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OpenWorld 2017 Oracle Enterprise Manager for MySQL



Adventures with MySQL Monitoring

Kathy Forte Oracle MySQL Solutions Architect October 2, 2017



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 Enterprise Manager : Agenda

1 Introductions

- 2 When to Use Enterprise Manager
- ³ Architecture
- 4 How To's
- Live Demo
- **6** Future of Monitoring







Kathy Forte

MySQL Solutions Engineer, Oracle



Oracle Enterprise Manager For MySQL

- Who are you?
- Where do you work?
- How do you monitor today?







Oracle Enterprise Manager: Agenda

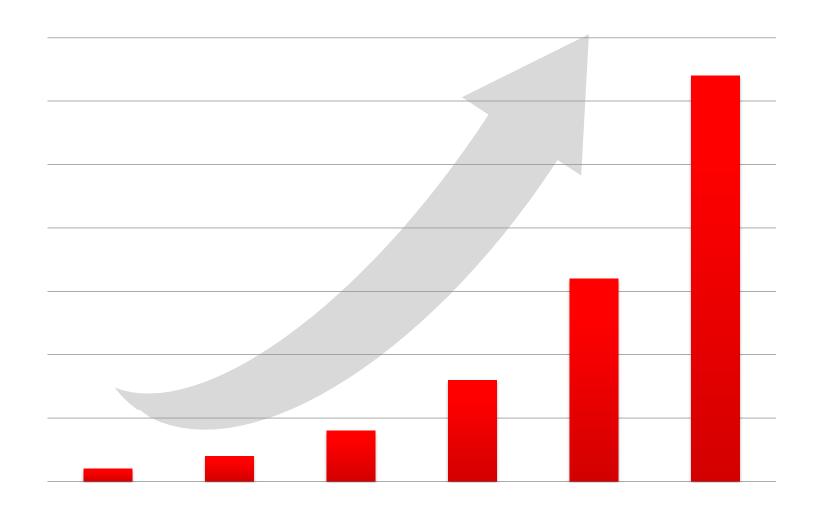
1 Introductions

- **2** When to Use Enterprise Manager
- ³ Architecture
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Database Application Growth



Situation

- 2.1 Billion Internet Users
- 40% Data Growth/Year
- \$1 Trillion eCommerce
- 600 New Videos/Minute
- 58 Million Tweets/Day

Monitoring Requirements



The Operator's Responsibility



http://9xmedia.com/new/products/xtops.php



The DBA's Responsibilities





Oracle Enterprise Manager For MySQL

Single Dashboard to manage Oracle stack for Web & Cloud

- An estimated 70% of Oracle customers also use MySQL
 - For Web, custom, departmental and embedded applications
 - -#1 Requested integration









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Oracle Enterprise Manager Architecture Console (web/CLI) Agent Repository Agent Management Server ORACLE SUPPORT **Notifications** Agent

- Agents: Collect monitoring and configuration data from the targets
- Management Server (OMS): Receives and processes data from agents,
- Repository (OMR):
 Persistent store for data collected from the managed targets



Enterprise Manager Architecture

 Console: web browser - primary interface for interactive management of objects/targets (database, application, middleware, cloud)



 CLI: Oracle Enterprise Manager's Command Line Interface



Enterprise Manager Architecture

- All target specific management encapsulated in target plug-ins (MySQL Plug-In)
- Plug-ins provide additional vertical EM functionality (Cloud Application Plug-in)
- Supports 3rd party plugins



Oracle Enterprise Manager : One Tool to Manage Them All!

- Manage hardware
 - Servers
 - Network switches/hubs
 - Storage appliances
- Manage Virtualization
 - Oracle VM
 - VMware vSphere
- Manage Cloud
 - Oracle Cloud
 - OpenStack
 - AWS

ORACL

- Manage databases
 - Oracle Database
 - Including full DBaaS functionality
 - SQL Server Plugin
 - DB2 Plugin
 - Sybase Plugin
 - Postgres Plugin
 - Times Ten Plugin
 - MySQL Plugin!

