Leveraging CA eHealth Performance Manager Proactive Performance Alerting

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Agenda

> What is Proactive Performance Mgmt?
> CA eHealth PM Capabilities and Algorithms
> Integration Capabilities
> New Traffic Alarming (r6.2)
> New capabilities coming in r10.0
Proactive Performance Management

> Reduces time spent running and looking at reports
> Analyses element ‘Health’ every poll period
  - Compares polled value to Thresholds, Baselines, and occurrences using rules
  - Uses historical data to help identify abnormalities
> Alarms can be forwarded to Event Management Systems
  - For correlation with other events
  - Root Cause Analysis
  - Impact Analysis
  - In context Drilldowns to eHealth historical reports
Application Performance Service Challenge - Correlate Alarms for RCA

- Are transactions failing?
- Are customers affected?
- Is authentication server slow?
- Is it a Network issue?
- Are business apps slow?
- How is database response?
- Are business apps slow?
- Can I find the problem?  Did we record everything?
- Application Servers HTTP & SIP )/Gateways
- Call / Session Control Function (SIP & HTTP)
- Customer Management Applications
- Billing Applications
- Service Portals
- Web-Based Customer Services
- Interactive applications performing?
- Web services down?
- IPTV / tru2way™
- Circuit Switched Network
- Are we meeting Service and Content provider SLAs?
- Are 3rd parties meeting SLAs?
- Gaming
- Video Conferencing
- Music Downloads

End User

Network
CA eHealth PM Enables Proactive Service Assurance and Fast MTTR

Collect

- Data feeds to eHealth engine

Analyze & Detect

- Intelligent Alarms Generated

IT Infrastructure Elements

- Polled Data
  - Networks
  - Systems
  - Application
  - Databases

Display

- Provides real time and historical analysis

- eHealth Views & Reports
  - Real-Time
    - Live Status
    - Live Trend
    - Live Exceptions
  - Historical
    - At A Glance
    - Trend Report
    - ...and more
Fundamental Concepts

- Total of these times exceeds condition window
- Variable value
- Threshold
- Problem start time
- Alarm start time
- Analysis window
- Duration
Advanced Algorithms for Actionable Data
Time over Threshold Analysis

Identify when something is too wrong too long

Natural Deduplication Reduces Noise

Time Over Threshold = 15 min.

Threshold = 60%

Time Window = 1 hour
Advanced Algorithms for Actionable Data
Deviation from Normal Analysis

Know when unusual performance is occurring

Time Window = 1 hour

Time is Unacceptable = 15 min.

Upper Threshold
Baseline
Lower Threshold

Dynamically maintained baseline reflects business reality
Dynamic Thresholding, Learns Behaviors
Wide Range of Real-Time and Historical Reporting

**Identify when something is too wrong for too long**

- Time Over Threshold = 15 min.
- Time Window = 1 hour

**Is performance unusual compared to normal behavior?**

- Time is Unacceptable = 15 min.
- Time Window = 1 hour

Reduce noise by a factor of 25!

Networks

Systems

Databases

Voice/Video,

Energy

Automatically determines baseline values
Live Exceptions
Single View of All Critical Performance Issues

> Displays threshold violations according to technologies and elements

- Dedupes alarms
- Accesses Live Trends and reports
Live Status
Shows What is Most Important to You

> Real time views of IT and business entities
> Personalised views
> Alarm status based threshold policies
> Access to Live Trend views and reports
Live Exceptions

Context-Sensitive Workflow, Real-Time & Historical Data

Operations team is alerted of degradations, potential outages and hard faults

Service Desk & NOC identify source of the problem

Technician uses actionable data to improve performance

Live Trend

At-a-Glance Report

Trend Report
Alarm Detail Report

System: CPU KAUW003WW01-SH-Cpu-1
Unusually high CPU Utilization

CPU Utilization

Threshold Value > 250

Time

Auto Range: Custom
From: 01/30/2008 12:00 AM
To: 01/30/2008 11:59 PM

Created: 02/04/2008 04:53:43 PM
Live Trend
Real-Time Troubleshooting and Analysis

> Single-variable, multi-element or multi-variable, single element

> Continuously charts statistical variables as they are collected

> View the immediate effects of configuration changes
Web based Live Reporting

Access precise attribute values for any data point
Hover-over shows counts of alarm severities. Drill down on alarm status will bring up list of alarms which can be drilled to Alarm Detail Report. Drill down on element name runs AAG report, while drill down on chart runs Trend report.
Integration Example
CA eHealth Live Health Alarms in CA Spectrum IM
CA eHealth PM 3rd Party Integration
Adds Value to Your Existing Tools and Practices

