HP NonStop Open System Management (OSM) – Configuration and Best Practices

Vinay Gupta
NonStop Manageability Architect, HP
Agenda

- OSM overview
- OSM requirements
- OSM architecture
- OSM configuration
- OSM performance
- OSM scalability
- OSM migration
- Maintenance LAN and remote service
- OSM and ISEE
- OSM and HP SIM
- OSM features to maximize IT efficiency
- Other best practices
- OSM documentation
- OSM latest news
- OSM future plans
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  - OSM requirements
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  - Maintenance LAN and remote service
  - OSM and ISEE
  - OSM and HP SIM
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  - OSM latest news
  - OSM future plans
What is OSM?

- Real-time system health monitoring application for both Integrity 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
- Way to report customer problems to HP support center
- HP’s window into customer 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)
# OSM components

<table>
<thead>
<tr>
<th>Component</th>
<th>Delivery platform</th>
<th>Functionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSM Service Connection (T0682)</td>
<td>HP Integrity NonStop</td>
<td>Up-system health monitoring and troubleshooting</td>
</tr>
<tr>
<td>OSM Event Viewer (T0682)</td>
<td>HP Integrity NonStop</td>
<td>EMS event viewing</td>
</tr>
<tr>
<td>OSM Low-Level Link (T0633)</td>
<td>NonStop System Console</td>
<td>System load and down-system troubleshooting</td>
</tr>
<tr>
<td>OSM Notification Director (T0632)</td>
<td>NonStop System Console</td>
<td>Problem notification and remote access</td>
</tr>
<tr>
<td>OSM Console Tools (T0634)</td>
<td>NonStop System Console</td>
<td>Migration and other tools</td>
</tr>
<tr>
<td>NSC Software Master Installer (T0354)</td>
<td>NonStop System Console</td>
<td>Master installer for all NSC (console) software</td>
</tr>
</tbody>
</table>
OSM Service Connection features

- Web-based
- Based on DMTF WBEM and CIM
- Color-coded, accurate, and timely display of system health
- Views to display physical arrangement, ServerNet connections, and inventory
- Right click access to attributes, alarms, actions
- Fault diagnosis up to FRU level
- Recommended detailed repair actions

- Firmware update capability
- Simultaneous action on multiple resources
- Interactive actions and guided procedures to perform complex service tasks
- Alarm and state propagation suppression capability
- Summary of problems at a glance
- System status spin-off to ease multiple system management
- SSL support
- Integrated with HP SIM
OSM Event Viewer features

• Web-based
• Ability to view events across all systems in Expand network
• Real-time and time-based event viewing
• Many event display options
• Template and filter file selection across systems in Expand network
• Forward/backward scan
• Capability to save events and retrieve them later
• Full support of Operator Messages Manual
• SSL support
• Integrated with HP SIM
OSM Low-Level Link features

- Down-system support
- Right click access to attributes and actions
- Real-time processor status
- Maintenance LAN network and user configuration
- Logon using IP address or host name
- Start up of the system or an individual processor
- Preparation of modular enclosures to be integrated with the system
OSM Notification Director features

- Display and control of problem and periodic incident reports
- Dial-out and dial-in configuration
- SSL support
- Integrated with HP ISEE
## Why use OSM?

<table>
<thead>
<tr>
<th>Available</th>
<th>Scalable</th>
<th>Secure</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSM server a NonStop fault-tolerant process pair</td>
<td>Extremely scalable object cache in client and server</td>
<td>Secure Sockets Layer encryption support in OSM Service Connection, Event Viewer, and Notification Director</td>
</tr>
<tr>
<td>OSM Notification Director a Windows service</td>
<td>Able to manage modular resources and clustered systems</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fast to install</th>
<th>Integrated</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSM Service Connection and OSM Event Viewer run on system console but delivered on NonStop platform</td>
<td>OSM Service Connection and Event Viewer work with SIM</td>
<td>Required for Integrity NonStop NS-Series commercial and Telco servers</td>
</tr>
<tr>
<td></td>
<td>OSM Notification Director works with ISEE</td>
<td>Required for all new hardware</td>
</tr>
</tbody>
</table>