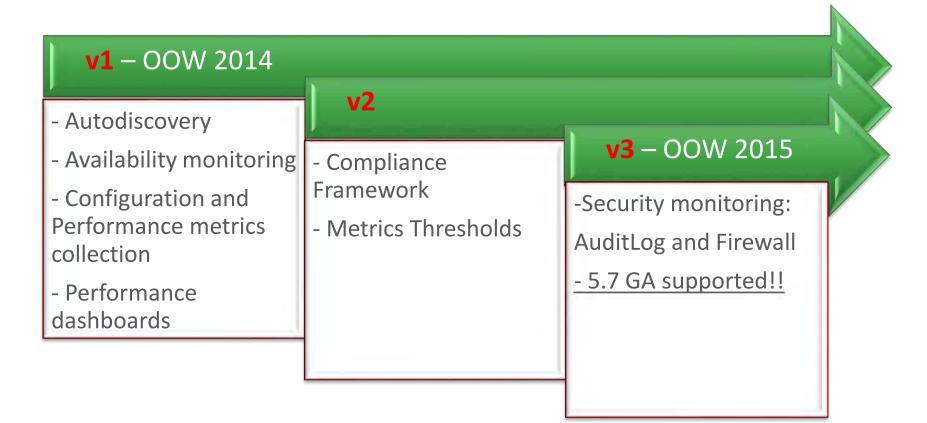
- Manage applications
 - Apache [Tomcat], IIS
 - Weblogic, Websphere
 - Oracle Directory Server,
 Windows Active Directory
 - JVM, Microsoft .NET
 - Siebel, Peoplsoft
 - Oracle Fusion
- Manage BI tools
- Manage networks
 F5, Dell Force10, ...

MySQL Integration

- Integrated as an Oracle provided plugin
 - Went GA at Oracle Open World 2014
 - Requires OEM 12c Release 4 or later
 - Available from within OEM itself using the Self Update tool
 - Listed within the Extensibility Exchange
 - https://apex.oracle.com/pls/apex/f?p=53891:1
 - Available as a standalone download (.opar file)
 - Via MyOracle Support and eDelivery
- Supports MySQL 5.5 and later
- Included with select commercial editions (Enterprise and CGE)



History





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- 4 How To's
- Live Demo
- **Future of Monitoring**





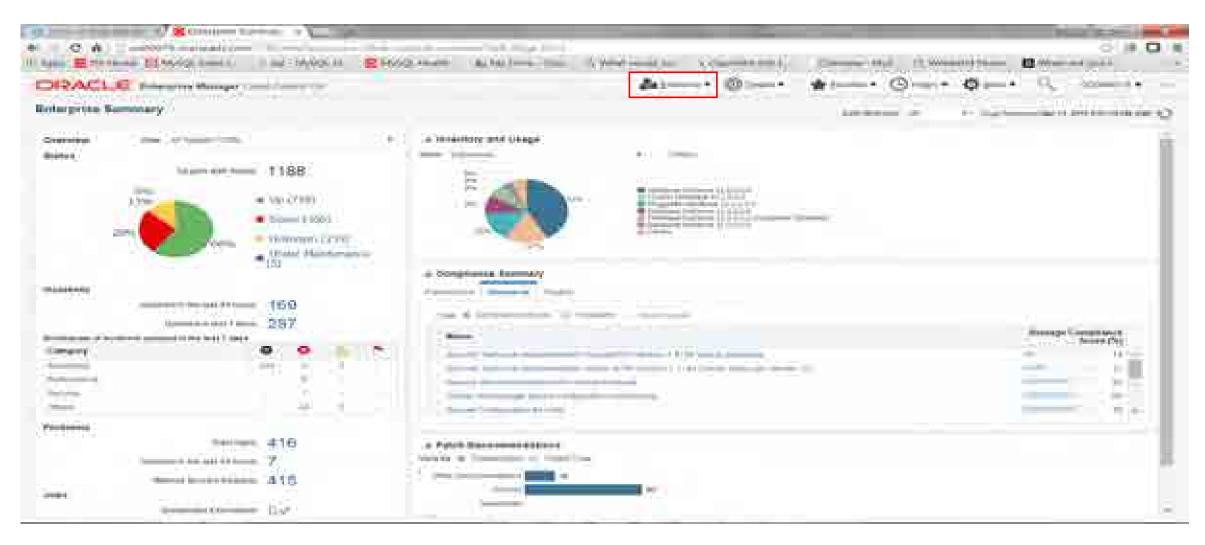
Reporting – How To See What Is Going On? The Operator



