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Agenda

> CA eHealth Performance Manager

> Product Updates

  - VoIP Support
  - eHealth Database Option
  - Enhanced Service Provider Support
  - R6.2

> Virtualisation Support

> Future Direction
CA eHealth PM Customer Benefits

> World Class Functionality
  - Best in class Proactive Performance Management solution
  - Patented proactive performance algorithms

> Rapid Time to Value
  - Wide breadth of out of box multi-vendor device and technology support
  - Increased operator productivity via tight integrations
  - Lower Total Cost of Ownership via reduced administrative overhead

> Increased Service Availability Management
  - End to end performance management across technology silos
  - Automatic identification of infrastructure issues before users are impacted
  - Application Awareness via traffic monitoring and reporting
E2E Performance Management Across Domains

- Intelligent, Proactive Performance Monitoring, Analytics
- Energy, Other
- Application Awareness via Traffic Management, Application Response
- Networks – Data and Voice, Wireless, WiMax, MPLS QoS, etc
- Systems and Virtual Systems Performance
- Database Performance

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Proactive Performance Alerting

Black line shows baseline based upon historical performance

Red line shows measured performance

Gray shows area of tolerance for performance
Building the foundation for the future

Service Assurance

Service Automation

CA Catalyst
Bi-Directional Web Services Integration Layer Facilitates Discovery, Event/Alert, Actions and Updates

Resource Virtualisation

Routers
Switches
WANs, MANs
MPLS, QoS,
Multicast, VoIP,
IPTV, WiMax,
IMS, etc

Mainframe
Physical Systems
Virtual Systems

Oracle
SQL Server
Sybase
DB2

JAVA, .Net

Green IT - Temperature, Humidity, Power, etc.

End-to-End Availability & RCA
(CA Spectrum)

End-to-End Performance & Capacity
(CA eHealth)
Health | Quality | Risk | Availability

<table>
<thead>
<tr>
<th>Service</th>
<th>Priority</th>
<th>Health</th>
<th>Quality</th>
<th>Risk</th>
<th>Availability [24 hours]</th>
<th>Operational Mode</th>
<th>Drill-down</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online Order Management</td>
<td>Critical</td>
<td>66%</td>
<td>66%</td>
<td>66%</td>
<td>Production</td>
<td>Action</td>
<td></td>
</tr>
<tr>
<td>Online Order Processing</td>
<td>Critical</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>Production</td>
<td>Action</td>
<td></td>
</tr>
<tr>
<td>ESX_DEMO</td>
<td>High</td>
<td></td>
<td>100%</td>
<td>100%</td>
<td>Production</td>
<td>Action</td>
<td></td>
</tr>
</tbody>
</table>

Risk Summary Status - Last 7 Days

Summary Status - Last 7 Days

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Integrated IP Telephony Support - Proactive Performance Management of IP Telephony
CA eHealth PM Converged Network Data Collector (CNDC)

> Collects non-SNMP data from your converged network - voice and other media servers

> First platform support includes Cisco Unified Communications Manager (UCM) versions 3.3 – 6.X (7.0 will be supported in r6.2.0)

> eHealth CNDC Value Added – What it means to you:
  - Provides automated data collection, processing, analysis, and reporting for all your Cisco UCM clusters
  - One-stop for all your converged network health management needs, voice/media and data
  - Enable proactive management of your converged network using the rich set of features and reports from eHealth, the established leader in performance management.
Integrated Configuration and Management

> Optional settings provide maximum flexibility for follow-up fine tuning and optimisations
  - Create organisational hierarchies to better manage your converged network media servers
  - Create users with proper access control settings
  - Adjust data collection elements and frequencies
  - Adjust throttling parameters such as maximum connection settings
  - Adjust data retention parameters such as data archival schedules, log and raw file retention days

> Easy monitoring and proactive management helps at your finger tips
  - Alerts View
  - Task Activity View
  - Task History View
  - Log View
## A Few Number Facts

<table>
<thead>
<tr>
<th>Count</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>57</td>
<td># of New Element Types for Cisco UCM Support</td>
</tr>
<tr>
<td>450</td>
<td># of New Variables for Cisco UCM Support</td>
</tr>
<tr>
<td>25</td>
<td># of New Report Templates for Cisco UCM Support</td>
</tr>
</tbody>
</table>
Data - UCM Collectables

- Servers
- CallManagers
- Regions
- Locations
- Device Pools
- Users
- Devices
- Directory Numbers
- Trunks
- Gateways
- Conference Bridges
- Partitions
- Pilot points
- Voice Mail Ports

