
MySQL Enterprise Monitor 2.3 Release Notes

Abstract

This document lists the changes to the MySQL Enterprise Monitor 2.3 product, beginning with the most recent release. Each release section covers added or changed functionality, bug fixes, and known issues, if applicable. For information about changes in a different MySQL Enterprise Monitor series, see the release notes for that series.

For additional MySQL Enterprise Monitor 2.3 documentation, see the [MySQL Enterprise Monitor 2.3.21 Manual](#).

For legal information, see the [Legal Notices](#).

For help with using MySQL, please visit either the [MySQL Forums](#) or [MySQL Mailing Lists](#), where you can discuss your issues with other MySQL users.

For additional documentation on MySQL products, including translations of the documentation into other languages, and downloadable versions in variety of formats, including HTML and PDF formats, see the [MySQL Documentation Library](#).

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Preface and Legal Notices

This document lists the changes to the MySQL Enterprise Monitor 2.3 product, beginning with the most recent release.

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Changes in MySQL Enterprise Monitor 2.3.21 (2015-09-03)

- [Functionality Added or Changed \[3\]](#)
- [Bugs Fixed \[3\]](#)

Functionality Added or Changed

- The OpenSSL library bundled with MySQL Enterprise Service Manager and MySQL Enterprise Monitor Agent has been upgraded to OpenSSL 1.0.1p.
- The bundled libcurl library was upgraded to 7.42.1.
- The MySQL database, bundled with the MySQL Enterprise Service Manager, has been upgraded to MySQL 5.5.45.
- The bundled Java Runtime Environment was updated to version 1.7.0_80.

Bugs Fixed

- The installer option `--mysql_ssl` was missing from the documentation and `--usessl` was not documented correctly.

Changes in MySQL Enterprise Monitor 2.3.20 (2015-02-17)

- [Functionality Added or Changed \[3\]](#)
- [Bugs Fixed \[4\]](#)

Functionality Added or Changed

- The OpenSSL library bundled with MySQL Enterprise Service Manager and MySQL Enterprise Monitor Agent has been upgraded to OpenSSL 1.0.1k. (Bug #20375561)
- The MySQL database, bundled with the MySQL Enterprise Service Manager, has been upgraded to MySQL 5.5.42.



Important

As of this release, MySQL Enterprise Monitor no longer supports Mac OS X.

- The bundled Java Runtime Environment was updated to version 1.7.0_76.

Bugs Fixed

- Tomcat did not start on Windows systems if VC2008 redistributable package was not installed. As of this release, the VC2008 libraries are included in the MySQL Enterprise Service Manager installation for Windows.
- SSL connections failed between the MySQL Enterprise Service Manager and the repository due to a premature expiry of the self-signed SSL certificates delivered with the installer and the upgrade installer.



Important

The SSL certificates delivered with the installers are for demonstration purposes only and are set to expire after 365 days. It is recommended you replace these certificates with your own when you install MySQL Enterprise Monitor.

Changes in MySQL Enterprise Monitor 2.3.19 (2014-12-11)

- [Functionality Added or Changed](#) [4]
- [Bugs Fixed](#) [4]

Functionality Added or Changed

- The OpenSSL library bundled with MySQL Enterprise Monitor and the MySQL Enterprise Monitor Proxy and Aggregator has been upgraded to OpenSSL 1.0.1j.



Important

As of this release, SSL V3.0 is disabled in MySQL Enterprise Monitor and MySQL Enterprise Monitor Proxy and Aggregator.

(Bug #19840580)

- The bundled Tomcat Native library was updated to version 1.1.32.
- The bundled JRE was updated to 1.7.0_72.

Bugs Fixed

- It was not possible to define a second SNMP target. The value defined in the **Target 2** field of the SNMP Settings was not saved. (Bug #19209139)

Changes in MySQL Enterprise Monitor 2.3.18 (2014-07-10)

Functionality Added or Changed

- The OpenSSL library bundled with MySQL Enterprise Monitor has been upgraded to OpenSSL 1.0.1h.



Important

If you are using IPv6 on Windows, you must remove the Tomcat Native Library (`tcnative-1.dll`) from the `\bin` directory of your Tomcat installation.

- The bundled libcurl library was upgraded to 7.36.0.
- The bundled Tomcat server was updated to version 6.0.41.

- The MySQL database, bundled with the MySQL Enterprise Service Manager, has been upgraded to MySQL 5.5.38.

Changes in MySQL Enterprise Monitor 2.3.17 (2014-05-21)

Functionality Added or Changed

- The bundled Tomcat server was updated to version 6.0.39.

Changes in MySQL Enterprise Monitor 2.3.16 (2014-04-17)

Bugs Fixed

- **Security Fix:** MySQL Enterprise Monitor 2.3.16 has been updated to use OpenSSL version 1.0.1g, which has been publicly reported as not vulnerable to [CVE-2014-0160](#). The Service Manager and Agent are updated to use OpenSSL 1.0.1g, and are now available for download. Please see [Oracle Note #1645479.1](#) for further details.

We also recommend users that are using an external MySQL 5.6 Commercial server for their repository to upgrade the external MySQL instance to the MySQL server 5.6.18 Commercial release. (Bug #18533200, CVE-2014-0160)

- A memory-management issue occurred in the MySQL Enterprise Monitor Agent if the agent was monitoring a slave instance whose master could not be contacted. (Bug #18074715)
- The bundled Java Runtime Environment was updated to version 1.7.0_55.
- The bundled cURL library was upgraded from 7.20.1 to 7.33.0.
- The bundled MySQL Server was upgraded to version 5.5.37, from 5.5.35.

Changes in MySQL Enterprise Monitor 2.3.15 (2014-01-09)

Bugs Fixed

- MySQL Proxy could crash during Agent shutdown if the plugin statistics were used. (Bug #17781739)
- Fixed a possible memory leak when the Agent rotated the log file. (Bug #17533175)
- The "InnoDB Doublewrite Buffer Activity" Graph label was written as "avg/sec" instead of "avg/minute". (Bug #16536714)
- On Mac OS X, the Agent Installer text was updated to reflect the installation type, as either a service ([launchctl](#)) or with [init.d](#). (Bug #16008126)
- The copyright text was updated for the Agent licenses.
- The bundled MySQL Server was upgraded to version 5.5.35, from 5.5.29.
- For the Agent and Aggregator, the bundled cURL was upgraded to version 7.33.0.

Changes in MySQL Enterprise Monitor 2.3.14 (2013-09-09)

Bugs Fixed

- MySQL Enterprise Monitor Agent would cause MySQL Enterprise Backup to hang if the monitored MySQL instance had [autocommit=0](#) set. The Agent will now set [autocommit=1](#) at startup. (Bug #16477988)

- The bundled Java runtime environment was updated to version 1.7.0_25.

Changes in MySQL Enterprise Monitor 2.3.13 (2013-02-19)

MySQL Enterprise Monitor no longer supports Mac OS X 10.5.