http://9xmedia.com/new/products/xtops.php



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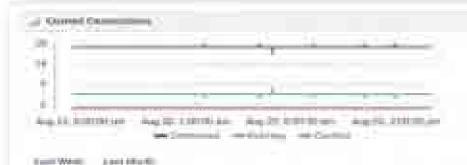
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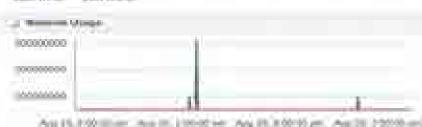
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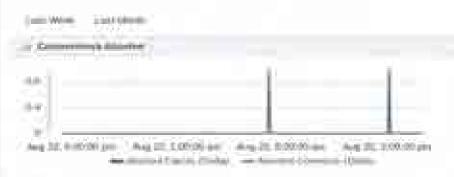
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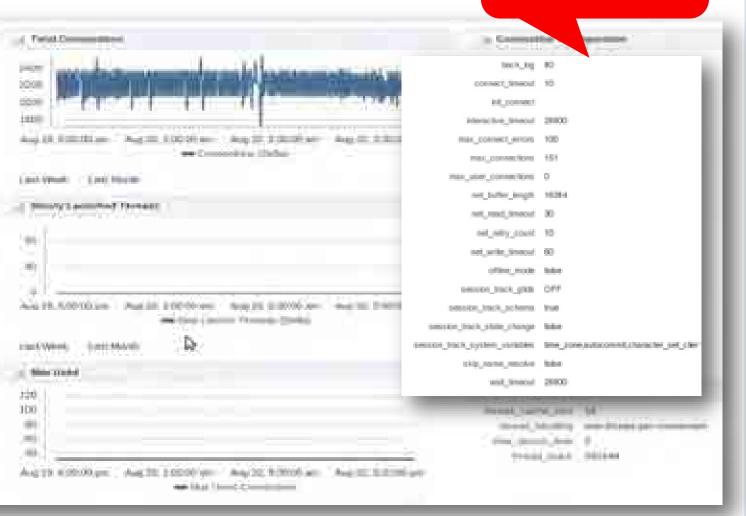
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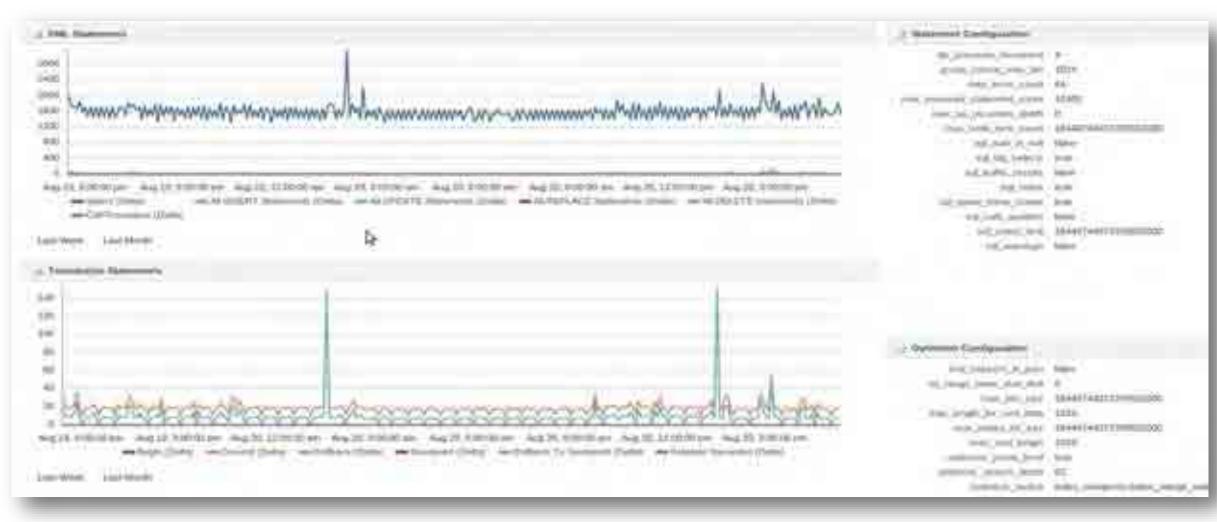






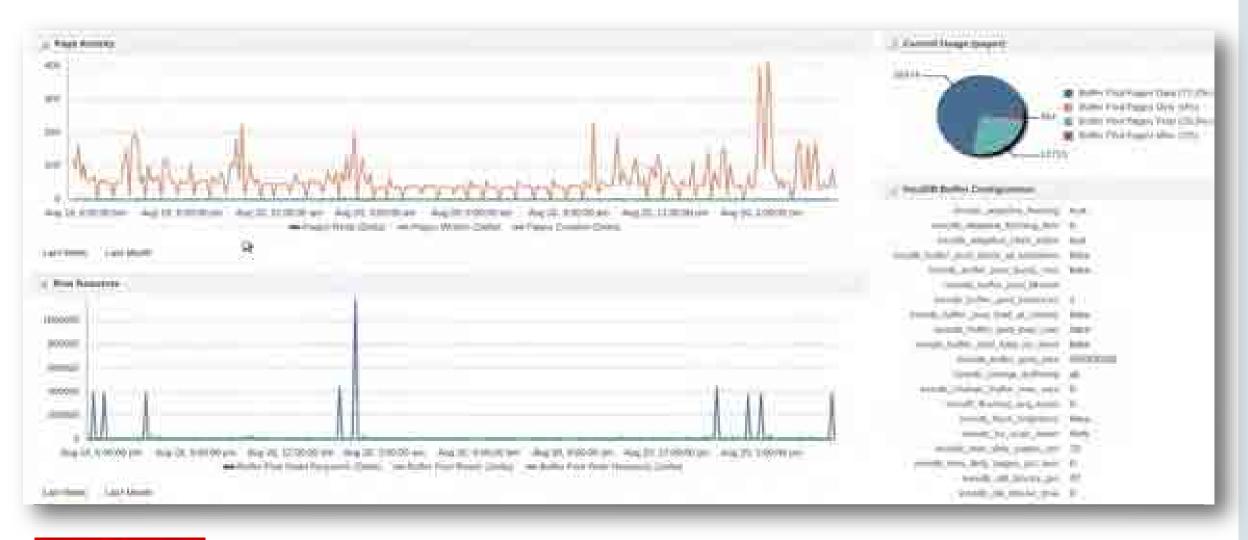
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What Kind Of SQL Statements Are Running On Your MySQL Instance?