Secure: Secure Sockets Layer encryption support in OSM Service Connection, Event Viewer, and Notification Director.
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NonStop System Console (NSC) minimum requirements for OSM

- Windows XP or Windows 2003 server
  - OSM Service Connection qualified for Vista
- At least 512 MB of memory
  - 1 GB recommended
- Internet Explorer 6.0

HP offers Windows XP upgrade kit and separate memory upgrades for customers running Windows 2000-based NSC

Requires minimum of 500 MHz CPU
NonStop System Console Package
S7X-NSC7 or S7X-NSC7NM

DC7700 running
Windows XP Professional SP2

Hardware includes:
• 3 GHZ Pentium w/1GB of RAM
• Several USB Ports
• 80 GB Hard drive
• Dual NIC cards
• Keyboard, mouse
• Internal DVD-RW+/-
• Optional flat screen monitor

S7X-SWV2
HP NonStop System Console SW

DVD Software Installed:
• Open System Management (OSM)
• comForte MR-Win6530
• Adobe Acrobat
• Microsoft NetMeeting/Remote Desktop

No Longer included:
• CrystalPoint OutsideView 7.3
• TSM

HP Systems Insight Manager 5.1
HP Instant Support Enterprise Edition 3.0
NonStop System Console Package
NSCR3

Rackmounted DL320G
Running Windows Server 2003

Hardware includes:
• 3 GHZ Pentium w/1GB of RAM
• Three USB Ports
• Two Ethernet interfaces
• 80 GB Hard drive
• Dual NIC cards
• Keyboard, mouse
• Internal DVD-RW+/-

Rack-mounted Monitor w/keyboard mouse ordered separately – S7x-RACKMN2

HNSC-SWV2
HP NonStop System Console SW

DVD Software Installed:
• Open System Management (OSM)
• comForte MR-Win6530
• Adobe Acrobat
• Microsoft NetMeeting/Remote Desktop

No Longer included:
• CrystalPoint OutsideView 7.3
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## OSM-related generic processes

<table>
<thead>
<tr>
<th>Symbolic name</th>
<th>Process</th>
<th>Associated file</th>
</tr>
</thead>
<tbody>
<tr>
<td>$ZZKRN.#OSM-CIMOM</td>
<td>$ZCMOM</td>
<td>$SYSTEM.SYSnn.CIMOM</td>
</tr>
<tr>
<td>$ZZKRN.#OSM-APPSRVR</td>
<td>$ZOSM</td>
<td>$SYSTEM.SYSnn.APPSRVR</td>
</tr>
<tr>
<td>$ZZKRN.#OSM-OEV</td>
<td>$ZOEV</td>
<td>$SYSTEM.SYSnn.EVTMGR</td>
</tr>
<tr>
<td>$ZZKRN.#OSM-SNMPTMUX</td>
<td>$ZTMUX</td>
<td>$SYSTEM.SYSnn.SNMPTMUX</td>
</tr>
<tr>
<td>$ZZKRN.#OSM-CONFLH-RD</td>
<td>$ZOLHD</td>
<td>$SYSTEM.ZSOMLH.INITRD</td>
</tr>
<tr>
<td>$ZZKRN.#SP-EVENT</td>
<td>$ZSPE</td>
<td>$SYSTEM.SYSnn.ZSPE</td>
</tr>
<tr>
<td>$ZZKRN.#ZLOG</td>
<td>$ZCLOG</td>
<td>$SYSTEM.SYSnn.EMSACOLL</td>
</tr>
<tr>
<td>$ZZKRN.#ZTCP0</td>
<td>$ZTCP0</td>
<td>$SYSTEM.ZSOM.CTCP0</td>
</tr>
<tr>
<td>$ZZKRN.#ZTCP1</td>
<td>$ZTCP1</td>
<td>$SYSTEM.ZSOM.CTCP1</td>
</tr>
<tr>
<td>$ZZKRN.#SSH-ZPTY</td>
<td>$ZPTY</td>
<td>$SYSTEM.ZSSH.STN</td>
</tr>
<tr>
<td>$ZZKRN.#SSH-ZTCP0</td>
<td>$ZSSP0</td>
<td>$SYSTEM.ZSSH.SSH2</td>
</tr>
<tr>
<td>$ZZKRN.#SSH-ZTCP1</td>
<td>$ZSSP1</td>
<td>$SYSTEM.ZSSH.SSH2</td>
</tr>
</tbody>
</table>
## Ports used by OSM

