2009 NonStop Operations Management Update

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NonStop Manageability Architect
Distinguished Technologist
NonStop manageability strategy

Best TCO and best TCE to customers

Customer satisfaction
Create new manageability products and solutions, and enhance and improve existing ones to satisfy customer needs

Customer choice
Provide customers a comprehensive selection of manageability products and solutions to choose from

Enterprise integration
Provide manageability products and solutions to manage NonStop in heterogeneous enterprise environments

HP Unified Infrastructure Management
## NonStop manageability portfolio

| Basic operations | NonStop System Console (NSC)  
|                 | Open System Management (OSM) |
| Homogeneous NonStop environments | Web ViewPoint  
|                              | Pocket ViewPoint  
|                              | Real-time Process Monitor (RPM)  
|                              | Performance Management Bundle  
|                              | System Performance Analysis using Measure (SPAM)  |
## NonStop manageability portfolio

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<th>NonStop manageability portfolio</th>
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<td>HP Systems Insight Manager (SIM)</td>
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<td>NonStop Tivoli Adapter</td>
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Basic Operations
## NonStop System Console (NSC)

<table>
<thead>
<tr>
<th>Model</th>
<th>BladeSystem</th>
<th>Non-BladeSystem</th>
<th>BladeSystem</th>
<th>Non-BladeSystem</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>S7X-BLC8/ S7X-BLC8NM (No monitor)</td>
<td>S7X-NSC8/ S7X-NSC8NM (No monitor)</td>
<td>BLCR4, S7X-RACKMN2 (rack-mounted)</td>
<td>NSCR4, S7X-RACKMN2 (rack-mounted)</td>
</tr>
</tbody>
</table>

**Form factor**
- **Base model**
  - BladeSystem: ML110
  - Non-BladeSystem: DL320G5p

**CPU**
- BladeSystem: Dual-core, 2.33 GHz
- Non-BladeSystem: Dual-core, 2.66 GHz

**Memory**
- BladeSystem: 2 GB
- Non-BladeSystem: 2 GB

**Hard disk**
- BladeSystem: 72 GB
- Non-BladeSystem: 80 GB

**NICs**
- BladeSystem: Dual
- Non-BladeSystem: Dual

**OS**

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**Additional DIMMs available now**

**New hardware models and Windows Server 2008 OS coming in 2010**

All future plans are subject to change without notice.
Latest OSM features

- Support of NB50000c-cg BladeSystems and its components
- Support of NS2000, NS2000T and NS2000ST servers
- Support of NonStop BladeClusters
- INS software update on Telco CLIMs
- Support of IP CLIMs on NS16x000 servers
- CLIM Boot Service Configuration Wizard to configure DHCP, DNS, and bootp services on CLIMs
- Support of NAT (Network Address Translation) environments
- Support of Java version 6 (JRE 1.6)
- Support of OSM Low-Level Link on Microsoft Vista (non-NSC)
- Security enhancements in OSM Event Viewer
OSM plug-in for data sanitization

- Meets Department of Defense (DoD) standards for data sanitization as described in the DoD 522.22-M pattern
  - Writes over all segments of the disk including spare sectors, making at least three passes on the disk to overwrite all data
  - Uses a random series of characters during one of the write passes
- Allows customers to create their own patterns
  - Allows user to specify the number of write passes and specific write patterns to overwrite the disk, and save the patterns for future use
- Allows disk sanitization to be run concurrently on multiple disks
- Supports disks sold on NonStop S-series, Integrity NonStop NS-Series and Integrity NonStop BladeSystems
- Provides comprehensive reports
- Sends EMS events to notify when sanitization was initiated and when it was completed successfully or with errors
Homogeneous NonStop Environments
Web ViewPoint

- Light-weight browser-based application to:
  - Monitor system performance
  - Monitor EMS events
  - Interact with disk, file, spooler space, etc.

- Single interface into multiple neighborhoods and residents, configured by user

- Plug-ins for:
  - Pathway
  - ASAP
  - Event Analyzer – planned for September, 2009
  - Storage Analyzer – planned for October, 2009

All future plans are subject to change without notice
Web Viewpoint Dashboard

1. CPU gauges
2. Visual alert & drill down
3. CPU plot
4. Busy processes
5. Disk
6. NetLine
7. TMF
8. Events
9. Detail description
10. Quick ack

Consolidated view with drill down options
Enhanced and integrated administration

Distribution of alerts, based on individual or group calendars
Pocket ViewPoint
Mobile NonStop management