- CallManager Statistics
- Network Statistics
- Database Statistics
- Web Server Statistics
- TFTP Statistics
- Call Management Records
- Call Detail Records
- License Details
- H.323 Statistics
- FXO/FXS Statistics
- Gateway Statistics
- PRI Device Statistics
- T1CAS Device Statistics
- Analog Access Statistics
- Attendant Console Statistics
- System Performance Statistics
- SIP Trunk Statistics
- Conference Statistics
- Service Status
CA eHealth Database Performance Option
## Major Functionality Comparison

<table>
<thead>
<tr>
<th>Feature</th>
<th>CA Insight DPM r11.2.4</th>
<th>eHealth Database Performance Option r6.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>eHealth persona based installation</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Major database release support (Oracle, SQL Server, Sybase, DB2 for Linux, UNIX, Windows)</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Remote and agent based monitoring ability</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>eHealth at a glance database reporting</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Included Insight database AIM / SystemEDGE for eHealth and SPECTRUM integration</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Database alert notifications into eHealth Live Exceptions</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Out of the box presets: scans types, scan rates, alarms</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Choice of a separate database performance archive (MDB)</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Database Command Center DBA functionality</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Choice to use CA Insight DPM database OS knowledge agents</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Complete DB key performance indicators</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>
Provides insight into Database and Database Server KPI's

New Database Quality Index metric that combines many KPI's into a single

FR01-LAB-AH-OracleDB-EHEALTH

CPU Utilization
Physical Memory
Disk Usage
Calls/Second
Get/Second
User Commits
User Rollbacks
User Rollback Ratio
Blk Changes/Trans
Blk Visits/Trans
Calls/Trans
User Calls/Parse
Write I/Os/Call
Chk'd Blk Rate
Consistent Chg
Consistent Rate
Row Sze Ratio
Sort Coll Ratio
Rckd Log Per Tc
Buf Cache Hit
CPU Util Per Tc
Associations
Enhanced Security Support

> **RADIUS Authentication**
  - Centralised authentication mechanism to manage user access to various web applications within a corporation
  - This enhancement provides eHealth with the option of web user authentication using a RADIUS server
  - The authentication process is performed and “shifted” from the internal eHealth Apache web server to an external RADIUS server

> **SAML Authentication**
  - Security Assertion Markup Language (SAML) for exchanging the credential information between different web sites
  - Single-Sign-On (SSO) across multiple domains or firewalls
  - Utilises CA Embedded Entitlements Manager (EEM)
Support for Carrier Class devices

eHealth Integration Modules –
Alcatel-Lucent 5620 SAM

> Phase 1 – 6.0.5 and 6.1.1
> New Integration Module to support XML interface with the 5620 SAM platform
> Support in eHealth 6.0 and 6.1 releases
> Support for SAM v6.0 and v6.1
> Support for 7710 and 7750
> Support for customer specified IOMs and MDAs
> New 5620 SAM IM User Guide
  - Phase 2 – 6.2.0
  - Updated to support SAM v7.0
  - Support in eHealth 6.2
    - Added support for 7705, 7250, 7450
Performance Dashboard
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.
### Live Dashboard Router Example

![Live Dashboard Router Example](image)

#### Performance Dashboard: usfrswehdc-RH

**Last Updated:** Monday, June 08, 2009 11:31:37 AM

<table>
<thead>
<tr>
<th>Name</th>
<th>Total Incoming Pkts</th>
<th>Total Outgoing Pkts</th>
<th>Total Incoming Bytes</th>
<th>Total Outgoing Bytes</th>
</tr>
</thead>
<tbody>
<tr>
<td>usfrswehdc-RH</td>
<td>36.7K/seg</td>
<td>37.7K/seg</td>
<td>24.5M/seg</td>
<td>24.5M/seg</td>
</tr>
</tbody>
</table>

#### Router Switch with CPU - Top 10 sorted by Total Incoming Pkts

<table>
<thead>
<tr>
<th>Name</th>
<th>CPU Utilization</th>
<th>Availability</th>
<th>Memory Utilization</th>
<th>Buffers Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>usfrswehdc-RH:Sub-Module</td>
<td>11%</td>
<td>100%</td>
<td></td>
<td>39.7</td>
</tr>
<tr>
<td>6-CPM-of-6-1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>usfrswehdc-RH:Mod-Module</td>
<td>7%</td>
<td>100%</td>
<td></td>
<td>34.2</td>
</tr>
<tr>
<td>6-CPM-of-6-2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Generic LAN Interface - Top 10 sorted by Bandwidth Utilization