<table>
<thead>
<tr>
<th>Port</th>
<th>User</th>
</tr>
</thead>
<tbody>
<tr>
<td>9990</td>
<td>OSM web server ($ZOSM)</td>
</tr>
<tr>
<td>9991</td>
<td>OSM Event Viewer server ($ZOEV)</td>
</tr>
<tr>
<td>5988</td>
<td>OSM CIMOM ($ZCMOM) in non-SSL mode</td>
</tr>
<tr>
<td>5989</td>
<td>OSM CIMOM ($ZCMOM) in SSL mode</td>
</tr>
<tr>
<td>162</td>
<td>SNMPTMUX ($ZTMUX)</td>
</tr>
<tr>
<td>22</td>
<td>SSH servers ($ZSSP0, $ZSSP1)</td>
</tr>
</tbody>
</table>

Recommendation: If the firewall is enabled, ensure the exceptions are correctly configured.
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OSM optional configuration

OSM optimized to provide most functionality and performance

- Optional configuration can be specified in $SYSTEM.ZSERVICE.OSMCONF
- Copy $SYSTEM.ZSERVICE.OSMINI to $SYSTEM.ZSERVICE.OSMCONF and update this copy
- **DO NOT UPDATE $SYSTEM.ZSERVICE.OSMINI**
  - Will be overwritten when new OSM SPR is installed
- Many updates can take effect by issuing “Reload Configuration Settings” from OSM Service Connection Tools menu
  - To be sure that new settings take effect, restart $ZZKRN.#OSM-CIMOM, $ZZKRN.#OSM-APPSRVR, and $ZZKRN.#OSM-OEV processes via SCF
Configuration of OSM over non-dedicated maintenance LAN

Usage
- By default, OSM Service Connection and OSM Event Viewer communicate with OSM server using TCP/IP stacks - $ZTCP0 and $ZTCP1.
- This restricts OSM to be used in dedicated maintenance LAN only.
- Configure OSM server over other TCP/IP stacks in order to:
  - Increase performance,
  - Run OSM Service Connection and OSM Event Viewer from outside maintenance LAN,
  - Use HP SIM to manage NonStop system.

OSMCONF Settings

stack = <TCPIP Process Name>
stack = <TCPIP Process Name>
evtstack = <TCPIP Process Name>
evtstack = <TCPIP Process Name>

Consideration
These settings do not affect communicating with OSM Notification Director on the NSC.
Periodic power scrub configuration

Usage

• By default, OSM runs periodic power scrub on S-Series enclosures between 2 AM and 3 AM.
• Configure OSM to run the periodic power scrub at any other hour, if some other time is the most quiet time for your environment.

