MySQL in the Oracle Ecosystem

Philip Antoniades, Director Sales Consulting
MySQL Database
Today’s Agenda

• Oracle’s Strategy and Investment in MySQL
• Oracle Product Certifications/Integrations for MySQL Enterprise Edition
  • Replication
  • Backup/Recovery
  • Operations and Business Intelligence
  • Security and Auditing
  • My Oracle Support
• Additional Resources
• Questions?

Giveaways courtesy of Ronald Bradford

http://effectivemysql.com
Safe Harbor Statement

The following is intended to outline our general product direction. It is intended for information purposes only, and may not be incorporated into any contract. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions.

The development, release, and timing of any features or functionality described for Oracle’s products remains at the sole discretion of Oracle.
ORACLE DRIVES MySQL INNOVATION
More Product Releases Than Ever Before

Driving MySQL Innovation

- MySQL Workbench 5.2 GA!
- MySQL Enterprise Monitor 2.2
- MySQL Cluster 7.1
- MySQL Cluster Manager 1.0
  All GA!

Q2 CY2010

Q3 CY2010

Q4 CY2010

Q1 CY2011

Q2-4 CY2011

A Better MySQL

- MySQL Database 5.5
- MySQL Enterprise Backup 3.5
- MySQL Enterprise Monitor 2.3
- MySQL Cluster Manager 1.1
  All GA!

- MySQL Enterprise Backup 3.7
- Oracle VM Template for MySQL Enterprise Edition
- MySQL Enterprise Oracle Certifications
- MySQL Windows Installer
- MySQL Enterprise Commercial Extensions
  All GA!

- MySQL Database 5.6 DMR*
- MySQL Cluster 7.2 DMR and MySQL Labs!
  (“early and often”)

*Development Milestone Release

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Oracle’s Investment in MySQL
Rapid Innovation

Make MySQL a Better MySQL
• #1 Open Source Database for Web Applications
• “M” in most complete LAMP stack
• Embedded

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

MySQL Community Edition
• Source and binary releases
• GPL license
MySQL: Open Source (GPL)

Available to download and use under the GPL:
• MySQL Database (Community Server)
• MySQL Cluster
• MySQL Workbench Community Edition
• MySQL Utilities (in Python)
• MySQL Connectors
• MySQL Proxy
• Documentation
• Forums

Set your ambitions high!
### Oracle+MySQL Demographic

<table>
<thead>
<tr>
<th>Database</th>
<th>Currently Deployed</th>
<th>Plan to Deploy Next Year</th>
<th>Plan to Deploy but Not in the Next Year</th>
<th>No Plans to Deploy</th>
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<tr>
<td>Teradata</td>
<td>11%</td>
<td>15%</td>
<td>13%</td>
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</tr>
</tbody>
</table>

Estimate that 70% are using MySQL too
MySQL Database
Performance, Reliability, Ease of Use

- Support for common development languages/platforms
- Efficient multi-threaded session handling
- Full DML, DDL parsing, cost based optimizer, caching of queries and result sets
- Flexible Storage Engine options for application specific storage needs
- Flexible logging and physical storage options
MySQL Database
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Efficient multi-threaded session handling

Full DML, DDL parsing, cost based optimizer, caching of queries and result sets

Flexible Storage Engine options for application specific storage needs

MySQL Server

Connectors
Native C API, JDBC, ODBC, .NET, PHP, Python, Perl, Ruby, VB

Connection Pool
Authentication - Thread Reuse - Connection Limits - Check Memory - Caches

SQL Interface
DML, DDL, Stored Procedures, Views, Triggers, etc.

Parser
Query Translation, Object Privilege

Optimizer
Access Paths, Statistics

Caches & Buffers
Global and Engine Specific Caches & Buffers

Pluggable Storage Engines
Memory, Index & Storage Management

File System
NTFS - NFS
SAN - NAS

Files & Logs
Redo, Undo, Data, Index, Error, Query, and Log

Flexible logging and physical storage options
MySQL Database

InnoDB - Transactional by Default

- Default Storage Engine for MySQL 5.5 and above
- ACID-compliant transactions, MVCC
- Row-level locking
- Two phase commit
- Efficient indexing
- Fast DDL operations
- Table compression
- Automatic crash recovery
- Referential integrity
- Online backup
- More

> 95% of all MySQL apps run on InnoDB
MySQL 5.6: A Better MySQL

- MySQL 5.6 builds on MySQL 5.5 by improving:
  - **Optimizer** for better Performance, Scalability
  - **Performance Schema** for better instrumentation
  - **InnoDB** for better transactional throughput
  - **Replication** for higher availability, data integrity
  - “NotOnlySQL” options for better flexibility

Web Cloud Embedded On-Premise

Try it now:
dev.mysql.com/downloads/mysql
Tough Questions

...performance issues? ...servers down?
...expensive, slow queries? ...security policies, change?

Where/When/How to Tune?
...Replication synch issues? ...Developers productive?
...will systems scale? ..version of MySQL to run?