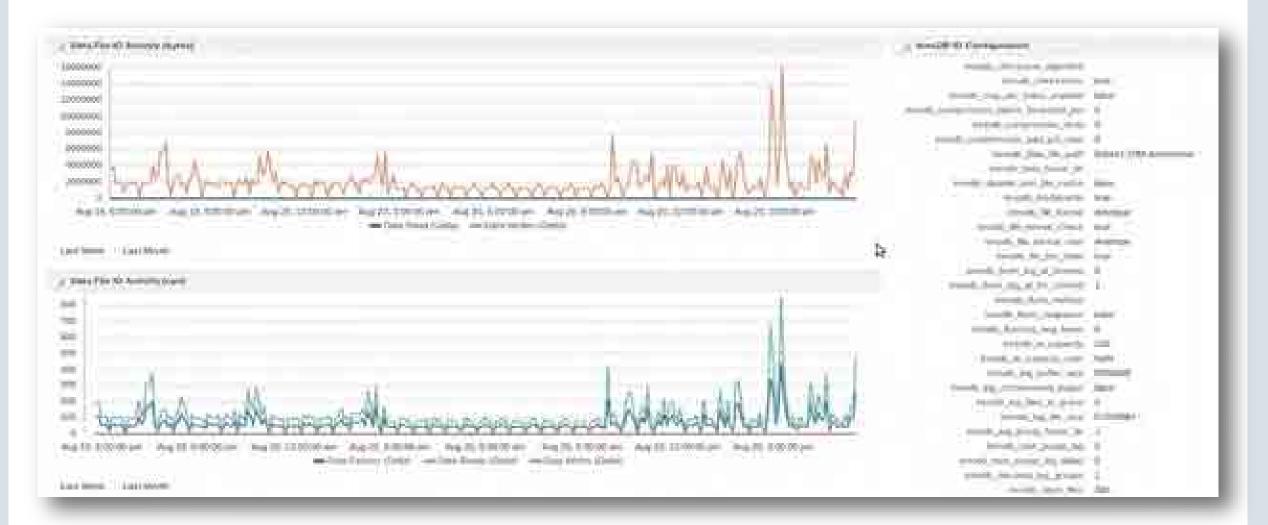
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Are You Hitting Data In Cache? Innodb Buffer Pool



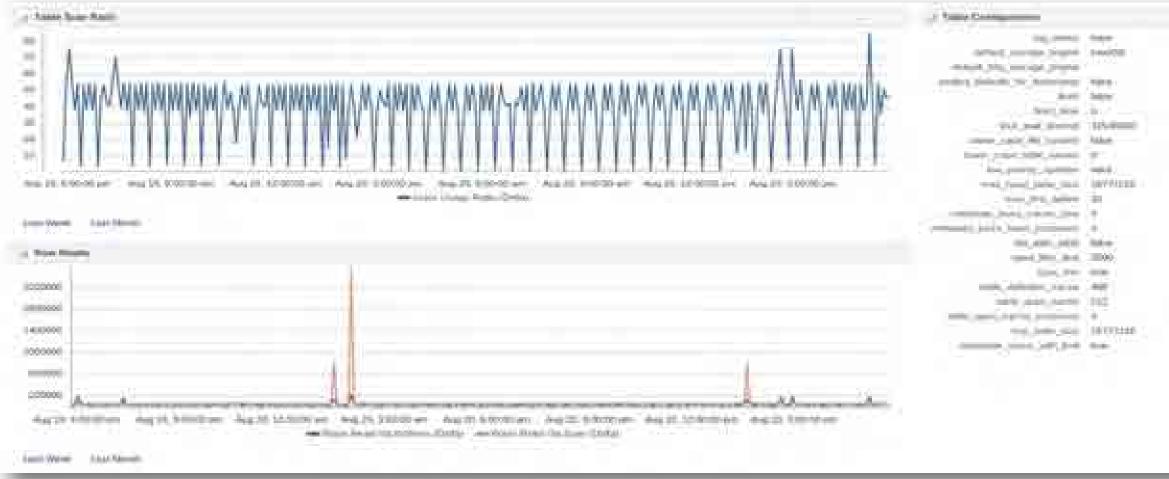
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Am You Going To Disk Too Often? File I/O