OSMCONF Setting

HourToStartScrubTesting = <Hour>

Consideration

The periodic power scrub will start sometime during the hour of <Hour> and <Hour> + 1.
Automatic diagnostic data collection configuration

Usage

• By default, OSM collects diagnostic data in $SYSTEM, with every problem IR, and persists it for 28 days.
• Configure OSM to:
  – Change the diagnostic data collection volume, if some other volume is desirable
  – Change the time period to persist diagnostic data, if disk storage is a problem
  – Disable the diagnostic data collection altogether, if it affects the performance

OSM Service Connection Actions on System Object

Set Data Collection Volume
Set Days to persist for Diagnostic Data
Enable/Disable Automation of Data Collection

Consideration

Disabling diagnostic data collection affects HP Support’s ability to diagnose the problem.
Periodic inventory file creation configuration

**Usage**

- By default, OSM creates inventory files with every periodic incident report (IR).
- Configure OSM to disable the creation of inventory files with every periodic IR, if needed for performance reasons.

**OSMCONF Setting**

Inventory_State = Off

**Consideration**

The performance impact of inventory file creation is minimal.
ServerNet Cluster problem IR configuration

Usage

• By default, OSM detects the same ServerNet Cluster switch problem from all nodes connected to that switch. Although it tries to create problem IRs only from one of the nodes, it is possible that multiple nodes create IRs and dial-outs for timing reasons.

• Configure OSM to not create problem IRs and dial-outs for ServerNet cluster switch problems, detected from particular nodes.

OSMCONF Setting

SuppressServerNetClusterAlarm = On

Consideration

Ensure that at least two nodes connected to every ServerNet Cluster switch are allowed to dial-out.
Security configuration

Usage

• By default, SSL is not enabled for the communication between OSM server and OSM Service Connection and Notification Director, and between OSM Event Viewer server and client.

• Configure SSL communication in order to:
  – Ensure secure, encrypted communication between OSM server and OSM Service Connection and Notification Director, and between OSM Event Viewer and client,
  – Use HP SIM to manage NonStop system.

OSMCONF Setting

UseSSL = On

Consideration

There is minor performance impact of enabling SSL.
Security configuration

### Usage
- By default, when SSL is enabled, OSM uses HP-supplied certificate.
- Configure OSM to use your own signed certificate and key password to enhance security.

<table>
<thead>
<tr>
<th>$SYSTEM.ZSERVICE Files to Overwrite</th>
</tr>
</thead>
<tbody>
<tr>
<td>CACERT</td>
</tr>
<tr>
<td>SERVCERT</td>
</tr>
<tr>
<td>SERVKEY</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OSMCONF Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>SERVKEYPASS = &lt;key password&gt;</td>
</tr>
</tbody>
</table>

### Consideration
Secure $SYSTEM.ZSERVICE.OSMCONF to be able to be read by super.super only to secure key password.
Security configuration

**Usage**

- By default, OSM Service Connection and OSM Event Viewer client work seamlessly when SSL is enabled on the server.
- Configure OSM Notification Director to use SSL communication with OSM server by selecting the option “Use SSL” while adding a system.

**Consideration**

This option has to be selected for OSM Notification Director to communicate with OSM server when SSL is enabled.
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• OSM future plans
OSM performance update

- Improvements added in each release since G06.25
  - Faster status and alarm updates
  - Fixed problems where the OSM Service Connection hangs
  - Made guided replacement procedures more robust and faster

- CPU utilization now within 25% of TSM usage with the old heap manager
- Performance now on par or better than TSM with the new heap manager
In-built dropping of OSM priority

• OSM server processes drop to lower priority when they have to perform a processor-intensive activity triggered by:
  – A processor halt,
  – A processor reload,
  – More than 20 EMS or SP events queued up,
  – OSM backup process start,
  – IAPRVD process start,
  – Initial incident analysis.

• Priority drops to half of current priority or 75, whichever is larger.