Live Trend

Live Exceptions

At-a-Glance

Trend Report

Alcatel EMS CBGX; Lucent Naviscore; Cisco Info Center, IP Solution Center, Netflow & WAN Mgr; EMC SMARTS; HP Openview Network Node Mgr; IBM NetCool; Nortel Preside & GGSN; Starent ST16

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CA eHealth PM 6.2 TA Alarming

> Traffic policy follows existing Live Health model
  ▪ Support Time Over Threshold conditions in TA rules
  ▪ Support Deviation From Normal conditions in TA rules (implies baseline calculation support)
  ▪ Support Short Term Baseline conditions in TA rules

> Traffic data to be examined every 5 minutes for possible policy violations

> Rule examples:
  ▪ Bytes/sec for application X exceeds a threshold for Y minutes or deviates from normal
  ▪ Bytes/sec for TOS level X exceeds a threshold for Y minutes or deviates from normal
  ▪ A new application X is seen for the first time
CA eHealth PM 6.2 TA Alarming Continued

> Live Rules can be applied to the traffic rate (bytes/sec) for any group of nodes that has been defined as a TA group and for any application that is defined in the TA protocol table

> We will ship default profiles. These are simple rules intended as examples

> Default profiles are not enabled
TA OCE View/Group new Option
Creation of Alarm Aggregate Element
Place TA Aggregate Elements in a Group
TA Sample Profile with Rules

![Profiles Manager screenshot]

Existing Profiles:
- 3G Wireless WAN HMC - Failure
- AAA - Failure
- ACME Packet SD - Failure
- ACME Packet SD - Unusual Workload
- ADVA Service - Failure
- Alcatel IMA Group - Failure
- Alcatel IMA Link - Failure
- Alcatel IP Multicast - Failure
- Alcatel IP Multicast - Unusual Workload
- Alcatel OmniSwitch - Unusual Workload
- Alcatel T1/E1 - Failure

Existing Rules:

<table>
<thead>
<tr>
<th>Status</th>
<th>Element Type</th>
<th>Severity</th>
<th>Rule Message</th>
<th>Variable/Evt</th>
<th>Condition</th>
<th>Time</th>
<th>Threshold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enabled</td>
<td>TA Alarm Aggregation Element</td>
<td>Warning</td>
<td>TA alarm</td>
<td>TA Flows</td>
<td>Time Over T...</td>
<td>For 5 Min...</td>
<td>Above Thres...</td>
</tr>
<tr>
<td>Enabled</td>
<td>TA Alarm Aggregation Element</td>
<td>Warning</td>
<td>TA! TA! TA!</td>
<td>Bytes In</td>
<td>Time Over T...</td>
<td>For 5 Min...</td>
<td>Above Thres...</td>
</tr>
<tr>
<td>Enabled</td>
<td>TA Alarm Aggregation Element</td>
<td>Critical</td>
<td>TA! TA! TA!</td>
<td>Bytes In</td>
<td>Time Over T...</td>
<td>For 10 Min...</td>
<td>Above Thres...</td>
</tr>
<tr>
<td>Enabled</td>
<td>TA Alarm Aggregation Element</td>
<td>Warning</td>
<td>TA!</td>
<td>Bytes Out</td>
<td>Time Over T...</td>
<td>For 5 Min...</td>
<td>Above Thres...</td>
</tr>
</tbody>
</table>

[New Profile...]
[Associate...]
[Copy Profile...]
[Delete Profile...]
[New Rule...]
[Copy Rule...]
[Modify Rule...]
[Delete Rule...]
[Disable Rule...]

OK  Cancel  Help...
Rule Editor

Element Type: TA Alarm Aggregation Element

Severity: Warning

Enable Rule: Yes

Rule Message: TA alarm

Time: For 5 Minutes out of 10 Minutes

Variable: TA Flows

Condition Type: Time Over Threshold

Threshold Of: 0.0 Rate

And

Variable: Bytes In

Condition Type: Time Over Threshold

Threshold Of: Bytes

OK  Apply  Cancel  Help...
R10.0 Proactive Performance Management

> Enhanced proactive performance alerting scalability – Full support for Live Exceptions browser and Live Status display in a CA eHealth PM distributed environment
> JNLP launchable clients
> Ability to periodically resend alarms
> Support for up to 6 ‘and’ conditions per Live rule
> Custom profiles and out-of-box profiles selections
> Out-of-box profiles filtered by technologies in group
> Web Service for Alarm delivery
Live Health Licensing

> Live Health uses a license if all of the following criteria are met

- The element is in a group that is associated with a Live Exceptions profile
- The element has at least one rule that applies to it (meaning it is the correct type and both the attributes and variables match)
- The poller configuration has Live Exceptions monitoring enabled for this element
Summary

> CA eHealth Live Analysis and Alarming automates the monitoring of Infrastructure Key Performance and Capacity Indicators

- Proactive not Reactive
- Reduces MTTF
- Reduces MTTR