Tap to start Pocket ViewPoint

Choose a combination of:
- CPU Busy
- Event Monitor
- CPU Node list

Quick menu access and conversational terminal emulator

Events query

Drill-down

Process Busy List

Process Detail

Easy query of past Events
Pocket ViewPoint future plans

- One solution, Multiple platforms
- HTML-based

To be released around end of 2009

Multi-node overall view with alert notification
Drill-down to CPUs of a single node
Drill-down to busiest processes on a single CPU
Click/tap for detail process information

All future plans are subject to change without notice
Real-time Process Monitor (RPM)

- New **low-cost** point-product for ultra-fast discovery and display of busiest CPUs and processes
  - Fast setup and configuration (via **Install Wizard**), easy-to-use, very low overhead
- Real-time analysis and display activity by CPU, node, selected nodes, or entire cluster
  - **By CPU**: displays busiest processes in one or more CPUs
  - **By node**: displays busiest processes in one or more nodes
- Results sorted, filtered, and color-coded in real-time
  - **User-defined** color-coding
- Statistics synchronized across CPUs, nodes, and users
- Supports **many device types**, including TTY, VT100, ANSI, T6530, Disk, and Process
- Supports both **NSK and OSS** file/path names
- Does not require Measure
Performance Management Bundle

SA31v4 (CD-based – Workstation products)

- PMC: Microsoft Access database of TPDC data
- Data Browser: Browsing and reporting of Open Database
- Insight: Graphical audits of Open Database
- DiskPro: Graphical analysis of disks and files
- SPA: Performance analysis and what-if scenarios
- Pathway View: Pathway management

SA30 (SUT-based – Host products)

- Measure: Performance data gathering
- GPA: Performance tuning (CPU’s, cache analysis, etc.)
- Viewsys: Terminal based real-time performance analysis
- TPDC: Data collection facility for Open Database
System Performance Analysis using Measure (SPAM)

- Create a metrics “Knowledge Base”
- Organize all separate collections into a data pool
- Select the time interval for analysis
SPAM report creation

• Drill-down to any time period for a quick review before generating reports

• Select from available dynamically created list of reports and charts, based on selected data set
SPAM reports

• Organized HTML reports to view or download
• Export to Excel format
• Zip created HTML files to archive or send via e-mail
  ▪ Unzip and click on index to see actual HTML reports
Enterprise Integration
Availability, Statistics, and Performance (ASAP)

• **Monitors** availability and performance of 34 entities and 2000+ attributes:
  - **System** objects, such as CPUs, disks, files, memory, and processes
  - **Subsystem** objects, such as RDF, spooler, TMF, and tape
  - **Network** objects, such as CLIM, X.25, Expand lines, TCP/IP, subnets, routes, ports, and services
  - **Applications** – monitors availability and performance of virtually any type of abstract application domain

• **Maintains** high availability via Goals and Actions to perform automated actions when goals are not met

• **User-defined dashboards**
  - Customizable GUI
  - Can mix graph types
  - Can mix entities
  - Can save many different Dashboards
  - Allows wide range of different Dashboards
  - Can Save/Restore a dashboard at the click of the mouse

• Measure on demand to show related measurement
ASAP components

- **ASAP Core** includes:
  + 17 built-in interfaces, such as EMS, fat client, thin client, conversational, HTML, Excel, XML, e-mail, phone, pager, Web ViewPoint, Website and Enterprise Management
  + Following plug-ins now included in ASAP Core:
    - ASAP TCP/IP plug-in
    - ASAP Systems Insight Manager (SIM) plug-in
    - ASAP Operations Smart Plug-in (SPI)
    - ASAP 3.0 Free Upgrade

- **ASAP plug-ins**, sold separately:
  - ASAP Extension
  - ASAP Hybrid Extension for Linux
ASAP recent updates

• ASAP 3.1 in November, 2008
  − Support of CIP (Cluster I/O Protocols) subsystem and CLIMs (Cluster I/O Modules)
  − NonStop BladeSystem-specific attributes, such as IPU and Affinity
  − New real-time thin-client to provide
    • 15 new HTML reporting options, including e-mail, phone, and pager
    • New HTML colors, icons, and graphs
    • New local, remote, and proxy websites
    • On-the-fly HTML reports

• ASAP 3.2 coming in early 2010
  − Complex Goals to provide enhanced goal capabilities
  − Escalating goals to allow setting multiple goals on the same attribute
  − Combined goals to allow combining multiple goals/attributes into a single goal

All future plans are subject to change without notice
Operations Management Bundle

- Web ViewPoint
- Pocket ViewPoint
- ASAP
- ASAP plug-in for Web ViewPoint

25% discount off the total price of the individual products
TimeSync

- Accurate from .000001 to .01 seconds
- Can operate as a client or a server, or both simultaneously
- Supports NonStop, Linux, and Windows