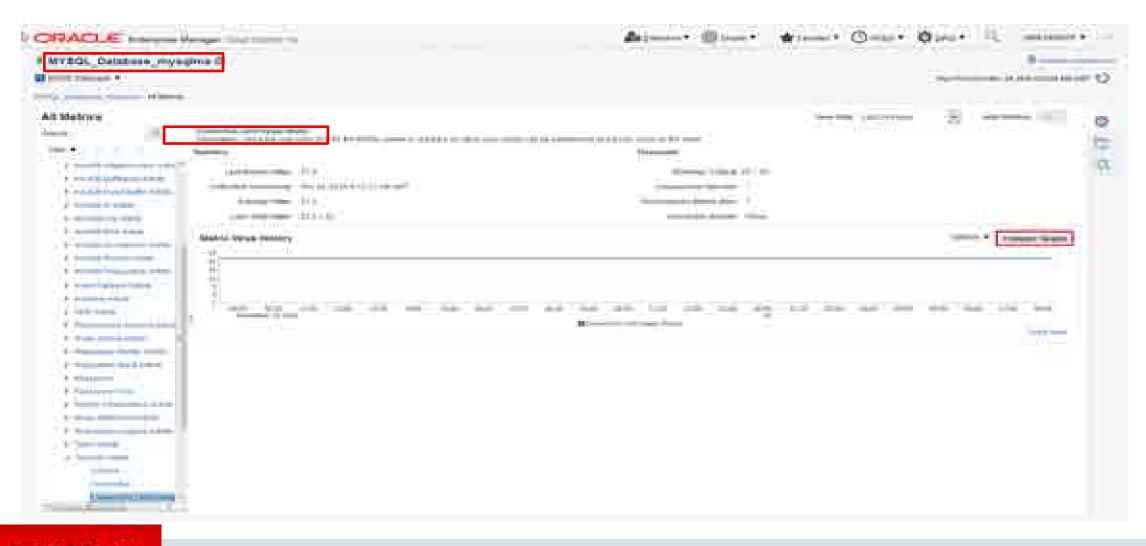
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Am You Using Indexes Or Doing Table Scans? Table/Rows





Is Your Master In Sync With Your Slave?



Is Your Master In Sync With Your Slave?

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Is Your Master In Sync With Your Slave?

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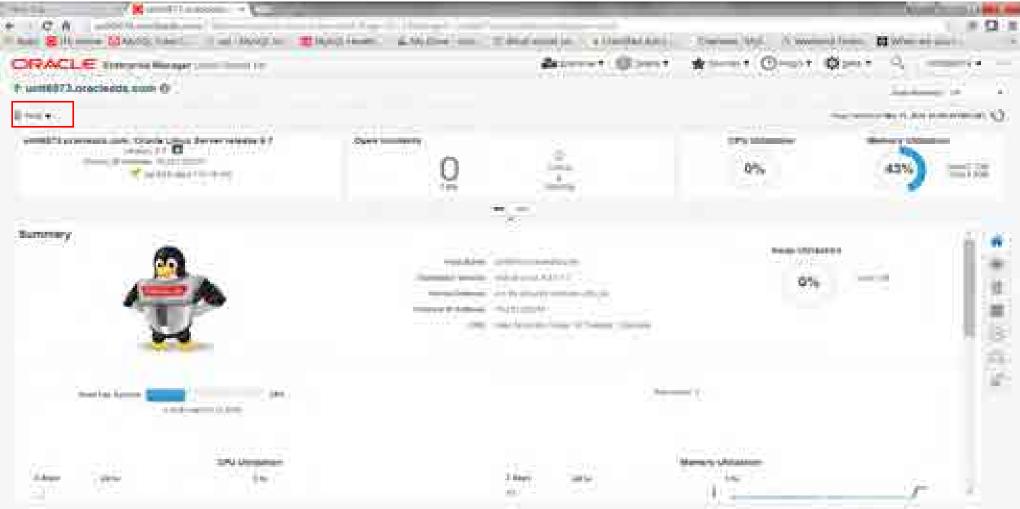
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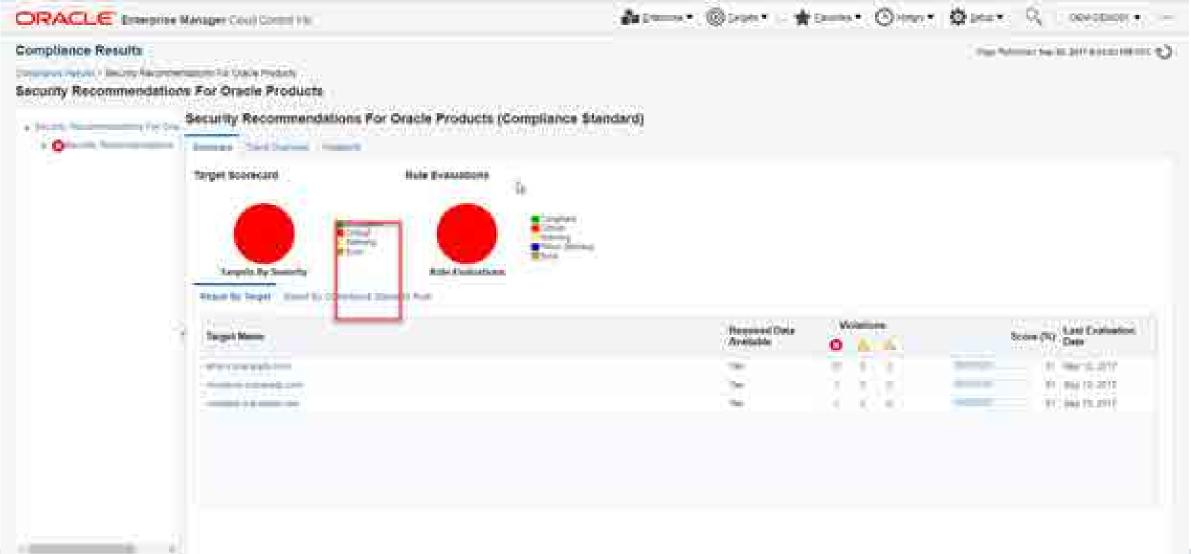