...managing Oracle and MySQL databases? ...can I recover?
MySQL Enterprise Edition

Highest Levels of MySQL Scalability, Security & Uptime
Enables you to manage your Oracle and MySQL databases with Oracle tools/solutions you are already using.
Oracle Integrations: Golden Gate

Available Now

- Heterogeneous Replication between MySQL, Oracle
- MySQL specific optimizations
- Hybrid web, enterprise applications (Sabre Holdings)
- Offload, scale query activity to MySQL read-only slaves
- Real-time access to web-based analytics, reporting
- Migration path from/to MySQL from other databases with minimal downtime
- MySQL Cluster Cert (in progress)
MySQL Enterprise Backup

- Online Backup for InnoDB
- Full, Incremental, Partial Backups (scriptable interface)
- Compression
- Point in Time, Full, Partial Recovery options
- Metadata on status, progress, history
- Unlimited Database Size
- Cross-Platform
  - Windows, Linux, Unix
- Certified with Oracle Secure Backup

Ensures quick, online backup and recovery of your MySQL apps.
Oracle Certifications: Secure Backup
Available Now

- MySQL Enterprise Backup images to tape (like RMAN)
- Via SBT interface (standard for MMS)
- Encryption, policy-based management, vault rotation
- Common management, SOP for Oracle, MySQL backups

```
mysqlbackup
  --port=3306
  --protocol=tcp
  --user=root
  --password
  --backup-image=sbt:backup-shoeprod-2011-10-02
  --backup-dir=/backup backup-to-image
```
Oracle Fusion Middleware (FMW)

Development Tools
Unified SOA Development Tool & Framework

User Interaction
Web 2.0 Portal, Rich Internet Apps, Mobile, Search, Desktop, Presence, VoIP

Enterprise Performance Management
Planning, Budgeting, Financial Management & Reporting, Scorecards

Business Intelligence
Data Integration, Query & Analysis, OLAP, Dashboards, Reports, Alerts, Real-Time

Content Management
Web Content, Documents, Digital Assets, Imaging, Records, Information Rights

SOA & Process Management
ESB, BPEL, PM, Workflow, BAM, Rules, B2B, MDM, Registry, SOA Governance

Application Server
Java EE, Web Services, Complex Event Processing, XTP, RFID & Sensors, SIP

Grid Infrastructure
Application Clusters, In-Memory Data Grid, Common Metadata Services

Enterprise Management
Provisioning, Diagnostics, Tuning, Configuration Management

Identity Management
Provisioning, Access Management, Federation, Audit, Directory

MySQL
Oracle Certifications: FMW

Available Now

• WebLogic Server
• Database Adapter for Oracle SOA Suite
• Oracle Business Process Management
• Oracle Virtual Directory
• Oracle Data Integrator
• Oracle Enterprise Performance Management
• Oracle Identity Analytics
• Open SSO STS, Open SSO Fedlet

All via MySQL 5.x JDBC driver

** 11.1.1.6 MySQL as a Metadata Repository option (planned)
Oracle Certifications: FMW Planned

- WebCenter Suite
- Enterprise Content Management
- Oracle Business Intelligence Suite
- Via MySQL 5.x JDBC driver
- MySQL as a Metadata Repository option
Oracle Integrations: DB Firewall
Available Now

• Network-based protection against
  • Unauthorized access
  • SQL injection
  • Privilege, role cloaking or escalation
  • Others
• Blocking, Logging, Reporting, console-based management
• Accurate platform specific grammar-based detection
• Oracle, MySQL, other non-Oracle databases
Oracle Integrations: Audit Vault/DBFW

Planned

• MySQL 5.5 audit stream
• Collects, consolidates audit data for all Oracle, MySQL servers
• Reporting, analysis, threat detection
• Centralized management, monitoring, compliance for Oracle, MySQL applications
• Plug-in for Oracle Enterprise Manager 11g and higher
MySQL Enterprise Monitor

- Web-based, global view of MySQL applications (on-premise and Cloud deployments)
- Automated, rules-based monitoring and alerts (SMTP, SNMP enabled)
- Query capture, monitoring, analysis and tuning, correlated with Monitor graphs
- Visual monitoring of “hot” applications and servers
- Real-time Replication Monitor with auto-discovery of master-slave topologies
- Integrated with MySQL Support

A Virtual MySQL DBA Assistant!
Oracle Integrations: MOS
Available Now

MySQL Enterprise Monitor
• Collect MySQL diagnostics and upload to MySQL Support
• Track MOS SRs from Enterprise Dashboard
Oracle Integrations: OEM
Planned
Oracle Enterprise Manager (12c)

Heterogeneous Environments

MySQL Monitoring Data via MP++ Grid Control plugin

MySQL Only Environments
Oracle Integrations: OEM Planned

Oracle Enterprise Manager (12c)

