IBM Tivoli Monitoring for POWER/AIX

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Power System Technical Webinar Series

Agenda:

- ITM Introduction
- Exploration of ITM Agents Workspaces
  - HMC Agent
  - CEC Agent
  - VIOS Agent
  - AIX Agent
  - UNIX Logs Agent
  - UNIX Agent
- Tivoli Common Reporting
- ITM Server Dashboard
### Feature Matrix – AIX EE & Systems Director

<table>
<thead>
<tr>
<th>Products</th>
<th>Director Express</th>
<th>Director Standard</th>
<th>Director Enterprise</th>
<th>AIX EE</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBM System Director</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Active Energy Manager</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>VMControl Express</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>VMControl Standard/Image Mgr</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>VMControl Enterprise/System pools</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>IBM Tivoli Monitoring</td>
<td></td>
<td></td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Tivoli Application Dependency Manager</td>
<td>YES</td>
<td></td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>Network Control</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Transition Manager for HP® SIM</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Service &amp; Support Manager</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Workload Partitions Manager</td>
<td>YES</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AIX</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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#### POWER Agents

- **Linux OS**
- **Linux Logs**
- **AIX Logs**
- **AIX Premium**
- **CEC Base**
- **HMC Base**
- **VIOS Premium**
- **Director**
- **AEM**

- Agent run on Linux x86 or POWER
- Agent run on AIX or Linux
- Agent run on AIX on POWER
- Agent run on VIOs
- Agent run on Director Server
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ITM & POWER Architecture

ITM Server (AIX, Linux or Windows)

TEP Client

Console Server

TEPS

Console Database

Management Server

TEM5

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ITM - HMC Agent
ITM – Overview – HMC agent – Servers - LPars

ITM – Overview – HMC agent – Servers - Server
ITM - CEC Agent
ITM – Overview – CEC agent – CEC Situations

- Manage Situation at Managed Systems: p/Chat FK

<table>
<thead>
<tr>
<th>Name</th>
<th>Status</th>
<th>Description</th>
<th>Auto Start</th>
<th>Operates Exit</th>
<th>Advice</th>
<th>Action</th>
<th>Info</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>KPI Noon</td>
<td>Alerted</td>
<td>This ratio of available pool CTPs is almost maxed.</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>04.01.2</td>
</tr>
<tr>
<td>KPI Noon</td>
<td>Alerted</td>
<td>The percentage of available pool CTPs is low.</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>04.01.2</td>
</tr>
<tr>
<td>KPI Noon</td>
<td>Alerted</td>
<td>Average CPUs usage on the CEC is high.</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>04.01.2</td>
</tr>
<tr>
<td>KPI Noon</td>
<td>Alerted</td>
<td>New CEC Failure event has occurred.</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>04.01.2</td>
</tr>
</tbody>
</table>

ITM - VIOs Premium Agent
ITM – Overview – VIOs agent – Networking – Shared Ethernet

ITM - AIX Premium Agent
ITM – Overview – AIX agent - Memory

Effective Memory Layout

- Real Memory Utilization
- Complementary Memory
- Paging System Utilization
- VMKd Paging Tables
- Page Fault Tables

ITM – Overview – AIX agent – Memory - AME

Effective Memory Layout

- Real Memory Utilization
- Complementary Memory
- Paging System Utilization
- VMKd Paging Tables
- Page Fault Tables

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### ITM – Overview – AIX agent – Manage Situations (Events/Monitors)

<table>
<thead>
<tr>
<th>Situation</th>
<th>Description</th>
<th>State</th>
<th>Details</th>
<th>Action</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU usage, CPU utilization, etc.</td>
<td>The percentage of the data is above 70%</td>
<td>High</td>
<td>0%</td>
<td>Checked</td>
<td>06/01</td>
</tr>
<tr>
<td>Disk usage</td>
<td>CPU usage for receiving compression is higher than 70%</td>
<td>High</td>
<td>0%</td>
<td>Checked</td>
<td>06/01</td>
</tr>
<tr>
<td>Memory usage</td>
<td>The average memory utilization is greater than 90%</td>
<td>High</td>
<td>0%</td>
<td>Checked</td>
<td>06/01</td>
</tr>
</tbody>
</table>

**ITM – Unix Logs Agent**

- **ITM – Unix Logs Agent**
  - **Overview**
  - **Functionality**
  - **Integration**

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ITM – Overview – Unix Logs

- Log File Information
  - Date: 2012-05-23 10:00
  - Time: 10:00
  - Log File: errlog

- Log File Analysis
  - Number of Lines: 50
  - Number of Bytes: 1000

- Log File Content
  - Sample Log Entry:
    - Message: Error occurred
    - Date: 2012-05-23
    - Time: 10:00
## ITM – Overview – Unix Logs - FailedLogin

### Log Entries

| Time | Event | Description | Severity | Status
|------|-------|-------------|----------|-------
| 00:00:00 | login attempt | Failed login attempt | WARN | Failed

### Log Entries Table

<table>
<thead>
<tr>
<th>Event</th>
<th>Description</th>
<th>Severity</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>login attempt</td>
<td>Failed login attempt</td>
<td>WARN</td>
<td>Failed</td>
</tr>
</tbody>
</table>

## ITM – Overview – Unix Logs – Manage Situations - Extensive HACMP (PowerHA)

### Situation Manager - Managed Systems - 10/17/2012 10:00 AM

### Managed Situations

<table>
<thead>
<tr>
<th>Situation</th>
<th>Description</th>
<th>Auto-Start</th>
<th>Auto-Stop</th>
<th>Action</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>PowerHA</td>
<td>Starts HACMP (PowerHA) service</td>
<td></td>
<td></td>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>
ITM – Unix Agent
ITM – Tivoli Common Reporting

System-p Unix OS & AEM Reports

System-p Report Groups:
ITM – Overview – Tivoli Common Reporting for ITM – Top/Bottom LPARs by memory

System: Top/Bottom LPARs by Memory Utilization

Top LPARs by Physical Memory Utilization

ITM Server Dashboards