Oracle Management Cloud: A unified monitoring platform

Openlab Technical Workshop

Aimilios Tsouveleakakis

23/01/2019
What is a Monitoring Platform?

• Centralized system for:
  • Detection
  • Containment
  • Remediation
What is a Monitoring Platform?

- Centralized system for:
  - Detection
  - Containment
  - Remediation

- Ensures that incidents:
  - Identified
  - Analyzed
  - Reported
  - Took Action
System Specifications

• Unified Platform for
  • Data Ingest
  • Storage
  • Analytics
System Specifications

- Unified Platform for
  - Data Ingest
  - Storage
  - Analytics

- Architecture
  - Extensible
  - Pluggable
  - Modular
System Specifications

- Unified Platform for
  - Data Ingest
  - Storage
  - Analytics

- Data Access
  - Dynamic Dashboards
  - Command Line Access

- Architecture
  - Extensible
  - Pluggable
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System Specifications

• Unified Platform for
  • Data Ingest
  • Storage
  • Analytics

• Data Access
  • Dynamic Dashboards
  • Command Line Access

• Architecture
  • Extensible
  • Pluggable
  • Modular

• Security
  • Authentication
  • ACLs
System Architecture

More discussion about infrastructure and the architecture?
Visit us in the poster section:
• Monitoring Java Application Servers
More discussion about infrastructure and the architecture?
Visit us in the poster section:
• Monitoring Java Application Servers

Through our collaboration with Oracle we decided to evaluate a similar platform. Why?
• We wanted to evaluate some features that our own platform does not have

Because the first evaluation period was short
• We were granted ~110,000$ in Oracle Cloud credits and 6+1 months of evaluation
## Oracle Management Cloud

### Welcome to Oracle Management Cloud

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Performance Monitoring</td>
<td>Rapidly identify, respond, and resolve your software roadblocks</td>
</tr>
<tr>
<td>Infrastructure Monitoring</td>
<td>Monitor your entire IT infrastructure - on-premise or on the cloud - from one unified platform</td>
</tr>
<tr>
<td>Log Analytics</td>
<td>Topology aware log exploration and analytics for modern applications and infrastructure</td>
</tr>
<tr>
<td>IT Analytics</td>
<td>Operational big data intelligence for modern IT</td>
</tr>
<tr>
<td>Configuration and Compliance</td>
<td>Automate application and infrastructure configuration assessments</td>
</tr>
<tr>
<td>Security Monitoring and Analytics</td>
<td>Detect, investigate and mitigate security threats</td>
</tr>
<tr>
<td>Orchestration</td>
<td>Schedule, execute and report on tasks at scale</td>
</tr>
<tr>
<td>Dashboards</td>
<td>Build custom dashboards using out-of-the-box widgets or your own visualization of data</td>
</tr>
<tr>
<td>Explorers</td>
<td>Search, analyze, and visualize data</td>
</tr>
<tr>
<td>Mobile Application</td>
<td>Click the icon to get your account QR code</td>
</tr>
</tbody>
</table>

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Components Evaluated

- Log Analytics
- Infrastructure Monitoring
- Application Performance Monitoring
Log Analytics

- A component to:
  - Display log records
  - Extract the log line into several fields
  - Create Graphs
  - Write Rules for Alerting on potential issues
Log Analytics

• A component to:
  • Display log records
  • Extract the log line into several fields
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  • Write Rules for Alerting on potential issues

• Visualizations
  • Records with/without Histogram
  • Table with/without Histogram
  • Pie
  • Bar / Horizontal Bar
  • Summary Table
  • Treemap
  • SunBurst
  • Tile
  • Line

• Cluster
• Link
Data Sources and Graph

Sources of Data
• WebLogic Logs
• Tomcat Logs
• Apache Logs
• Application Logs
• Database Logs
  • Alert
  • Trace
  • Audit
Data Sources

- WebLogic Logs
- Tomcat Logs
- Apache Logs
- Application Logs
- Database Logs
  - Alert
  - Trace
  - Audit
Cluster
Infrastructure Monitoring

Collect metrics:

• **Java Virtual Machine**
  • HeapMemory
  • Garbage Collection
  • Threads

• **Host System**
  • CPU Usage
  • Ram Usage

• **Databases**
  • Memory Usage
  • Transaction Rate
  • IOPS
Infrastructure Monitoring

Collect metrics:
• Java Virtual Machine
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• Host System
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  • Memory Usage
  • Transaction Rate
  • IOPS

Alert on incidents based on specific conditions:
• Fixed threshold
• Availability
• Anomaly
• Metric Error
Enterprise Summary

Enterprise Summary

<table>
<thead>
<tr>
<th>Entities</th>
<th>Entity Status</th>
<th>Alerts</th>
</tr>
</thead>
<tbody>
<tr>
<td>302</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Up</td>
<td>Fatal</td>
</tr>
<tr>
<td></td>
<td>Not Heard From</td>
<td>Critical</td>
</tr>
<tr>
<td></td>
<td>Down</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>Warning</td>
</tr>
<tr>
<td></td>
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<tr>
<td></td>
<td>270</td>
<td>14</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Entities Without Status</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Informational</td>
<td>0</td>
</tr>
</tbody>
</table>

Host

Relational Database

Web Application Server

Others

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Metrics from Weblogic Server
Metrics from host machine
Application Performance Monitoring

Monitor Web Pages
• Page load time
• Number of Views
• Number of Errors
Application Performance Monitoring

Monitor Web Pages
• Page load time
• Number of Views
• Number of Errors

Monitor Server Requests
• Request Response Time
• Tier Average Response
• Number of Errors
• Number of Calls
Application Performance Monitoring

Monitor Web Pages
• Page load time
• Number of Views
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Monitor Server Requests
• Request Response Time
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• Number of Calls

Monitor Application Servers
• Metrics
• Server Requests
• Database
APM Overview

Server Requests By AppServer

- Box Size: Total Calls
- Color: Average Response Time

- db-gb021.com.ch:0111
- db-gb021.com.ch:0113
- db-gb007.com.ch:0100
- db-gb005.com.ch:0101
- db-gb005.com.ch:0102

- Background JDBC
- Background JOBIC
- Background JDBC
- Background JOBIC
- Background JDBC

Top 5 Pages

- https://edms3.cern.ch/cloud/com_control/execute_c_control
  14.75 s
- https://edms3.cern.ch/cloud/com_list/browse Item
  7.71 s

Top 5 Server Requests

- /plc/cem_cm/com_search/POST
  2.87 m
- /plc/dcm_rcm/com_search/POST
  31.56 s

Top 5 AppServers

- db-gb050.com.ch:0120
- db-gb050.com.ch:0121
- db-gb050.com.ch:0122

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Application Summary

Home

APM Alerts

<table>
<thead>
<tr>
<th>Critical</th>
<th>Warning</th>
<th>Informational</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Infrastructure Health

<table>
<thead>
<tr>
<th>Hosts</th>
<th>AppServers</th>
<th>Databases</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Application Metrics

- Browser and Mobile Workload and Performance Metrics

  - Session Health
  - AppCk
  - Browser Type
  - Operating System
  - Device Type

  Average Response Time
  - Value: -
  - Change: -
  - Trend: -

  Volume Rate
  - Value: -
  - Change: -
  - Trend: -

  Errors
  - Value: -
  - Change: -
  - Trend: -

- Appserver Workload and Performance Metrics

  Average Response Time
  - Value: 142.10 ms
  - Change: 1.06%
  - Trend: -

  Volume Rate
  - Value: 223.03 /min
  - Change: 5.22%
  - Trend: -

  Errors
  - Value: 0.04 %
  - Change: 12.00%
  - Trend: -

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Server Request
Outcome

• Fruitful collaboration
• User Experience Workshops during OpenWorld 2018
• Weekly reports to Oracle
• ~110 pages report at the end of the evaluation period (December 2018)
Conclusions

- Strong platform with many capabilities
- Alerting and Analytics are very useful features
- Using the platform at its full extent requires devoting time and experimenting
- There are still some features we would expect to see and they are on the roadmap
QUESTIONS?

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