MySql Monitoring Data via MP++ Grid Control plugin

Heterogeneous Environments

MySQL Only Environments
MySQL Enterprise HA: Oracle VM
Protecting Against Planned/Unplanned Downtime

Planned Events
- Maintenance or upgrades
- Secure Live Migration
- Zero interruption

Failures
- Server, VM or database failure
- HA Auto-restart in pool
- Automatic failure detection & recovery

Pool Masters assure Secure Migration or HA restarts complete in the event of a Manager outage
MySQL Enterprise HA: Oracle VM Template for MySQL

Available Now

Fastest, simplest & most reliable way to deploy virtualized, cloud-ready MySQL instances, certified for production use

• Rapid DEPLOYMENT
• Increased RELIABILITY
• Higher AVAILABILITY
• Lower COST
MySQL Enterprise HA: Oracle VM

Template Components

- Oracle Linux with the Unbreakable Enterprise Kernel
- Oracle VM
- Oracle VM Manager
- Oracle Cluster File System 2 (OCFS2)
- MySQL Database (Enterprise Edition)

Pre-Installed & Pre-Configured Full Integration & QA Testing
Single Point of Support**

** Technical support for Oracle Linux and Oracle Virtual Machine requires Unbreakable Linux Network subscription.
Oracle Certifications/Integrations
Available Now, In Progress

- Oracle Linux
- Oracle Solaris
- In progress
  - Oracle ClusterWare
  - Oracle Cluster for Solaris
  - And more…
Oracle Premier Support for MySQL
Rely on The Experts - Get Unique Benefits

- Straight from the Source
- Largest Team of MySQL Experts
- Backed by MySQL Developers
- Forward Compatible Hot Fixes
- MySQL Maintenance Releases
- MySQL Support in 29 Languages
- Direct Access to MySQL Support Engineers
- 24/7/365
- Unlimited Incidents
- Knowledge Base
- MySQL Consultative Support

"The rep that assisted me was simply outstanding. He immediately recognized the cause of my problem and provided the resolution."
mysql.com/support/quotes

Only From Oracle
Ticketmaster.com

Application
Ticketmaster.com is an e-commerce website selling tickets for live concerts, professional and college sports teams, museums and theaters.

Key Business Benefit
By migrating from Microsoft SQL Server to MySQL and Oracle, Ticketmaster.com scales 4 times better and grows the number of customers from 10 million to 100 million.

Why MySQL and Oracle?
"At Ticketmaster, we use MySQL and Oracle to complement each other. The end result is a highly-distributed, optimal-performing database environment that powers one of the largest e-commerce and ticketing sites in the world."

Ed Presz
Sr. Director Database Engineering
Ticketmaster/Live Nation Entertainment, Inc.
Application
Real-time personalization platform to display advertising to more relevant buyers and conduct more effective merchandizing.

Key Business Benefits
Highly scalable and cost-effective system that handles all of eBay’s personalization and session data needs. Manages 4 billion requests per day of 50/50 read/write operations.

Why MySQL Enterprise?
• Cost-effective
• Performance: 13,000 TPS on Sun Fire x4100
• Scalability: Designed for 10x future growth
• Monitoring: MySQL Enterprise Monitor

Chris Kasten,
Kernel Framework Group, eBay
Tough Questions, Real Solutions

...performance issues?
- MySQL Enterprise Scalability
- MySQL Enterprise Monitor, Advisors, Query Analyzer
- MySQL Consultative Support

...servers down?
- Oracle Premier 24x7 Support
- MySQL Enterprise Monitor, Advisors
- MySQL Enterprise High Availability

...expensive, slow queries?
- MySQL Enterprise Monitor, Query Analyzer

Where/When/How to Tune?
- MySQL Enterprise Monitor, Advisors, Query Analyzer
- MySQL Consultative Support

...security policies, change?
- MySQL External Authentication
- MySQL Enterprise Monitor, Security Advisor

...Replication synch issues?
- MySQL Enterprise Monitor, Replication Monitor
- Oracle Premier 7x24 Support

...Developers productive?
- MySQL Workbench SE
- MySQL Enterprise Monitor, Query Analyzer

...version of MySQL to run?
- Oracle Premier 24x7 Support

...can I recover?
- MySQL Enterprise Backup

...will systems scale?
- MySQL Enterprise Scalability
- MySQL Enterprise Monitor, Advisors, Query Analyzer
- MySQL Consultative Support

...managing Oracle and MySQL databases?
- MySQL Enterprise Oracle Certifications/Integrations
Summary

Oracle is making MySQL better for all

MySQL can be deployed and managed using Oracle products

Use of MySQL with Oracle products is fully supported under MySQL Enterprise Edition
Learn More

- mysql.com
  - MySQL Products and Editions
  - TCO calculator
  - White Papers
  - Customer use cases and success stories
- dev.mysql.com
  - Downloads
  - Documentation
  - Forums
  - PlanetMySQL
- eDelivery.oracle.com
  - Download and evaluate all MySQL products
Hardware and Software

Engineered to Work Together