- [Functionality Added or Changed](#) [6]
- [Bugs Fixed](#) [7]

Functionality Added or Changed

- The following advisors and graphs were added, most of which relate to features introduced with MySQL Server 5.6:

New advisors:

- [Binary Log Debug Information Disabled](#)
- [Host Cache Size Not Sufficient](#)
- [SHA-256 Password Authentication Not Enabled](#)
- [Binary Log Row Based Images Excessive](#)
- [Binary Log Checksums Disabled](#)
- [Master Not Verifying Checksums When Reading From Binary Log](#)
- [Slave Not Verifying Checksums When Reading From Relay Log](#)
- [Slave SQL Processing Not Multi-Threaded](#)
- [Slave Master Info/Relay Log Info Not Crash Safe](#)
- [Policy-Based Password Validation Does Not Perform Dictionary Checks](#)
- [Policy-Based Password Validation Is Weak](#)
- [Policy-Based Password Validation Not Enabled](#)
- [InnoDB Change Buffering Is Not Entirely Crash-Safe](#)

New graphs:

- [InnoDB Undo Logs](#)
- [InnoDB Open Files](#)
- [InnoDB Data Dictionary Memory](#)
- [Rows Returned](#)
- [Statement Errors and Warnings](#)
- [Statement Statistics](#)

(Bug #16093114)

- The Connector/J plugin now supports `EXPLAIN DML` with MySQL Server 5.6.3 and above. Earlier versions of MySQL Server only supported `EXPLAIN` for `SELECT` statements. (Bug #15968762)

Bugs Fixed

- The Connector/NET plugin would not function with Connector/NET version 6.5.5 or 6.6.5. The current Connector/NET plugin version was updated from 1.0.4 to 1.0.5. (Bug #16370490)
- The MySQL Enterprise Monitor Agent no longer supports Mac OS X 10.5. (Bug #16250268)
- Unread `agent-instance.ini` configuration files (due to improper permissions, as '0660' or stricter is required) now logs these as a permission related errors, and refers to the required '0660' or stricter requirement. (Bug #16236601)
- The bundled OpenSSL library was upgraded from 0.9.x to 1.0.x. (Bug #16219855)
- The bundled MySQL Server has been upgraded to version 5.5.29. The previous version was 5.5.28.



Note

Beginning with MySQL Server 5.5.29, Oracle no longer provides binaries for Mac OS X 10.5. Therefore, MySQL Enterprise Monitor no longer supports Mac OS X 10.5 (leopard).

(Bug #16023775)

- On Solaris, MySQL Enterprise Monitor Agent would sometimes crash during startup (or with `--agent-run-os-tests`) while CPU information was being gathered. (Bug #16003322)
- The deprecated `SHOW INNODB STATUS` query was updated for the "Too Many Concurrent Queries Running" advisor, and it is now written as `SHOW ENGINE INNODB STATUS`. (Bug #15985753)
- The Connector/J plugin would occasionally emit an exception that related to the "Query Analysis EXPLAIN Thread Pool." (Bug #15968762)
- The Upgrade Advisor was updated to check for Oracle Bug #14636528 (MySQL Bug #66819), which is titled "InnoDB Change Buffering Is Not Entirely Crash-Safe." (Bug #15948756)
- The agent Uninstaller would not remove the bundled MySQL Client library if the `--createaccount` option was used during the agent installation via the command-line. (Bug #15850473)
- The MySQL Enterprise Monitor Agent Installer no longer checks for a MySQL Client on the host, as the Installer will always use the bundled MySQL Client. Before it would check the local `PATH` for the MySQL Client, and use it if found.



Note

MySQL Client 5.6.10 is bundled.

(Bug #15839675)

- On Microsoft Windows 8, the icons were updated for the add/remove programs menu, the start menu, and tiles interface. (Bug #15837695)
- The Windows 8 operating system was reported as Windows 7. (Bug #14849158)
- The MySQL Enterprise Monitor Agent would not properly report memory usage if running inside a Solaris zone. 64-bit versions of Solaris is now supported. (Bug #14810099)

- The Query Analyzer reported an inaccurate value for "bytes" and "rows" if the result set contained a [NULL](#) value in the first column. (Bug #14779754)
- The "Excessive Number of Long Running Processes Locked" rule now supports [Metadata locking](#), when before the rule only looked for sessions with a state of "Locked." Metadata locking exists as of MySQL Server 5.5.3. (Bug #14766751)
- MySQL Enterprise Service Manager could not be installed using MySQL Server 5.6 as the internal MEM repository, as the installation wizard did not detect the requirements for InnoDB and partitioning support. (Bug #14698648)
- On Microsoft Windows, the [MySQLEnterpriseTomcat](#) registry keys were not removed when MySQL Enterprise Service Manager was uninstalled. (Bug #14587987)
- The [have_innodb](#) variable is no longer used, because it does not exist as of MySQL Server 5.6.1. There is no change in Advisor behavior. (Bug #14494817)
- The Installer/Upgrader would allow newline characters in the MySQL server password during setup, but MySQL Enterprise Monitor would fail to use them properly. (Bug #14381330)
- Upgraded the bundled Tomcat Native, APR, and OpenSSL applications.
- The bundled MySQL Client with MySQL Enterprise Monitor Agent has been upgraded to version 5.6.10. The previous MySQL Client version was 5.5.16.

This allows the MySQL Enterprise Monitor Agent to support MySQL Server 5.6 features, such as the SHA-256 Authentication Plugin.

Changes in MySQL Enterprise Monitor 2.3.12 (2012-09-19)

- [Functionality Added or Changed](#) [8]
- [Bugs Fixed](#) [8]

Functionality Added or Changed

- Added a new "Swap IO Operations" graph that graphs the average number of pages in/out per second. (Bug #14629874)
- The backup dialogue of the service manager upgrade process now reports the current version number. (Bug #12990649)

Bugs Fixed

- Attempting to load the agent plugin into the [mysql-aggregator](#) frontend would crash the agent plugin. (Bug #14615652)
- The Installer/Upgrader would attempt to upgrade the bundled MySQL Server 5.5 even if version 5.5 was already installed. It will now only attempt to upgrade MySQL Server if upgrading from a version prior to MySQL Enterprise Monitor 2.3.10, which is when MySQL Server version 5.5 was first bundled. (Bug #14556581)
- The [insecure_password_generation_option_is_enabled](#) rule was updated to work with MySQL Server 5.6.6+ which changed the [old_passwords](#) variable from a [boolean](#) to an [ENUM](#). (Bug #14461496)
- The [MOD\(\)](#) function was added to the expression parser. (Bug #14362771)

- On Mac OS X, the agent would report Mac OS X versions 10.7 and 10.8 as "Mac OS X Unknown" but the agent now shows the proper version number. (Bug #14249772)
- The Installer/Upgrader would not escape the MySQL username during execution, thus halting the installation (bad flag) if a username contained a special character, like a pipe symbol. (Bug #14007586)
- The agent Installer/Upgrader would generate two backup copies of the `monitor-agent.ini` configuration file. (Bug #13984821)
- The agent Installer/Upgrader did not back up unknown files, but the backup now includes all files. (Bug #13929281)
- The agent would not terminate on some older Linux systems, when the `--user` option was used. (Bug #13920294)
- On Microsoft Windows, the reference to the `runtime` directory in the `log-bin` definition was removed from the bundled `my.ini` in the Installer. (Bug #13437201)
- The bundled MySQL Server has been upgraded to version 5.5.28. The previous version was 5.5.25a.