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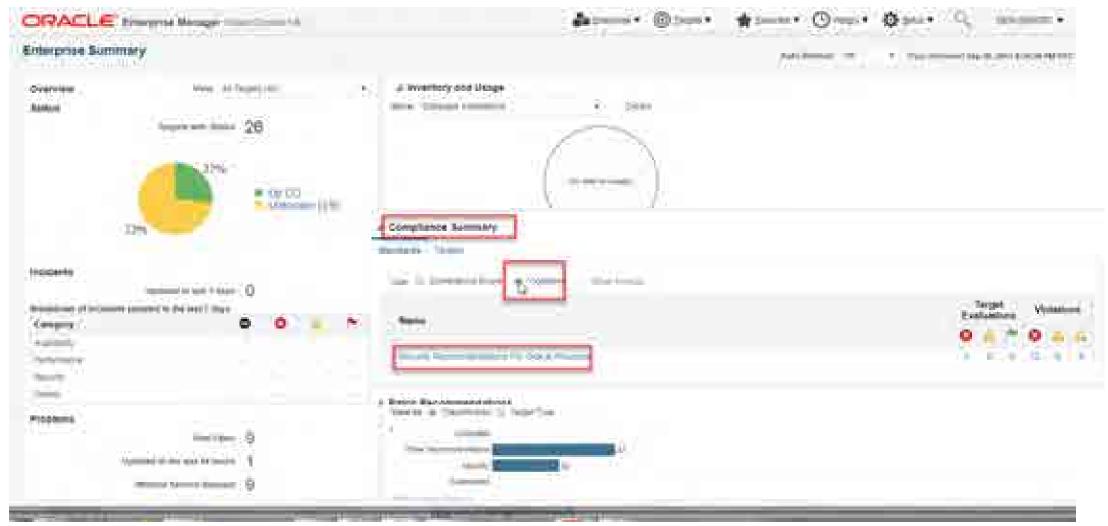


Are There Any Recommendations For MySQL Instances?





Are There Any Recommendations For MySQL Instances?





Are There Any Recommendations For MySQL Instances?

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Compliance Results

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Security Recommendations For Oracle Products

Security Recommendations For Oracle Products (Compliance Standard)

