5.5 over 5.1.50; at scale

MySQL 5.5.6
(New InnoDB)

MySQL 5.1.50
(InnoDB Plug-in)

MySQL 5.1.50
(InnoDB built-in)

Intel Xeon X7460 x86_64
4 CPU x 6 Cores/CPU
2.66 GHz, 32GB RAM
Fedora 10

ORACLE
MySQL 5.5 SysBench Benchmarks
Linux

MySQL 5.5 vs. 5.1 - Read Write

369% performance gain
for MySQL 5.5 over 5.1.50; at scale

MySQL 5.1.50
(InnoDB built-in)

MySQL 5.1.50
(InnoDB Plug-in)

MySQL 5.5.6
(New InnoDB)

Intel Xeon X7460 x86_64
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Fedora 10
MySQL 5.5 Scales on multi core
Sysbench Read Write
MySQL 5.5 SysBench Benchmarks
Windows

MySQL 5.5 vs. 5.1 - Read Only

538% performance gain for MySQL 5.5 over 5.1.50; at scale

MySQL 5.5.6
(New InnoDB)

MySQL 5.1.50
(InnoDB Plug-in)

MySQL 5.1.50
(InnoDB built-in)

Intel x86_64
4 CPU x 2 Cores/CPU
3.166 GHz, 8GB RAM
Windows Server 2008
MySQL 5.5 SysBench Benchmarks

Windows

MySQL 5.5 vs. 5.1 - Read Write

1561% performance gain for MySQL 5.5 over 5.1.50; at scale

MySQL 5.5.6
(New InnoDB)

MySQL 5.1.50
(InnoDB Plug-in)

MySQL 5.1.50
(InnoDB built-in)

Intel x86_64
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Key Takeaways

- MySQL is important to Oracle and our customers
- Part of our Complete, Open, Integrated strategy
- Oracle is making MySQL better today
- Major Feature, Performance, Scalability enhancements
- 24x7, Global support in 145 countries
Give it a spin!

- Download MySQL 5.5 from the usual place: http://dev.mysql.com/downloads/mysql/
- Send us feedback and bug reports: http://bugs.mysql.com/
- Blog about your experiences: http://planet.mysql.com
Discussion / Q & A
Thank you!

Lenz Grimmer <lenz.grimmer@oracle.com>
http://www.lenzg.net/
@lenzgr
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