<table>
<thead>
<tr>
<th>Name</th>
<th>Bandwidth Utilization In</th>
<th>Bandwidth Utilization Out</th>
</tr>
</thead>
<tbody>
<tr>
<td>usfrswehdc-GigabitEthernet/19</td>
<td>7.9%</td>
<td>1.4%</td>
</tr>
<tr>
<td>usfrswehdc-GigabitEthernet/3</td>
<td>5%</td>
<td>0.3%</td>
</tr>
<tr>
<td>usfrswehdc-GigabitEthernet/0</td>
<td>2.7%</td>
<td>13%</td>
</tr>
<tr>
<td>usfrswehdc-GigabitEthernet/9</td>
<td>2.7%</td>
<td>13%</td>
</tr>
<tr>
<td>usfrswehdc-GigabitEthernet/7</td>
<td>1.5%</td>
<td>0.25%</td>
</tr>
<tr>
<td>usfrswehdc-GigabitEthernet/6</td>
<td>0.66%</td>
<td>2.0%</td>
</tr>
<tr>
<td>usfrswehdc-GigabitEthernet/5</td>
<td>0.62%</td>
<td>0.76%</td>
</tr>
<tr>
<td>usfrswehdc-GigabitEthernet/4</td>
<td>0.58%</td>
<td>0.40%</td>
</tr>
<tr>
<td>usfrswehdc-GigabitEthernet/33</td>
<td>0.47%</td>
<td>0.39%</td>
</tr>
<tr>
<td>usfrswehdc-GigabitEthernet/33</td>
<td>0.12%</td>
<td>1.1%</td>
</tr>
<tr>
<td>usfrswehdc-GigabitEthernet/47</td>
<td>0.11%</td>
<td>0.06%</td>
</tr>
</tbody>
</table>

---

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Provides KPI insight into Virtual Centers, Data Centers, ESX Hosts, and Virtual Machines.
Alarm Details for jerry-1691-SH/export/jerry01

Last Updated: Monday, June 08, 2009 11:08:03 AM

<table>
<thead>
<tr>
<th>Severity</th>
<th>Rule Message</th>
<th>Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critical</td>
<td>This Partition has greater than 60% utilization(Critical)</td>
<td>Partition Utilization</td>
</tr>
<tr>
<td>Major</td>
<td>This Partition has greater than 30% utilization(major)</td>
<td>Partition Utilization</td>
</tr>
<tr>
<td>Minor</td>
<td>This Partition has greater than 20% utilization(minor)</td>
<td>Partition Utilization</td>
</tr>
<tr>
<td>Warning</td>
<td>This Partition has greater than 5% utilization(warning)</td>
<td>Partition Utilization</td>
</tr>
</tbody>
</table>
Each user can customise the device dashboard to meet their specific needs by technology types.
Live Traffic Analysis – Proactive Alerting
TA Live Analysis Value

> Proactive analysis on Flow data
  - Time over Threshold
  - Deviation from Normal

> Application Performance
  - Flows represent conversations between a source and destination
  - Sources are users, and destinations are applications
  - Poor response can be correlated with traffic volume

> Technology
  - Same familiar Live Health setup
  - Alarms can be sent to Spectrum
Brix Integration
BrixWorx IM Customer Value

> Import configuration and performance data from Brix Verifiers
  - Latency / OneWay
  - Real Time Voice
  - DNS
  - FTP
  - HTTP
  - ICMP / PING
  - RADIUS
  - TCP
  - Traceroute

> Performance Reporting and LE

> VoIP PM used by many Service Providers
Unbundled Oracle Variant
Customer Value

> Allows customers who can't sign a third party pass through license agreement to use eHealth.
  - No reference to Oracle in EULA
  - Oracle not shipped with eHealth
  - Oracle OOB patches not shipped with eHealth
  - New part numbers for this variant

> Customer provides their own copy of Oracle Enterprise edition with Partitioning.
  - Installed on same system as eHealth prior to CA eHealth PM
  - CA eHealth PM still treats the DB as embedded
Power Management Support

> APC Certification Efforts for CA eHealth PM 6.2
  - Symmetra PX 40kw
  - InfraStruXure PDU - 3-phase 40kw
  - Meter and Switched Rack PDU - AP78xx and AP79xx series
  - InRow Cooling - RC and RP
  - Environmental Monitoring Unit - AP9340

> Additional Certifications for CA eHealth PM 6.2
  - TrendPoint

> New Technologies Added for CA eHealth PM 6.2
  - Facility Devices
  - Power/Energy Component
  - Industrial Component
  - Environment Component