Changes in MySQL Enterprise Monitor 2.3.11 (2012-07-05)

- [Functionality Added or Changed](#) [9]
- [Bugs Fixed](#) [9]

Functionality Added or Changed

- Added a "Disk IO Operations" graph that shows the average number of disk operations per second. (Bug #14160174)
- Initialization (start up) of the agent is now logged. (Bug #14036975)

Bugs Fixed

- Upgraded the bundled JRE to version 1.6.0_33. (Bug #14198769)
- The bundled MySQL Server has been upgraded to version 5.5.25a. The previous version was 5.5.21. (Bug #14138630)
- The partitioning purge operation could fail if a setup monitored a large number of partitions. (Bug #14077999)
- The `pdb` files for plugins were missing, which are helpful for debugging crashes. (Bug #14061968)
- Some error messages would generate an extra newline, thus creating the illusion of two errors. (Bug #14037015)
- The agent would crash if reconnecting to the MySQL Server would fail during initialization. (Bug #14007919)
- On Ubuntu 12.04, the `libaio` library was not detected by the service manager installer. (Bug #13875287)
- Links created in the alert e-mails to servers with display names that included the pipe (|) symbol were broken. (Bug #13824473)
- On Mac OS X 10.6, a `--pid-file` configuration option was added by the agent installer. This unnecessary option has since been removed, as `launchd` is used instead. (Bug #13738642)

- The Aggregator version now updates with each build, when before it remained at version number 0.1.0. (Bug #13635215)
- The query analysis plugin would remain loaded after restarting the J(2)EE application server with the Connector/J query analyzer plugin enabled. A ContextListener option has now been implemented.

See the [query analysis with Connector/J](#) documentation for more information, including a workaround for earlier versions. (Bug #65516, Bug #14155388)

Changes in MySQL Enterprise Monitor 2.3.10 (2012-04-27)

- [Functionality Added or Changed](#) [10]
- [Bugs Fixed](#) [10]

Functionality Added or Changed

- Added four new InnoDB graphs: InnoDB Row Lock Time (the total time spent acquiring row locks), InnoDB Row Lock Time Statistics (the average and maximum time spent acquiring row locks), and InnoDB Row Lock Wait (the number of times a row lock had to be waited for), and InnoDB Redo Log Checkpoint Lag (tracks both flush and checkpoint differences against the maximum log file size). (Bug #13855084, Bug #13855055, Bug #13854527)
- Added four new prepared statement graphs: Prepared Statement SQL, Prepared Statement API, Prepared Statement API Invalidations (stmt_reprepare), and Prepared Statement Utilization (Open/Max).

The [SQL](#) and [API](#) variants differ in that there are two forms of prepared statements. Those within SQL, such as `"PREPARE ...; EXECUTE ...; DEALLOCATE PREPARE ...;"`, and those using the protocol API, such as `"mysql_stmt_init(...); mysql_stmt_prepare(...); mysql_stmt_execute(...); mysql_stmt_fetch(...); mysql_stmt_close(...);"`. (Bug #13854916)

- Added the `innodb_log_sequence_lsn64` `innodb_log_flushed_lsn64` `innodb_log_checkpoint_lsn64` data collection items, which are 64-bit variants of their *_lsn counterparts. (Bug #13854527)
- The [mysqlenterprise.disableSourceLocation](#) property was added to the Connector/J plugin, and defaults to `false`. (Bug #13789241)
- Added a [Query Cache Fragmentation advisor](#) and graph. (Bug #13743414)
- The bundled MySQL version has been upgraded to version 5.5.21. The previous version was 5.1.56.

Note: On Linux, MySQL Server 5.5.10 and greater depends on the `libaio` library being available on the server. Therefore, this dependency affects the bundled MySQL Server. Solaris, Windows, and Mac OS X enable AIO functionality by default. (Bug #13599824)

- Added the following configuration options: [proxy-connect-timeout](#), [proxy-read-timeout](#), and [proxy-write-timeout](#). (Bug #13332197)
- Added several new error log entries.

New `message` level entries: Failed and accepted authentications, and connections to MEM servers.

New `debug` level entries: HTTP traffic, both requests and responses. (Bug #51773, Bug #11759454)

Bugs Fixed

- On FreeBSD, the GUI version of the installer no longer supports GTK. The [X Windows](#) GUI is still supported, and is the new default type. (Bug #13974672)
- The [LEFT\(\)](#), [RIGHT\(\)](#) and [NUM\(\)](#) functions were added to the expression parser. (Bug #13958008)
- The "Query Cache Has Sub-Optimal Hit Rate" rule would trigger a critical alert when more than 25% of the cache was free, instead of when more than 25% of the cache was used. (Bug #13921932)
- The Installer/Updater would emit a warning when the required [libaio](#) was not detected, but it would continue with the incomplete installation. It now prompts to enter the path, and the unattended installer exits with an error. (Bug #13875287)
- The MySQL Enterprise Backup temporary table [mysql.ibbackup_binlog_marker](#) is now excluded from the "User Has Rights To Table That Does Not Exist" advisor. (Bug #13874149)
- The [InnoDB Row Lock Detail](#) graph was updated to work properly with MySQL Server 5.5+. (Bug #13855055)
- The [JSON](#) variants of the diagnostic information was removed from the downloadable package generated by [Manage Servers](#), [Support Diagnostics](#). (Bug #13851543)
- The Update script would not update properly if a non-bundled version of MySQL was used previously, and a version configured as localhost or 127.0.0.1. (Bug #13847215)
- The "Excessive Number of Long Running Processes" rule was updated to ignore replication threads, as binlog dump entries are now ignored. (Bug #13841872)
- The Query Analyzer plugin would fail to load with [Connector/J](#) when [useInformationSchema=true](#) was used in the JDBC connection URL. (Bug #13807492)
- When an agent is used along with MySQL Enterprise Agent Proxy Service, the [LOAD DATA LOCAL INFILE](#) statement could cause memory exhaustion with large files, due to the entire file/query being buffered before execution. (Bug #13795425)
- Updated the "Query Cache Not Enabled" description, along with its associated advice. The new suggested size is "[query_cache_size = 32M](#)" instead of "[query_cache_size = 25% of total RAM](#)." (Bug #13743390)
- It was not possible to delete multiple servers within the [Manage Servers](#) dashboard. Attempting to do so would result in an error. (Bug #13723310)
- When performing an update install of the Agent on a 2.3+ MySQL Enterprise Monitor release, the [mysql-monitor-agent.ini](#) and [agent-instance.ini](#) ini files are now fully preserved during the update, which includes custom comments and options. Updating from a 2.2 or earlier MySQL Enterprise Monitor release will behave as done previously, which is to only preserve known ini+value pairs. (Bug #13650743, Bug #13583872)
- When using the Japanese locale, zooming into any graph with "[All Servers](#)" set would emit an unreadable graph title. (Bug #13648133)
- When using the Japanese locale, requesting a report via [Manage Servers](#), [support diagnostics](#), would produce a broken link to the report. (Bug #13646277)
- Line endings (such as [\n](#)) are now stripped from logged ssh keygen errors. The [debug](#) log level continues to include the unstripped ssh stdout messages. (Bug #13645718)
- On Microsoft Windows, the [gspawn-win32-helper-console](#) tool would fail to install. (Bug #13645684)