**Client mode**
- Obtains time from remote time sources/servers (running TimeSync or NTP/SNTP server), and updates local time accordingly
- Never allows time to move backward unless configured to do so
- Multi-source mode to average time from multiple sources
- Provides configurable offset for system clocks not kept in GMT/UTC

**Server mode**
- Acts as a time source/server for any remote system running TimeSync in client mode, or NTP/SNTP client
- Allows systems that do not keep system time in GMT/UTC to act as time sources via configurable offset
TimeSync value-add

- Extremely light-weight, with no performance impact
- Identical configuration parameters on all supported platforms
- Integrates with native event management service on each platform
- Maintains its own activity log file
- Optional logging to dedicated log file for in-depth tracing
- Can run as a service on Windows, daemon on Linux, or persistent process on NonStop
- TimeCom to alter the configuration and obtain status

**Version 1.1 available now**
- SyncAt list to specify time(s) for sync operations
- SyncNow to initiate a sync operation on demand
- Numerous enhancements to TimeCom
**HP Systems Insight Manager (SIM)**

The foundation for unified infrastructure management

- Installs on Windows, HP-UX, and Linux
- Manages all HP servers, including **NonStop**
- Inventory, fault, and configuration management
- Secure - Role-based authorizations; OS-based authentication; SSL, SSH support
- Distributed task facility to remotely run commands, scripts, and batch files on managed systems
- Plug-in extensibility – add additional tools and applications
NonStop integration with HP SIM

- HP SIM 5.0 and later
- G06.27 and later
- H06.04 and later
- J06.03 and later

OSM currently integrated with HP SIM 5.3
HP SIM blade plug-in support of NonStop BladeSystem in HP SIM 5.3

- Discovery and identification of NonStop systems via WBEM support provided by OSM
- OSM alarms displayed in HP SIM
- NonStop hardware devices displayed in HP SIM
- NonStop Guardian and OSS commands invoked from HP SIM
- Links to OSM Service Connection and OSM Event Viewer
- HP SIM shipped free-of-charge with NonStop System Console DVD suite
NonStop Cluster Essentials

• One package to perform all cluster management tasks across NonStop and Linux
  – Using same web-based user interface

- Any clustering technology
- Integrated event monitoring
- Virtualized config/control
- Software consistency check
- Integrated health monitoring
- Single-click boot
- Unified account management
- Integrated inventory reporting

Integrated performance monitoring via HP NonStop Cluster Performance Essentials
Integrated I/O management via HP NonStop I/O Essentials
NonStop Cluster Essentials
Managed platforms

- HP Integrity NonStop BladeSystems
- HP Integrity NonStop NS-Series servers
- HP NonStop S-Series servers
- HP rack-mount ProLiant Redhat Linux servers
- HP ProLiant Redhat Linux BladeSystems
- Support of CLIMs and CLIM-attached disks

Version 2.0.0 now available with NonStop BladeSystem and NonStop S-Series support and multiple usability enhancements

<table>
<thead>
<tr>
<th>System Name</th>
<th>System Type</th>
<th>System Address</th>
<th>Product Name</th>
<th>OS Name</th>
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<td>NonStop Server</td>
<td>NonStop CS</td>
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<tr>
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<td>Server</td>
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<td>NonStop CS</td>
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<td>NonStop CS</td>
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<td>Cluster</td>
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NonStop Cluster Performance Essentials

- Plug-in to HP NonStop Cluster Essentials
  - Integrated with HP SIM
- Integrated view to monitor real-time performance issues across a cluster of NonStop and Linux systems
- Drill-down to discover performance bottlenecks
- Performance trend displays
- Alert notifications based on defined thresholds
- Secure communication between NonStop Cluster Performance Essentials and managed systems
- Support of CLIM and CIP performance monitoring

- A new plug-in for INS (Intelligent Network Server) coming soon

All future plans are subject to change without notice
NonStop I/O Essentials

• A plug-in to HP SIM
• Virtualized configuration and control of all CIP management tasks on NonStop BladeSystems and NS-Series systems
• Ability to perform all CIP management tasks without knowing the syntax of NonStop or Linux commands
• Pre-defined management tasks shipped out-of-box to configure and control all aspects of CIP
• Secure and encrypted communication between console and NonStop systems
• Integration with HP NonStop Cluster Essentials to enable CIP management across NonStop clusters

• **New version with support of storage encryption and INS configuration and control coming soon**