• Priority reverts back when event queue has less than 20 items.
Performance recommendation # 1

• Configure important application processes at higher priority than OSM processes (higher than 150)

<table>
<thead>
<tr>
<th>Batch</th>
<th>OSM</th>
<th>App</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>100</td>
<td>150</td>
</tr>
<tr>
<td>200</td>
<td>255</td>
<td></td>
</tr>
</tbody>
</table>

Optimal configuration
Performance recommendation # 2

- Control default priority of OSM processes
  
  SCF ABORT PROCESS $ZZKRN.#OSM-CIMOM
  SCF ALTER PROCESS $ZZKRN.#OSM-CIMOM, PRIORITY <max-priority>
  SCF START PROCESS $ZZKRN.#OSM-CIMOM

- Use this option if application processes run at priority < 150

<table>
<thead>
<tr>
<th>Optimal configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
</tr>
<tr>
<td>Batch</td>
</tr>
</tbody>
</table>

Batch OSM App
Performance recommendation # 3

• Control priority of OSM processes when it drops its priority to go below 75

<table>
<thead>
<tr>
<th>OSMCONF Setting</th>
<th>Lowest_OSM_Priority = &lt;priority&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Priority drop before change</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>75</td>
</tr>
<tr>
<td>Batch</td>
<td>OSM</td>
</tr>
</tbody>
</table>

| Priority drop after change |                      |
| 0 | 100 | 200 | 255 |
| Batch | OSM | App |     |     |
Considerations of running OSM at lower priority

- Running OSM at lower priority does not stop status updates on OSM Service Connection.
- Status updates may be delayed.
Performance recommendation # 4

- Migrate to new heap manager (NSK CRE/RTL - T1269) from old heap manager (Native CRE/RTL - T8431)
  - More efficient heap management in T1269
  - OSM performance better when using T1269
  - Application programs also benefit from more efficient heap management
  - Refer to S02001A for migration considerations
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OSM scalability recommendations

• Memory requirement for each OSM Service Connection session ~ 250 MB

➢ Do not run more than 4 simultaneous OSM Service Connection sessions on current NonStop System Console.

➢ Do not monitor more than 16 NonStop systems with a single OSM Notification Director
  – If more than 16 systems configured, a message box is displayed with the warning
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OSM migration recommendation

• TSM reaching End of Support Life in January, 2008
• TSM products no longer distributed on NonStop System Console G-Series DVD after May, 2007
  – TSM products downloadable from SPR Scout until January, 2008

➢ Strong recommendation: Migrate to OSM
OSM and TSM co-existence

- Both TSM and OSM can co-exist on a system.
  - OSM automatically disables the following functionality of TSM:
    - Periodic power scrubbing,
    - Processor incident analysis,
    - Automatic line hander configuration process.

- Use either OSM or TSM Notification Director, not both, to avoid duplicate dial-outs.
- Use the OSM Service Connection for all systems that are part of a ServerNet cluster.
  - OSM avoids generation of alarms and dial-outs on all nodes in the cluster, when service actions are performed on a cluster object from any node. OSM also prevents against multiple service actions on the same ServerNet Cluster switch.
- If you have written tools to look for TSM events, change them should to look for equivalent OSM events.
- Do not perform firmware updates from both TSM and OSM at the same time.
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Maintenance LAN configuration recommendations

• Use ProCurve 2524 or 2848 switches
• Use two switches for fault-tolerance
• Ensure that auto-negotiation is set to On
• Configure switches to send SNMP traps to OSM
• Configure OSM to monitor switches
## OSM remote service options

<table>
<thead>
<tr>
<th>Option</th>
<th>Support Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon Copy</td>
<td>Not supported</td>
</tr>
<tr>
<td>NetMeeting</td>
<td>Supported</td>
</tr>
<tr>
<td>Remote Desktop</td>
<td>Supported</td>
</tr>
</tbody>
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HP Instant Support Enterprise Edition (ISEE)

- 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
NonStop integration with ISEE

- Both notification to HP support center and remote access from HP support center available as alternatives to modem-based dial-out and dial-in.
- OSM Notification Director integrated with ISEE
  - Uses ISEE to transmit Incident Reports (IRs) if enabled by customer and ISEE client is installed on NonStop System Console.