- On Mac OS X, if `ssh-keygen` fails with an error message to stdout, then the exit code was not honored. In other words, `--agent-ssh-keygen-retry` now functions properly. (Bug #13644842)
- During the initial discovery of a server, MySQL Enterprise Monitor would emit a `ServerDoesNotExistException` exception. (Bug #13632006)
- Upgrading MySQL Enterprise Monitor could create a broken .ini file, by removing the host from certain ini settings. For example, it would change `aggr-ssl-address = 127.0.0.1:3357` into `aggr-ssl-address=:3357`. Affected ini settings were `aggr-ssl-address`, `aggr-address`, and `proxy-address`. (Bug #13626844)
- The recently (2.3.9) introduced `--agent-ssh-keygen-attempts` and `--agent-ssh-keygen-retry` options did not function properly, but now work with all operating systems. (Bug #13392272)
- Sorting the **Manage Servers** page by **Agent** would sometimes result in an unhandled exception. (Bug #13335253)
- On Mac OS X 10.6, the Agent did not use `launchd` correctly and would crash in `Gestalt`. (Bug #12768198, Bug #13738592)
- The Installer/Upgrader would not back up all files. The mechanism that chooses which files are backed up has changed from a whitelist to a blacklist. (Bug #12678942)
- With Internet Explorer 8.0, the bullet list on the left side of the "What's New?" page would be hidden.

Changes in MySQL Enterprise Monitor 2.3.9 (2012-01-31)

- [Functionality Added or Changed](#) [12]
- [Bugs Fixed](#) [12]

Functionality Added or Changed

- Added an index for the graph names, which also includes links to individual graphs. (Bug #13626146)

Bugs Fixed

- The `Graph Gallery` link now opens in a new window. (Bug #13607986)
- Failed ssh-keygen results would not log errors.

And added the `--agent-ssh-keygen-attempts` and `--agent-ssh-keygen-retry` options, which are used for retrying failed keygens. (Bug #13391959)

- When the `Aggregator` receives an invalid JSON message over an HTTP/1.1 connection, it would send a "Connection: close" header in its response, and close the connection instead of remaining open and processing further requests on the same connection. (Bug #13059645)
- The `agent-report-network-fs` setting did not honor the `os::disk` class. So now, for example, it affects `NFS` mount points. (Bug #12836239)
- On Mac OS X, the `keepalive` option now defaults to `false` in the distributed `mysql-monitor-agent.ini` file, in that it is now commented out. (Bug #12768198)
- The `Aggregator` plugin did not log the Aggregator version at startup. (Bug #51743, Bug #11759427)
- The Installer/Upgrader would not escape the MySQL password during execution, thus halting the installation (bad flag) if a password contained a special character, like a pipe symbol. (Bug #48219, Bug #11756314)

Changes in MySQL Enterprise Monitor 2.3.8 (2011-12-02)

- [Functionality Added or Changed](#) [13]
- [Bugs Fixed](#) [13]

Functionality Added or Changed

- The [Replication](#) tab has been enhanced with columns, icons, and server tree that highlight more aspects of replication status and [topology](#).
- Several new [collections](#), [rules](#), and [graphs](#) were added in support of the Thread Pool plugin.

The following new rules were added:

- **Thread Pooling Not Enabled**: Recommends to enable thread pool when concurrent activity is high.
- **Thread Pool Stall Limit Too Low**: Recommends settings for the [thread_pool_stall_limit](#) variable based on the stall rate, which you can see in the new **Thread Pool Stall Rate** graph).

The following new graphs were added:

- **Thread Pool Current Threads**: Current thread counts by type.
- **Thread Pool Statement Activity**: Statement activity by type for the past interval.
- **Thread Pool Stall Rate**: The percentage of threads stalled in the last interval.
- **Thread Pool Queue Age**: The current longest wait time in the thread queues.
- **Thread Pool Queues**: The number of statements within each queue waiting to run.

The following rules were added or changed:

- Updated the **Too Many Concurrent Users** rule, to kick in at the same time as recommending the Thread Pool plugin (now at 32).
- Updated Security rules to take the new **External Authentication** plugins into account.
- Added the **Server Has No Locally Authenticated Root User** rule. Each server should have at least one locally authenticated administrative user.
- Added all of the new custom and variables items for the new plugins.

Bugs Fixed

- When the Agent connected to an IPv6-enabled MySQL 5.5 server on the same machine, the local nature of the connection was not recognized. This issue could lead to problems collecting data items related to the operating system and replication. (Bug #13365142)
- When using LDAP authentication with the **Map LDAP Roles to Application Roles** feature, after switching the user to not be authenticated via LDAP, their role could not be changed. (Bug #13253829)
- MEM Incorrectly displays notification details for an alert the first time an alert goes out for When notification details were added to a rule after the rule was scheduled, the popup for the alert details displayed [No Notification Set](#), even though the notifications were sent out. Now the popup for the alert details shows the correct notification settings. (Bug #13244784)

- Added a new Agent configuration option: `--aggr-max-request-body-size`, with a default value of 1048576 (1 MB). This option limits the maximum size of requests sent to the **Aggregator**, to avoid potential out-of-memory errors on the system running the **Agent** (and its Aggregator component). (Bug #13112696)
- The expression parser for rules has a new function, `IF`: `IF (condition, true_expression, false_expression)` returns either `true_expression` or `false_expression`, depending on whether `condition` is true or false. This function uses short-circuit evaluation, so only one of the return expressions is evaluated. (Bug #13102893)
- A new rule (**Cluster Has Stopped**) and new graph (**Cluster Data Nodes in Ready State**) help to determine if a MySQL Cluster system is entirely unavailable. (Bug #13036986)
- SNMP `closed` traps are now sent correctly when MySQL Enterprise Monitor events are auto-closed. (Bug #13035347)
- This fix addresses a possible hang when connecting via MySQL Enterprise Agent Proxy Service using a user authenticated with the Windows Native authentication plugin. (Bug #13019991)
- When doing an upgrade install of the Agent, the values of the parameters `agent-DNS-cachetimeout` and `agent-IP-version` are preserved in the `mysql-monitor-agent.ini` configuration file, rather than being reset to their defaults. (Bug #13016321)
- A new rule (**Account Requires Unavailable Authentication Plugins**) checks whether some accounts on a MySQL server require any of the authentication plugins introduced in MySQL 5.5.16, when the applicable plugin is not loaded or not enabled in the server. (Bug #13013376)
- The Dashboard could incorrectly list MySQL servers on 64-bit Windows systems as being 32-bit systems. (Bug #13007347)
- The MySQL Enterprise Monitor upgrade installer now automatically handles the case where the `datadir` configuration option for the **repository** database using the **bundled** MySQL server was switched to a non-default location, such as a disk partition with more space. Previously, this configuration could not be upgraded automatically, and the resulting error message could erroneously report that your bundled MySQL server was a “remote instance”. (Bug #12999301, Bug #12860005)
- A number of replication-related items were added to the **Replication** tab:
 - `Slave_received_heartbeats`.
 - `rpl_`% configuration options and `Rpl`% status variables. (In particular, to designate the asynchronous or semi-synchronous nature of each replication server.)
 - `slave`% configuration options and `Slave`% status variables.

This information is represented on the **Replication** tab as icons in the Server Tree and as fields in the replication info popup window for each server.