All future plans are subject to change without notice
HP Storage Essentials

Main console for open, heterogeneous SAN management

Capabilities:
- Application-to-LUN auto-discovery
- Topology visualization
- Capacity management
- Real-time performance monitoring
- Historical trends and capacity planning

Business Benefits:
- Ensure required business continuity and availability levels – prevent downtime and data loss
- Save money by just-in-time capacity purchases and better utilization of existing resources
- Plan capacity purchases to ensure no disruption to the business
- Manage growing infrastructure with existing resources
Insight Remote Support Advanced (RSA)

- Proactive, web-based, remote monitoring and diagnostic tool to manage systems and devices
- Real-time monitoring of hardware events and automated notification to HP support center
- Remote troubleshooting and repair capabilities
- Internet connectivity to HP support
- Quick and secure connection
- Support of all HP platforms

Insight RSA CMS (Central Management Server) requirements

- Windows Server 2003
- At least 3 GB of memory
- HP SIM version 5.3 or later

NSC usage as CMS

- NSC can be used as a CMS, with currently available additional 2 GB DIMMs.
- HP recommends using a centralized CMS, with a central copy of HP SIM and Insight RSA for the whole enterprise.
Insight RSA support of NonStop

Insight RSA support of NonStop available now

- RSA will be the notification and remote access solution going forward.
- Modem and ISEE-based notification and remote access not supported in 2010

All future plans are subject to change without notice
**HP BTO (Business Technology Optimization) Centers**

BTO Centers: Optimize key functions

<table>
<thead>
<tr>
<th>STRATEGY</th>
<th>APPLICATIONS</th>
<th>OPERATIONS</th>
<th>Industry-leading products and technology from</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project and Portfolio Management Center</td>
<td>Quality Management</td>
<td>Business Service Automation</td>
<td>HP OpenView</td>
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<tr>
<td>CIO Office</td>
<td>Quality Center</td>
<td>Business Service Management</td>
<td>Mercury</td>
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<td>SOA Center</td>
<td>Performance Center</td>
<td>Data Center Automation Center</td>
<td>Opsware</td>
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<tr>
<td>CTO Office</td>
<td>Application Security Center</td>
<td>Client Automation Center</td>
<td>Peregrine Systems</td>
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<td>Network Management Center</td>
<td>Service Management Center</td>
<td>Bristol Technologies</td>
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<tr>
<td></td>
<td>Universal CMDB</td>
<td>IT Service Management Center</td>
<td>Novadigm/Consera</td>
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</table>

**NonStop support in many BTO Centers**

All future plans are subject to change without notice.
<table>
<thead>
<tr>
<th>Center</th>
<th>NonStop support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project and Portfolio Management Center</td>
<td><strong>All products</strong> supported today</td>
</tr>
<tr>
<td>SOA Center</td>
<td>Will be supported, based on customer demand</td>
</tr>
<tr>
<td>Quality Center</td>
<td><strong>Business Process Testing, Center Management</strong> supported today; other product support based on customer demand</td>
</tr>
<tr>
<td>Performance Center</td>
<td><strong>LoadRunner</strong> supported today</td>
</tr>
<tr>
<td>Application Security Center</td>
<td>Will be supported, based on customer demand</td>
</tr>
<tr>
<td>Business Availability Center</td>
<td><strong>TransactionVision, Business Process Insight, Discovery and Dependency Mapping, and SiteScope supported today; other product support based on customer demand</strong></td>
</tr>
<tr>
<td>Operations Center</td>
<td><strong>Operations Dashboard, Operations Manager, Reporter</strong> supported today; other product support based on customer demand</td>
</tr>
<tr>
<td>Network Management Center</td>
<td><strong>All products (other than Performance Insight and TeMIP)</strong> supported today</td>
</tr>
<tr>
<td>Data Center Automation Center</td>
<td><strong>Storage Essentials, Release Control</strong> supported today; <strong>Operations Orchestration</strong> support in 2009; other product support based on customer demand</td>
</tr>
<tr>
<td>Client Automation Center</td>
<td><strong>All products</strong> supported today</td>
</tr>
<tr>
<td>Service Management Center</td>
<td><strong>DecisionCenter, Service Manager</strong> supported today; other product support based on customer demand</td>
</tr>
<tr>
<td>Universal CMDB</td>
<td><strong>Supported today</strong></td>
</tr>
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Operations Agent for NonStop (OVNM)

Provides object monitoring and event processing

• Automatic discovery of NonStop objects
• Processes subsystem and application events
• Provides customized threshold setting
• Sends messages and instructions upon violations
• Supports ACI Base24, Telco (HLR, INS), and MQ Series
• Interfaces with HP Operations Manager
• Provides NonStop data to other enterprise management systems, such as Tivoli, or any other SNMP-based management application
OVNM 5.0 released in January, 2009