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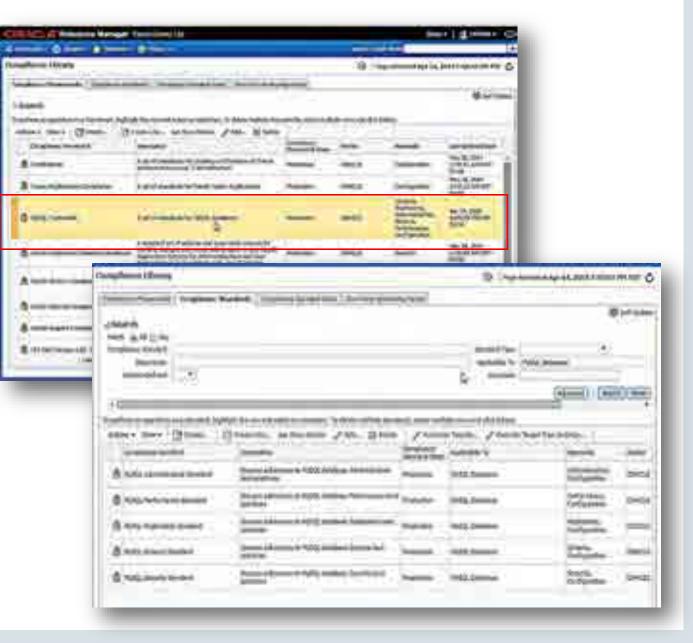


Compliance Framework

- Set of product **best practices**
- Suggested by our experts
- Based on configuration metrics
- Composed of:

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- 5 Compliance Standards
 - ✓ Administration
 - ✓ Performance
 - \checkmark Replication
 - ✓ Schema
 - ✓ Security
- Around 29+ Compliance Rules



What Metrics Are Set? Target Sitemap For MySQL





What Thresholds Are Set? Target Sitemap For MySQL

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How Do You Set Up Your Oracle Enterprise Manager?





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What Are Configuration Metrics?

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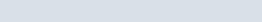
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Highlights:

- Those metrics that represent <u>configuration</u> and come from ie. "show global variables"
- Categorized variables
- Collected every 24 hrs by default
- History and Comparable with other servers



What About Security Configuration Metrics? Firewall And Audit

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What Are Performance Metrics?

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Highlights:

- Those that represent <u>usage</u> and come from ie. "show status"
- Collected by default every 5 minutes
- Categorized variables
- Current and historical activity
- Counters and Deltas
- Settable thresholds

What Are Performance Thresholds?

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26+ metrics with thresholds

Expert advisors

- Include the most important:
 - Availability
 - Replication
 - Key Performance Indicators

Get alerts !!!

How Do You Install Oracle Enterprise Manager? Two Ways

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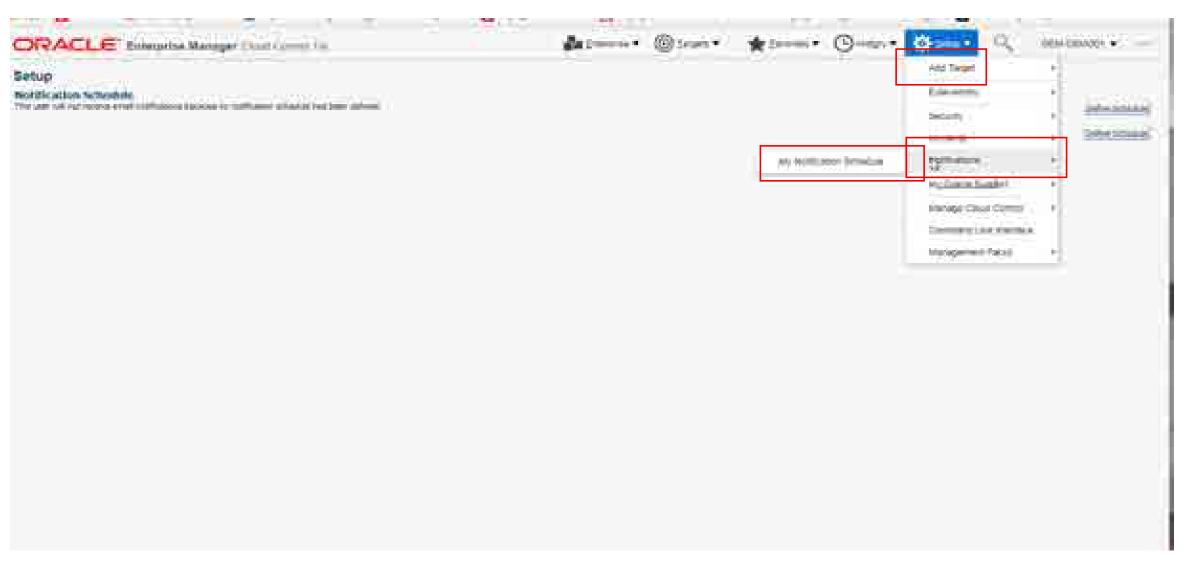
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Plug-in Deployment



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How Do You Add MySQL Database Instances? Targets

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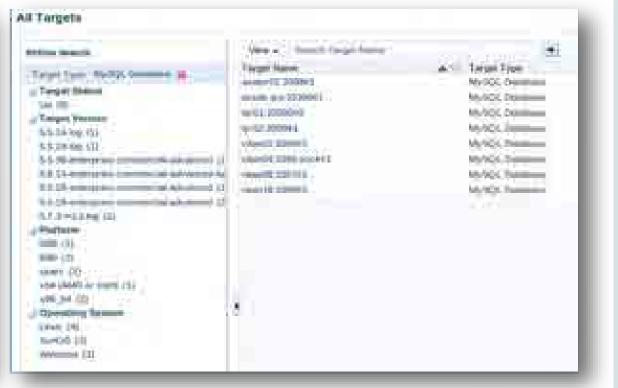


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What Instances Do You Have Installed? Targets

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All targets



Filtered targets

When Should You Use Which Tool?