The following **graphs** were also added:

- **Replication Slave Relay Log Space Usage**
- **Replication Master Semi-Sync Waits**
- **Replication Master Semi-Sync Wait Time Averages**
- **Replication Master Semi-Sync Waiting Sessions**

- **Replication Master Semi-Sync Transactions**

(Bug #12660632, Bug #61510)

- The Dashboard was listing the operating system incorrectly for servers running Oracle Enterprise Linux 6. (Bug #12537844)
- The agent would stop monitoring an instance after encountering a timeout error trying to read the `mysql.inventory` table. Now the agent retries the operation rather than shutting down. The retry behavior is controlled by the new `agent-instance.ini` agent configuration options `connection-init-retry-attempts` and `connection-init-retry-delay-ms`. For more information about these new options, see [MySQL Server \(agent-instance.ini\) Configuration](#). (Bug #59439, Bug #11766345)

Changes in MySQL Enterprise Monitor 2.3.7 (2011-09-29)

- [Functionality Added or Changed \[15\]](#)
- [Bugs Fixed \[15\]](#)

Functionality Added or Changed

- MySQL Enterprise Monitor 2.3.7 includes partial support for the authentication plugins introduced in MySQL 5.5.16. MEM supports using the PAM Authentication plugin in certain configurations:
 - The MySQL Enterprise Agent can connect to the monitored server using the [PAM Authentication plugin](#) for authorization.
 - MySQL Proxy supports the PAM authentication plugin.
 - Although none of the Connectors distributed with MEM currently support MySQL 5.5.16's [pluggable authentication feature](#), applications linked with the `libmysqlclient` library can send data through the Proxy to the Query Analyzer when the PAM plugin is in use.

MySQL Enterprise Monitor currently does not support the [Windows Native Authentication plugin](#) for connections from the Agent or the Proxy.

- MySQL Enterprise Monitor now includes a new Connector plugin, MySQL Enterprise Plugin for Connector/PHP. This new feature lets you use the Query Analyzer with PHP-based applications. See [Using the MySQL Enterprise Plugin for Connector/PHP](#) for details.

Bugs Fixed

- Attempts to check the MyOracle Support web site could fail with the message:

```
There is a problem checking Advisor Bundle updates and My Oracle Support
issues. If the machine running the Enterprise Monitor can directly connect to
the internet, make sure your My Oracle Support credentials are correct. If
there is no direct internet access, you may need to configure an HTTP proxy.
```

(Bug #12992001)

- The open/closed state for some nodes in the Server Tree was not remembered correctly when the Server Tree grew to a large number of entries. (Bug #12976291)
- Doing an upgrade of the MySQL Enterprise Monitor server overwrites any contents in the library directory of the bundled Tomcat server. Previously, certain files in that directory were preserved during

an upgrade. MySQL Enterprise Monitor now bundles the Apache Tomcat Native Library, removing the need for users to add or manage their own files in that directory. (Bug #12972364)

- Using non-printable escaped characters in the `agent-mgmt-password` field of the Agent configuration file could cause a crash when starting the Agent. (Bug #12951686)
- After installation of the MySQL Enterprise Monitor server, an attempt to access the dashboard could result in a 404 error, with error messages in the monitor and Tomcat logs referring to a bean named `sigar`. (Bug #12940323)
- The Agent was upgraded to the MySQL 5.5.16 `libmysqlclient` library on the Solaris 10 x86 32-bit platform. (Bug #12927677)
- After deleting a large number of servers and associated schedules, rules, and so on from the Server Tree, the Dashboard report show an error (`ScheduleDoesNotExistException`) when returning to the main page. (Bug #11762672, Bug #55294)

Changes in MySQL Enterprise Monitor 2.3.6 (2011-09-06)

- [Functionality Added or Changed \[16\]](#)
- [Bugs Fixed \[16\]](#)

Functionality Added or Changed

- A new graph is available, displaying the average size of queries in the query cache. See [Query Cache Average Query Size graph](#) for details. (Bug #12825244)
- A new graph is available, displaying query cache fragmentation. See [Query Cache Fragmentation graph](#) for details. (Bug #12825023)
- On the **Global Settings** tab, you can now customize how server names are displayed, to remove repetitive information. You can omit standard port numbers, omit the domain portion of the host names, or even set up abbreviations and nicknames based on substitution patterns. (Bug #11750223, Bug #40658)

Bugs Fixed

- The `libmysqlclient` library linked with the Agent has been upgraded to the MySQL 5.5 level. This change is necessary for compatibility with the new MySQL authentication plugins in MySQL 5.5. (Bug #12906175)
- The rules that check for accounts with no passwords were enhanced to avoid false positive warnings for accounts that authenticate using the new MySQL 5.5 authentication plugins. Such accounts have no passwords listed in the `mysql.user` table. The rules now also check the plugin column of that table. This change applies to the rule [Server Has Accounts Without A Password](#) and the `mysql:no_password` data collection item. (Bug #12906122)
- The Service Manager could fail to parse certain service request items retrieved from the My Oracle Support web site. (Bug #12861143)
- If you change the `data-dir` parameter of the MySQL Enterprise Monitor repository database, to store the table data outside the `monitor/mysql/data` subdirectory of the MEM installation directory, the upgrade process is more complex than usual. The fix for this bug corrects a misleading error message that was issued when such a MEM instance was upgraded:

Warning: We have detected that you are using your own remote instance of the MySQL server... It appears that the MySQL Server data directory has been moved from its standard location. Automatic upgrades of such a configuration are not supported.

(Bug #12860005)

- The advisor [MySQL Agent Not Reachable](#) could produce incorrect [agent_not_reachable.name](#) errors depending on network-related factors. The fix turns off the auto-close property for this advisor. The auto-close property for this advisor will also be turned off if necessary at other checkpoints, such as importing a new advisor bundle. (Bug #12846715)
- A new graph is available, displaying information about slow queries, corresponding to the [Slow_queries](#) section of the [SHOW GLOBAL STATUS](#) output. See [Slow Queries graph](#) for details. (Bug #12824418)
- The [Update Advisors](#) button on the [Global Settings](#) tab would incorrectly downgrade the Advisors JAR file to 2.3.4. (Bug #12720308)
- Corrected the recommended action for the rules [Table Cache Not Optimal](#) and [Table Cache Set Too Low For Startup](#) so that the commands worked when pasted to a [mysql](#) command prompt. (Bug #12686506)
- The advice for the [No Value Set For myisam-recover](#) rule was changed to reflect the new name [myisam-recover-options](#), which applies to MySQL 5.5.3 and higher. (Bug #12660628, Bug #61522)
- A stored procedure call to a MySQL 5.5 server could hang (never return) when the connection went through the MySQL Enterprise Monitor Agent proxy. (Bug #12567070)
- If a [GRANT](#) statement used a SQL-style wildcard ([%](#) or [_](#)) in the database name, the rule [User Has Rights To Database That Does Not Exist](#) could produce an incorrect alert. For example, this statement could cause a false positive when evaluating the rule expression:

```
GRANT SELECT ON `test_%`. * TO 'testuser'@'localhost';
```

(Bug #12368217, Bug #60677)