- More support for managing homogeneous NonStop environments
- New OVNM Console Object Map/Object Stats
  - Hierarchical view of business application components
- Event escalation support
  - Allows another action to be taken if a threshold remains in violation for a defined time period
- Object Configuration Client
- Host installation enhancements
  - Multiple installations on the same node (e.g., for production and test)
- New scheduler for simple scheduling of operation batch jobs
- Support for HP Operations Manager 8.0, and MQ Series V5.3
- SNMP adapter for Tivoli, NetCool, and Patrol
- Support of Windows XP and Vista clients
- Performance enhancements
Performance Agent for NonStop (OVNPM)

- Monitors business applications
- Web-based, real time graphs, and drill downs
- Sends performance alerts to enterprise consoles
- Analyzes historical trends for capacity planning

**Update 3 (version 1.4) released in January, 2009**
- Support of new TCP/IP and SQL domains
OVNPM, Update 4 (version 1.5) coming in September, 2009

• Optional enhanced data analysis from Windows server
• Can present performance statistics from other products, such as SST Transaction Analyzers

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NonStop Tivoli Adapter

Optional adapter for Tivoli for open system event monitoring of NonStop server through Tivoli TEC Management console

- Event details and types mapped to corresponding Tivoli event space and severity slots
- NonStop environment fully integrated into centralized Tivoli-based system management structure
HP Operations Agents Bundle

OVNM Console

OVNM Agent

OVNPM Agent

MEASURE data

TCP/IP

event data

TCP/IP

event data

HP Operations Manager Plug-in

HP Operations Manager

Tivoli Adapter

optional

Tivoli

Netcool/Patrol/HP Network Node Manager (NNM)

SNMP Adapter

25% discount off the total price of the individual products
## References

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<thead>
<tr>
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Contacts

• NonStop Manageability Product Managers
  – George Haskell (george.haskell@hp.com)
  – Bob Loftis (robert.loftis@hp.com)

• NonStop Manageability Architect
  – Vinay Gupta (vinay.gupta@hp.com)
NSC security policy

• Qualified antivirus and firewall packages can be installed.
• HP will verify that they do not interfere with OSM and other software on the NSC.

When a security patch is announced by HP for any software distributed on NSC, where HP is the vendor, HP will also test that software patch on the NSC and notify customers.

• Every month, HP will qualify the latest set of applicable Microsoft security patches for co-existence with NSC software, within 30 days of Microsoft announcement.
• HP will include relevant third party security patches in the monthly testing.
• Any configuration issues or run-time problems found will be notified to the customers, within 30 days of the monthly Microsoft announcement.
Open System Management (OSM)

- Real-time system health monitoring application for NonStop BladeSystems, NS-Series, and S-Series systems
- Single pane-of-glass for all hardware on NonStop systems
- Application to perform troubleshooting and diagnosis when there are hardware problems
- Management application to perform service procedures
- Application to look at EMS events in real-time or for troubleshooting a past problem
- Required for loading a NonStop system
- NonStop implementation of WBEM (Web-Based Enterprise Management) server
- Way to integrate with HP Systems Insight Manager (SIM) and Instant Support Enterprise Edition (ISEE)/Remote Support Advanced (RSA)
Performance Management Console (PMC)

• Central interface to collect and load metrics, and start analysis

• Quick and generic review of entities and counters, before analysis
Data Browser

• Generic and powerful browsing

• Drill-down options
DiskPro

- Easy analysis of disk and file metrics
- Pre-built queries
- Drill-down from DP2 Busy, to volumes, to files, to processes which opened a file
- Side-by-side analysis
System Performance Analysis (SPA)

- Overall load balancing and system health review
- Drill-down to detailed process information
- Effects of CPU failure on memory and load on other CPUs
Pathway View

- All Pathway environments, or per Pathway environment
- Per day, or per interval
NonStop Cluster Essentials

Use cases

- Customers using multiple NonStop systems
- Customers using active/active NonStop environment
- Customers deploying applications spanning NonStop and Linux platforms
- Customers using Virtual Tape Server (VTS)
- Customers using multiple types of HP BladeSystems
- Customers using mixed NonStop S-Series, NS-Series, and Blade systems
Business Technology Optimization (BTO)
Optimize the business outcome of IT

Bridges the gap between IT and the Lines of Business to deliver positive business outcomes

Bridges the gaps between functional IT silos to deliver positive business outcomes