Currently supported version: ISEE v3
ISEE hardware requirements

• 2 Network Interface Cards (NICs) on NonStop System Console
  - One for dedicated maintenance LAN
  - One for ISEE internet connectivity via customer’s secure operations LAN

• All newly purchased consoles include two NICs

• For consoles without a built-in second NIC, a USB Ethernet adapter available to provide ISEE connectivity

Recommendation: Be aware of your network's proxy configuration when configuring Internet Explorer in conjunction with ISEE and the second NIC.
ISEE notification architecture

Primary NonStop System Console

NonStop

OSM server

NonStop

OSM server

Primary NonStop System Console

NonStop

OSM server

Backup NonStop System Console

NonStop

OSM server

Notification Director

ISEE client

Notification Director

ISEE client

ISEE server

Service Provider Gateway (SPG)

Genesis (Workflow management)

Internet

Customer internet firewall

HP internet firewall

WBEM

WBEM
Customer controls what protocols/tools HP support may utilize in customer environment at internal firewall.
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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
HP SIM and Essentials
Breadth and Depth

Deploy – Control – Inventory – Monitor – Patch – Optimize

Enterprise management integration
• HP Operations Center • Tivoli • CA • MOM

HP Systems Insight Manager

Core Services
- Automatic Discovery
- Inventory Management
- Event Notification
- Central Repository
- GUI and CLI
- Role-Based Security
- Distributed Tasks
- Tool Definitions
- Reporting
- Partner Integration
- Basic Storage Capacity
- Web Services

Specialist Plug-ins
- Remote Management
- Performance Management
- Workload Management
- Topology Maps
- Capacity
- Performance
- Remote Support
- Client Manager
- Web JetAdmin

ProLiant Essentials
Virtual Machine Management
- Server Configuration and Health
- Centralized Reporting
- Provisioning
- File System Views

Integrity Essentials
- Cluster Management
- Chargeback
- Customize Reports
- Sybase Views

Storage Essentials
- Partition Management
- 3rd Party/HP Developed
- Oracle Views
- Exchange Views
- SQL Views

Maps
Reporting
• Topology

Centralized

Deploy – Control – Inventory – Monitor – Patch – Optimize

HP SIM and Essentials
Breadth and Depth
HP SIM CMS (Central Management Server) hardware requirements

<table>
<thead>
<tr>
<th>Processor speed</th>
<th>Minimum</th>
<th>Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5-GHz</td>
<td>2.4-GHz</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Memory</th>
<th>Minimum</th>
<th>Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 GB</td>
<td>1.5 GB</td>
<td></td>
</tr>
</tbody>
</table>

- Currently available NonStop System Consoles have 1GB memory
- Do not use NonStop System Console as HP SIM CMS
NonStop integration with HP SIM

- 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
- Links to OSM Service Connection and OSM Event Viewer
- HP SIM shipped free-of-charge with NonStop System Console CD suite

• HP SIM 5.0 and later
• G06.27 and later
• H06.04 and later

OSM now integrated with HP SIM 5.1
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• OSM and HP SIM
• **OSM features to maximize IT efficiency**
• Other best practices
• OSM documentation
• OSM latest news
• OSM future plans
OSM features to maximize IT efficiency

- Multi-resource actions
- Integrated guided and documented procedures
- State propagation suppression
- Alarm deletion and suppression
- Dial-out suppression
- Rediscover functionality
- Physical configuration tool
- Interactive actions
- Alarm and problem summaries
- Snapshot creation
- Bookmark creation
- Inventory retrieval
- Multiple system monitoring
Multi-resource action capability

- Select multiple resources of any type and perform any action on them simultaneously
- Save attributes of all resources or selected resources in Excel format
Integrated guided procedures

Guided service procedures integrated with OSM display
Integrated documented procedures