- The rule [Key Buffer Size May Not Be Optimal For System RAM](#) was updated to also check whether the buffer usage has been greater than 75% of system RAM. (Bug #11897242, Bug #60586)
- The upgrade installer could incorrectly report that settings for the repository database differed from the recommended settings. The configuration values are now checked using a case-insensitive comparison. (Bug #11764095, Bug #56891)
- Clarified the action for the message [An item was expired by the cache while it was locked \(increase your cache timeout\)](#). Edit the [apache-tomcat/webapps/ROOT/WEB-INF/classes/com/mysql/etools/monitor/pom/hib/ehcache-mysql.xml](#) file, increasing the value for [maxElementsInMemory](#) so that it is greater than the number of rows in the MySQL Enterprise Monitor [inventory_instance_attributes](#) table. (Bug #11756695, Bug #11748818, Bug #48642, Bug #37435)

Changes in MySQL Enterprise Monitor 2.3.5 (2011-07-01)

- [Functionality Added or Changed \[17\]](#)
- [Bugs Fixed \[18\]](#)

Functionality Added or Changed

- A new blog at <http://blogs.oracle.com/mysqlenterprise/> displays announcements, current news, and tips and tutorials about the MySQL Enterprise Monitor product. You can subscribe to RSS or Atom feeds, linked from this page, to be notified when software updates are ready.

Bugs Fixed

- The rule `Last Full MySQL Enterprise Backup Too Old` was not evaluated correctly. The corresponding event could return a status of `Unknown`, `Failure`, and sometimes an incorrect `Success` status. (Bug #12683985)
- After an upgrade, certain rule evaluations cause errors with messages such as `variable was not found in the symbol table` or `java.lang.RuntimeException: Could not evaluate variable: the variable was not found in the symbol table`. If you encounter such errors after an upgrade to MySQL Enterprise Monitor 2.3.4, upgrade to the latest 2.3.5 to fix them. (Bug #12665766)
- The disk space usage graph was not available on Red Hat Enterprise Linux 5 or 6. If you encountered this issue, use the `refresh inventory` feature in the `Manage Servers` tab on affected servers, after upgrading, to restore the graphs. (Bug #12622140)
- The format of the file name when a graph is exported as a `.png` file was made consistent with the file name for the `.csv` export. (Bug #12592347)
- Added the following new InnoDB-related items to graphs:
 - Added an `Old` series to the `InnoDB Buffer Pool` graph.
 - Added a `Redo Log` series to the `InnoDB OS File Access` graph.
 - New graph `InnoDB Buffer Pool Page Activity`.
 - New graph `InnoDB Buffer Pool Pending Operations`.
 - New graph `InnoDB Change Buffer Usage`.
 - New graph `InnoDB Change Buffer Activity` (two graphs, `pre` and `post 5.5` versions).
 - New graph `InnoDB Doublewrite Buffer Activity`.
 - New graph `InnoDB Redo Log Pending Writes`.(Bug #12589662, Bug #61277)
- An error could occur during expression evaluation, of the form `> not defined for object of type java.lang.String and java.lang.String`. This error could result in some graphs not being displayed, such as the `Replication Delay` graph. (Bug #12589645, Bug #61242)
- An unnecessary message about username and password prompts was displayed during unattended installation. This message is now suppressed. (Bug #12584441)
- The `uninstall` file was missing from the backup directory created by the upgrade installer. (Bug #12583219)
- Auto-close notes can now be changed on a scheduled rule at any time, not just if the rule or schedule is enabled for auto-close. (Bug #12564331)
- On Windows systems, running the command `mysqlmonitorctl.bat install`, for example to reinstall the Windows services after a problem with an upgrade install, would change the

`DISPLAY_NAME` to be the same as the `SERVICE_NAME`, removing the spaces in the name. (Bug #12424445)

- A rule was added to check if the MySQL instance contains time zone data required for the `CONVERT_TZ` function to work properly. See [MySQL Server Time Zone Support](#) for background information about time zone support, and [mysql_tzinfo_to_sql — Load the Time Zone Tables](#) for the utility to load time zone data into MySQL. (Bug #11933240, Bug #60676)

Changes in MySQL Enterprise Monitor 2.3.4 (2011-05-25)

- [Functionality Added or Changed \[19\]](#)
- [Bugs Fixed \[19\]](#)

Functionality Added or Changed

- Graphs that are produced on the Dashboard pages can now be saved in either `.csv` format (the raw data for the graph) or `.png` format (an image file showing the rendered graph). Where graphs are displayed on the **Monitor**, **Graphs**, and **Query Analyzer** pages, 2 icons to the right of the graph title let you export in these formats. Hover over the icon to confirm which one corresponds to which format. Since `.png` files typically display in the browser rather than bringing up a Save dialog, either click the icon and save the image file on the resulting page, or bring up the context menu for the icon and choose **Save linked file** or the equivalent for your browser. (You might need to change the extension to `.png` in the Save dialog.) (Bug #11754772, Bug #46431)
- The method of evaluating functions and expressions now uses the Java Expression Parser. The available choices are different. If you use custom rules with functions that are not implemented under the Java Expression Parser, file a [service request](#) with the requirement. For details, see [Overview of Rule Creation](#).
- A new option, `inventory-schema = schema_name`, within the `agent-instance.ini` configuration file, lets you specify a schema other than `mysql` in which to create the inventory table that records the UUID for a MySQL server.

Bugs Fixed

- Oracle has discontinued support for the Intel Itanium platform. We plan to discontinue building MySQL Enterprise Monitor service manager and agent binaries for this hardware platform.

Per the Oracle/MySQL Support Lifecycle policy regarding ending support for OS versions that are obsolete, have reached end of life, or have little usage pattern, we plan to discontinue building MySQL Enterprise Monitor agent binaries for certain operating systems.

See <http://www.mysql.com/support/eol-notice.html> for details of these EOL announcements. (Bug #12565806)

- The `Query Cache Has Sub-Optimal Hit Rate` rule was updated to avoid false positives on systems with little query activity. The rule only triggers an alert when a significant amount of data is held in the query cache memory. (Bug #12543416, Bug #61111)
- When using variable substitution for Alerts, now you can substitute in all fields using the GUI. Formerly, substitution was only allowed in the `Advice` and `Recommended Action` fields. (Bug #12537816)
- The “Excessive Number of Long Running Processes” rule was updated to also ignore the `Waiting for master to send event` and `Has read all relay log; waiting for the slave I/O thread to update it` replication thread states, as these are also classed as idle states. (Bug #12531640, Bug #61081)

- Incorrect `AlarmAlreadyClosedException` messages could be logged if the current “active” alarm was already closed, especially if the alarm was scheduled to be automatically closed. (Bug #12531141)
- The Update installer for the Service Manager did not back up all original directories. The following files and directories were missing from the backup:

```
./version.txt
./mysql/docs/*
./mysql/man/*
./mysql/README
./mysql/sql-bench
./mysql/ssl
```

(Bug #12424290)

- If you made any changes to the file `apache-tomcat/webapps/ROOT/WEB-INF/classes/com/mysql/etools/monitor/pom/hib/ehcache-mysql.xml`, those changes are now preserved during an upgrade install of the Service Manager. (Bug #12423748)
- When uninstalling the Agent from an OS X system, some files and directories could be left behind if the installation directory was an external (that is, mounted) disk. The following items remained behind:

```
Info.plist
MacOS
Resources
```