> New Product
  - EcoMeter
IM Updates and New Certifications
Integrations

<table>
<thead>
<tr>
<th>IM</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcatel-Lucent 5620 NM</td>
<td>Data</td>
<td>5620 NM r9.1 support</td>
</tr>
<tr>
<td>Alcatel-Lucent 5620 SAM</td>
<td>Data</td>
<td>Phase II Update (v7, new modules, updates)</td>
</tr>
<tr>
<td>BrixWorx</td>
<td>Data</td>
<td>Initial Release</td>
</tr>
<tr>
<td>HPOV</td>
<td>W/F</td>
<td>HPOV v8 support</td>
</tr>
<tr>
<td>Starent PDSN</td>
<td>Mob</td>
<td>VZW KPI’s added Parser updates</td>
</tr>
<tr>
<td>Starent GGSN</td>
<td>Mob</td>
<td>Initial Release</td>
</tr>
</tbody>
</table>

Certifications

> September Kit
> VC AIM Updates, Solaris Zones
> Cisco Nexus, Unity, Juniper, Trendpoint, ALU Routers, NSM AD, Ericsson IMS, etc (http://support.concord.com/devices/)
Virtualisation
Interesting Statistics

38  % Growth in Virtualisation

50  = # of VMs when management becomes crucial

15  % Virtualisation in production

1   = Number of days to E2E mgmt
Virtualisation Gains Mainstream Status

Gartner recommends as a best practice the integration of the management of both the physical and virtual infrastructure.¹

IDC reports by 2012-2013, virtual server management capabilities will begin to blend into core systems management architectures - having become part of the fabric of dynamic datacenters.²


Virtualisation Adds Complexity

- Physical to virtual mapping
- End-to-end infrastructure visibility (both physical & virtual)
- Provisioning of VMs
- Virtual sprawl
- Configuration changes
- Application availability
- Automation of routine tasks
- Health / performance reporting
Business Drivers for Virtualisation Management

> Broad range of customers
  - Traditional systems management customers
  - Large system integrators
  - Managed Service Providers

> Need smart IT solution for virtualised environment
  - Visibility for VMware infrastructure
  - Standard (one) management platform
  - Service availability and assurance
  - Cluster management
Business Value

> Drive high service quality through proactive performance management, fast problem identification and resolution
>

> Respond to the business with rapid deployment and management
>

> Maximise IT efficiency with common understanding, targeted trouble-shooting

Move into production with confidence!
CA eHealth PM & Virtual Performance Management

Visibility into both physical and virtual server environments

AAG and Trend Reports for ESX Hosts:

- Machine Counts
- CPU Utilisation
- Memory Used
- VM Memory
- Console Memory
CA eHealth PM & Virtual Performance Management

Automatically discovers VMware servers and captures Key Performance Indicators

AAG and Trend for individual VMs without having to install additional agents:

- Heartbeats
- CPU Shares
- VM Mem Allocation
- % Mem actually used
CA eHealth PM & Virtual Performance Management

See what VMs are on what hosts!

- Prevents virtual sprawl
- Helps troubleshoot performance issues

<table>
<thead>
<tr>
<th>Association Type</th>
<th>Element Type</th>
<th>Element</th>
</tr>
</thead>
<tbody>
<tr>
<td>Device</td>
<td>Generic System</td>
<td>usil474vm2-6665-AH-VMachine-ASM-VC2A-57</td>
</tr>
<tr>
<td>Element</td>
<td>CA ASM VMware Virtual Machine</td>
<td>usil474vm2-6665-AH-VMachine-ASIL474LNX2-LinuxVentasCluster-49</td>
</tr>
<tr>
<td></td>
<td>CA ASM VMware Virtual Machine</td>
<td>usil474vm2-6665-AH-VMachine-ASIL474LNX3-LinuxVentasCluster-50</td>
</tr>
<tr>
<td></td>
<td>CA ASM VMware Virtual Machine</td>
<td>usil474vm2-6665-AH-VMachine-USIL474WIN1-52</td>
</tr>
<tr>
<td></td>
<td>CA ASM VMware Virtual Machine</td>
<td>usil474vm2-6665-AH-VMachine-USIL474WIN2-51</td>
</tr>
</tbody>
</table>
CA eHealth PM for Virtualised Environments

- Automatic detection of changes in virtual environment
  - VMotion detection
  - Addition/reduction of resources
- Live interactive reporting
  - Visualisation of Virtualisation KPI’s via an interactive web interface
  - Updates real-time as data is acquired
Summary

> CA eHealth PM is not just for networks anymore
  - Product name was recently changed to remove “network”
  - DO NOT forget about systems (physical & virtual), database, voice, client/server applications, and energy management

> CA eHealth PM enables customers to move from reactive to proactive management