ORACLE ENTERPRISE MANAGER FOR MYSQL

- Provides a High Level Overview of MySQL within Your Enterprise
- Tool for the Operations Team



- Allows You to Dive Deeper Into
 - Query Analyzer
 - Exhaustive Best Practice Advisors
- Tool for the MySQL DBA & Dev team(s)



When Should You Use Which Tool?

ORACLE ENTERPRISE MANAGER FOR MYSQL

- Can Drill Down to Topology of Hardware
- A 'Map' to All Your Systems
- CLI Interface to Oracle Cloud
 Infrastructure



- Can Look at Backups
- Can Drill Down to Topology of Replication



Oracle Enterprise Manager : Agenda

1 Introductions

- 2 When to Use Enterprise Manager
- ³ Architecture
- 4 How To's
- **5** Live Demo
- **6** Future of Monitoring





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This Is How We Used to Monitor - Get System Table Information And Put in Excel



https://i.ytimg.com/vi/FVRJU--8YMY/maxresdefault.jpg



No longer have to monitor in past tense

We have advice for you

We give you graphs



http://www.tsi.com/Landing-Pages/HS-Silica.aspx



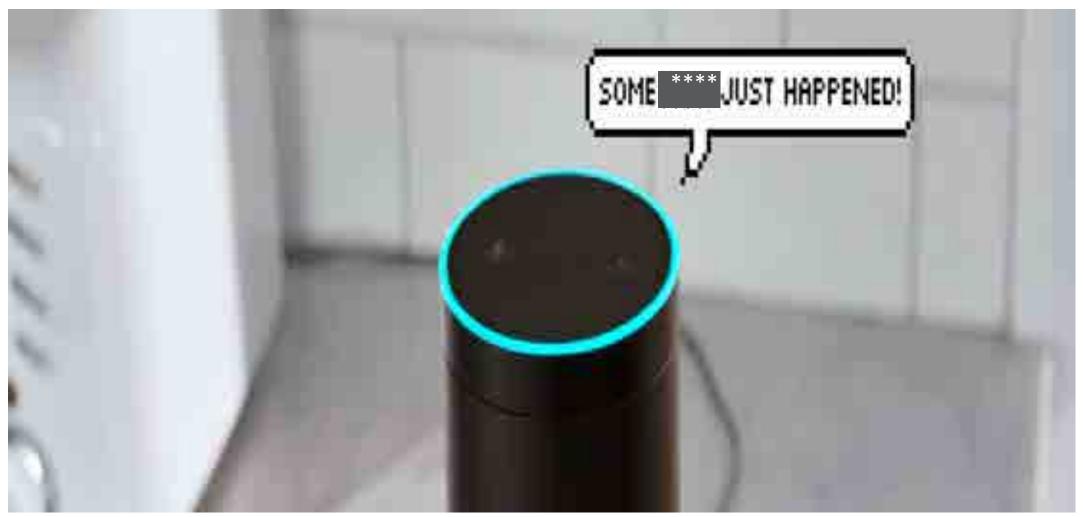
In The Near Future

Give me fix Patch for me Implement the change Give me the possible effects of the change

https://kiply.com/blog/three-productivity-mistakes-you-can-fix-monitoring-time/



Your Monitor Talks to You, Alerts You - Alexa



https://www.google.com/search?q=alerting+that+talks+to+you+alexa&source=lnms&tbm=isch&sa=X&ved=0ahUKEwi0rIa-9cjWAhXmhFQKHebYAT0Q_AUICigB&biw=1961&bih=841#imgrc=C4A1RDLcCPoF4M



And Now ...

Where do you think monitoring is going? What would help you solve your business/operations issues in the Oracle Enterprise Manager – the MySQL plugin?



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Q & A





Learn More

• Oracle Enterprise Manager for MySQL

http://www.mysql.com/products/enterprise/em.html

• MySQL Enterprise Monitor

http://www.mysql.com/products/enterprise/monitor.html

Download

https://eDelivery.oracle.com

• Kathy Forte

kathy.forte@oracle.com



Thank You!



https://www.123rf.com/photo_22066345_young-female-construction-worker-with-an-electric-drilland-plans-vector-illustration.html



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