(Bug #12416255)

- The “MyISAM Indexes Found with No Statistics” rule gave incorrect warnings for the `performance_schema` tables in MySQL 5.5. (Bug #12409234)
- Rather than writing the user name and password into the `configuration_report.txt` file, the installer now writes a placeholder value using asterisks. Make sure to record these credentials yourself at the time of the install. If you remove that report file, the upgrade installer now handles that situation gracefully rather than reporting an error. (Bug #12407359, Bug #60984)
- The `Key Buffer Size Greater Than 4 GB` and `Key Buffer Size May Not Be Optimal For System RAM` rules were updated to take in to account that the `key_buffer_size` variable can now be set to greater than 4GB on 64-bit Windows systems. (Bug #12407351, Bug #60991)
- The “Prepared Statements Not Being Used Effectively” rule was updated to look at the status variables relating to SQL-based prepared statements (`PREPARE`, `EXECUTE`, and so on) rather than API-based (for example, `mysql_stmt_prepare()`) status counters. (Bug #12402871, Bug #60919)
- Workaround to improve the performance of data collection queries on systems with partitioned tables. For the Schema advisors, the following rules cannot be run against any instances that contain partitioned tables:

```
Tables Found with No Primary or Unique Keys
MyISAM Indexes Found with No Statistics
AUTO_INCREMENT Field Limit Nearly Reached
```

(Bug #12351581)

- The rule “Root Account Can Login Remotely” could give an incorrect warning on MySQL 5.5, if the root account logged in using the local specification `::1` (for the IPv6 loopback interface). (Bug #12325490, Bug #60697)

- The “Tables Found with No Primary or Unique Keys” rule gave incorrect warnings for the `performance_schema` tables in MySQL 5.5. (Bug #12325487, Bug #60695)
- On Solaris, the Agent could crash with signal 11 while accessing a mounted file system, then get a `DuplicateAgentUuidException` upon immediate restart. (Bug #11924532)
- Upgraded the bundled MySQL instance to 5.1.56. (Bug #11897189)
- For several alerts, the titles mentioning “Security Alterations” were clarified to reflect that they are related to MySQL privileges. The advice now points to a view of Query Analyzer that filters for `GRANT` and `REVOKE` statements. (Bug #11766681, Bug #59846)
- The new properties `mysqlenterprise.serviceManagerConnectTimeout` and `mysqlenterprise.serviceManagerResponseTimeout` were added to the Connector/J plugin. The `mysqlenterprise.httpSocketTimeoutMillis` property is no longer needed. (Bug #11766637, Bug #59786)
- If the value for `agent-mgmt-hostname` was missing or incorrect in `mysql-monitor-agent.ini`, the Agent could crash, and crash repeatedly as it was restarted. (Bug #11766371, Bug #59471)
- Performing the action `Delete Servers`, when no servers were selected, would return a popup box with the text “undefined”. (Bug #11766054, Bug #59087)
- The `Agent Memory Usage Excessive` advisor reported a value for memory used that was too low. Now the reported value includes the memory used by the Lua scripting language within the Agent. (Bug #11765326, Bug #58284)
- The `Disk IO Usage` and `Disk Space Usage` graphs are now available on Solaris systems. (Bug #11764734, Bug #57598)
- The types for the `mysql:variables:completion_type` and `mysql:variables:concurrent_insert` data collection items were changed to the string/varchar type to reflect changes within MySQL 5.5. (Bug #11764502, Bug #57340)
- Removed references to the discontinued MySQL 6.0 release from the rule `Row-based Replication Broken For UTF8 CHAR Columns Longer Than 85 Characters`. (Bug #11761878, Bug #54410)

Changes in MySQL Enterprise Monitor 2.3.3 (2011-04-15)

Bugs Fixed

- Fixed an issue with increasing the RAM devoted to the Tomcat component on Windows. Setting higher memory values, as explained in [Configuring Tomcat Parameters](#), had no effect on the Windows platform. (Bug #12398265)
- An error could occur when retrieving information about service requests from My Oracle Support. (Bug #12366136)
- The Connector/J plugin could send incorrect values for the `rows`, `max_rows`, `bytes`, and `max_bytes` fields to the Dashboard. The incorrect values could produce anomalies such as `average_rows` higher than `max_rows`, or `average_bytes` higher than `max_bytes`. (Bug #12358563)
- The level of Apache Tomcat included in the Service Manager installation was upgraded to 6.0.32. (Bug #12351889)
- On Solaris, the Agent could crash with signal 11 while accessing a mounted file system, then get a `DuplicateAgentUuidException` upon immediate restart. (Bug #11924532)

- If an instance was moved to another system to be monitored by a different agent, but was still listed in the original agent's configuration files, many “duplicate UUID” messages could be reported in the error log of the original agent. (Bug #11760651, Bug #53077)
- Information was added to the documentation about minimum InnoDB configuration settings for the repository database, to avoid `Session is closed!` errors in the Tomcat logs. See [Service Manager Installation Common Parameters](#) for details.
- Legacy MySQL Enterprise credentials were removed. Provide your My Oracle Support credentials to view open Service Requests. First-time Setup and Settings were modified accordingly.

Changes in MySQL Enterprise Monitor 2.3.2 (2011-03-01)

- [Functionality Added or Changed \[22\]](#)
- [Bugs Fixed \[22\]](#)

Functionality Added or Changed

- On the Manage Servers page of the Dashboard, the `rename` button is now `edit server details`. You can enter notes about each server, which are displayed as tooltips for the servers in the Server Tree.
- The included Java runtime environment has been updated to JDK 6.0 Update 29.

Bugs Fixed

- The Agent could die with a vague error message when encountering a SQL error code 2013, requiring a manual restart. The message is now more specific. (Bug #11765869, Bug #58874)
- The Start Menu shortcuts that run the `agentctl.bat` script to start and stop the MySQL Enterprise Monitor Agent did not prompt for administrator credentials when run by a non-administrative user. (Bug #59220)
- The non-anonymous bind password fields could be incorrectly greyed out when switching between `Comparison` and `Bind As User` settings. (Bug #59105)
- Each time LDAP settings were changed, the binding would fail unless the non-anonymous bind user password was re-entered. (Bug #59103)
- Upgraded the bundled Java installation to version 6.0_22. (Bug #58829)
- The Connector/J component was upgraded to 5.1.14. (Bug #58751)
- The REST API for toggling blackout periods can now be called by a user with the `agent` role. Oracle recommends using such a lower-privileged account, rather than including administrator credentials in scripts. (Bug #58391)
- The graph for the `InnoDB` buffer pool now reports correct totals when `innodb_buffer_pool_instances` is set to a value greater than 0. The fix only works for MySQL Server 5.5.9 and later. (Bug #58332, Bug #60777, Bug #12346961)
- A new `Graph Gallery`, underneath the `Graphs` tab, displays a large view of the graphs with less space taken up by navigation controls. (Bug #58153)
- Added a `use SSL` checkbox in both the full installer and the upgrade installer for the Service Manager. When you check that box during a full installation, the `config.properties` file includes the line

`mysql.use_ssl=true`. The upgrade installer defaults to checked or unchecked for that box depending on the value of `mysql.use_ssl` in the `config.properties` file. The configuration file for the repository database includes 3 SSL-related parameters:

```
ssl-ca="MEM_install_directory/ssl/cacert.pem"
ssl-cert="MEM_install_directory/ssl/server-cert.pem"
ssl-key="MEM_install_directory/ssl/server-key.pem"
```

You cannot select `use SSL` if you also use your own MySQL instance for the repository database, and that instance does not include SSL support. You can always select `use SSL` in combination with the bundled MySQL server, because that server includes SSL support. (Bug #58148, Bug #11764423)

- For Solaris installations, MySQL Enterprise Monitor now uses the 64-bit HotSpot JVM on platforms that support it. The `-d64` flag is now included in the `JAVA_OPTS` setting, in the `catalina.sh` configuration file. (Bug #57957)
- The command `/etc/init.d/mysql-monitor-agent stop` incorrectly returned the value 1 if the MySQL Enterprise Monitor Agent was already stopped. Now this command returns a value of 0 in this case. (Bug #55404)
- Resolved SSL issues when using MySQL Enterprise Monitor on a server with the `tomcat-native` packages installed. (Bug #53568, Bug #11761108)
- The Dashboard installation now includes the `tomcat-native` packages for better scalability of network traffic using SSL. (Bug #49372)
- `EXPLAIN` plans were not always shown for queries that ran for greater than 500 milliseconds. (Bug #42105, Bug #11751302)
- Reduced memory usage for the MySQL Enterprise Monitor Agent. Formerly, it retained in memory the canonical queries that it sent to the proxy. (Bug #40462)
- The Manage Servers page now has a menu option `[Enable | disable] event blackout`. You can set up blackout periods through the Dashboard in addition to scripting them through the REST API. For details, see [Manage Servers](#). (Bug #34186)

Changes in MySQL Enterprise Monitor 2.3.1 (2010-12-15)

Bugs Fixed

- Upgraded the bundled MySQL instance to 5.1.50. (Bug #58977)
- To connect MySQL Enterprise Monitor with an Active Directory server through LDAP, you must specify a user (even one with limited privileges). (Bug #58132)
- Changing the frequency for the Heat Chart rule `MySQL Agent Not Reachable` to anything other than the default `00:01` caused the alert not to function. Now this rule cannot be changed to any different frequency. (Bug #58018)
- If the proxy was not enabled in MySQL Enterprise Monitor 2.2, an upgrade to 2.3 could fail. (Bug #57958)
- The `.log` and `.pid` files for the MySQL Enterprise Monitor Agent would be left behind after deinstalling the Agent. Now these files are removed. (Bug #57845)
- The default MySQL port during MySQL Enterprise Monitor is now 13306 if you select the bundled MySQL server, or 3306 if you select an existing MySQL server instance. (Bug #57809)

- After upgrading the service manager, certain graphs were not available and had to be re-imported. (Bug #57593)
- The aggregator incorrectly reported the average execution time for the summary period, rather than the total execution time. (Bug #57538)
- The [Manage Servers](#) tab now displays an operating system column that you can sort and filter. (Bug #57517)
- The timestamp sent from the Aggregator to the Service Manager reflected the time that a query was sent to the Aggregator, not the time that the query was actually run. This could result in inaccurate graphs if the query data was buffered before being sent to the Aggregator. (Bug #57303)
- The agent update installer used default values instead of values specified on the command line for `--backupdir` and `--restartImmediately`, when the installer was invoked in interactive (text / win32) mode. (Bug #57059)
- A new graph, [InnoDB Transaction Lock Memory](#), illustrates the number of undo log entries. This value is derived from the Information_Schema column `INNODB_TRX.TRX_ROWS_MODIFIED`. (Bug #44005)

Changes in MySQL Enterprise Monitor 2.3.0 (2010-11-01)

- [Functionality Added or Changed](#) [24]
- [Bugs Fixed](#) [24]

Functionality Added or Changed

- The new Aggregator component accepts Query Analyzer data from any source.
- The “What’s New?” page integrates with My Oracle Support service, in addition to the MySQL Enterprise web site.
- There is a new advisor and corresponding graph for MySQL Cluster.
- There is a new advisor and corresponding graph for network and disk I/O.
- There is no longer a requirement to enter a license key.
- There is a new advisor and corresponding graph for InnoDB Plugin.
- Query Analyzer, Replication monitoring, and all rules and graphs are now available to all licensed users. See <http://www.mysql.com/products/> for details.

Bugs Fixed

- When MySQL Enterprise Monitor truncated the legacy data collection tables, such as `dc_ng_string_now` and `dc_ng_long_now`, the disk space was not released back to the operating system, even if the `innodb_file_per_table` setting was enabled. Now, the disk space is released correctly, for all combinations of MySQL with or without the InnoDB Plugin. (Bug #57126)
- The `User Search Pattern` when defined in MEM/LDAP `Bind as User` method of authentication overrode the `User Search Attribute Pattern` method, even though it shows as greyed out. (Bug #56734)
- The deprecated `--skip-locking` option for the embedded MySQL server was being used in place of the `--skip-external-locking` option. (Bug #56004)

- The embedded OpenSSL has been updated to version 0.9.8o. (Bug #55949)
- The CA certificate files `cacerts` and `myKeystore` are now backed up during the upgrade process, and their file locations are stored within `configuration_report.txt`. (Bug #55505, Bug #11762859)
- If identical JSON-format data was submitted to the Aggregator within the same 60-second window, the counts displayed on the Dashboard could be incorrect. (Bug #54669)
- The data reported for the binary log file size (in `mysql::masterlogs::filesizesum`) was erroneously reporting the count of the files, not the sum of the size of the binary logs. (Bug #54618)
- The list of active support issues on the **What's New** page has been updated to not show issues that are stale, and to not show issues if you have disabled the support issue checks. (Bug #54600)
- Monitoring a database with a large number of tables would lead to long queries on `INFORMATION_SCHEMA` which could lead to operating system memory graphs not being updated correctly. (Bug #54591)
- The MySQL Enterprise Monitor Agent installer would ask for agent credentials, even if you had indicated that the correct user credentials had already been created. (Bug #53943)
- If the `config.properties` file, which can contain sensitive information, is world-readable, the server issues a warning message and does not start. (Bug #53004)
- The timeout for information being supplied through the aggregator was too high, leading to a failure to identify that the aggregator was unavailable. (Bug #52280)
- The installer dialog for the text installation for MySQL Enterprise Monitor Agent would show a blank password prompt when asking for confirmation of the root password. (Bug #52129)
- With the setting `log-level=debug`, the JSON data in the Aggregator log is now formatted. (Bug #49469)
- If the output from the `SHOW ENGINE INNODB STATUS` command is truncated because it exceeds the size limit, and MySQL Enterprise Monitor cannot get information about all InnoDB transactions, now a message is printed to the agent log. To avoid the possibility of the status information being truncated, enable the `innodb-status-file` option. MySQL Enterprise Monitor gets the status information from this file if it is available. The status file is not subject to a maximum size like the `SHOW ENGINE INNODB STATUS` output. (Bug #45509)
- The file permissions on the `mysql` directory within the MySQL Enterprise Service Manager installation would not be set correctly on Mac OS X. (Bug #35203)
- Added regex parsing for the new InnoDB plugin, as features relying on `SHOW INNODB STATUS` would output extra sections.