Documented service procedures integrated with OSM display
Interactive actions

Actions that interact with user in real-time
State propagation suppression

State propagation resulting from bad attribute value

- Temporary suppression
- Permanent suppression
Alarm deletion

Permanently delete the alarm and graphical representation
Alarm suppression

Suppression of state propagation resulting from alarm
Dial-out suppression

- Actions to suppress (for 40 minutes) and unsuppress problem incident reports and dial-outs during service actions
- Attribute to display the current state of problem incident report creation
- Action to extend the problem incident report suppression time
- Dial-outs automatically suppressed by guided procedures
Rediscover functionality

Rediscover at various levels to not force OSM restart in rare cases of OSM not updated dynamically.
Physical configuration tool

Create and save physical configuration (rack positions) of various components on Integrity NS-Series
Alarm summary

Summary of all alarms on the system

- Get details
- Delete
- Suppress
- Unsuppress
- Save in Excel format

<table>
<thead>
<tr>
<th>Severity</th>
<th>Creation Time</th>
<th>Indication Identifier</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critical</td>
<td>Aug 31, 2007 12:30:59 PM PDT</td>
<td>Switch Port (1010.1.2.2)</td>
<td>Neighbor Switch Ports Not Connected</td>
</tr>
<tr>
<td>Critical</td>
<td>Aug 31, 2007 12:31:53 PM PDT</td>
<td>Switch Node Port (1011.1.7.2)</td>
<td>Invalid Transceiver Type</td>
</tr>
<tr>
<td>Critical</td>
<td>Aug 31, 2007 12:31:03 PM PDT</td>
<td>Switch Node Port (1010.1.8.2)</td>
<td>Invalid Transceiver Type</td>
</tr>
<tr>
<td>Critical</td>
<td>Aug 31, 2007 12:31:38 PM PDT</td>
<td>Switch Module $ZZSMN.Y!1 (1011.1)</td>
<td>Backup AC Power Failure</td>
</tr>
<tr>
<td>Critical</td>
<td>Aug 31, 2007 12:31:15 PM PDT</td>
<td>Switch Port (1020.1.8.2)</td>
<td>Invalid Transceiver Type</td>
</tr>
<tr>
<td>Critical</td>
<td>Aug 31, 2007 12:31:13 PM PDT</td>
<td>Switch Node Port (1021.1.7.1)</td>
<td>Invalid Transceiver Type</td>
</tr>
<tr>
<td>Critical</td>
<td>Aug 31, 2007 12:31:13 PM PDT</td>
<td>Switch Port (1011.1.11.4)</td>
<td>Missing Transceiver</td>
</tr>
<tr>
<td>Critical</td>
<td>Aug 31, 2007 12:31:15 PM PDT</td>
<td>Switch Node Port (1020.1.7.1)</td>
<td>Invalid Transceiver Type</td>
</tr>
<tr>
<td>Critical</td>
<td>Aug 31, 2007 12:31:13 PM PDT</td>
<td>Switch Port (1021.1.8.2)</td>
<td>Invalid Transceiver Type</td>
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<tr>
<td>Critical</td>
<td>Aug 31, 2007 12:31:14 PM PDT</td>
<td>Switch Node Port (1021.1.7.1)</td>
<td>Invalid Transceiver Type</td>
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<tr>
<td>Critical</td>
<td>Aug 31, 2007 12:31:07 PM PDT</td>
<td>Switch Port (1011.1.11.1)</td>
<td>Missing Transceiver</td>
</tr>
</tbody>
</table>
Problem summary

- Display of all resources that have problems
- Display of any suppressed attributes or alarms
- Save in Excel format
Snapshot creation

Save the snapshot of the system in XML format on NSC
Snapshot viewing

View the snapshot later for analysis and diagnosis.
Create bookmark functionality
Create bookmarks to easily navigate to a system
OSM Inventory View

Retrieval of hardware inventory for a single NonStop system in Excel format

```
<table>
<thead>
<tr>
<th>Name</th>
<th>Serial Number</th>
<th>Type</th>
<th>Power State</th>
<th>Hardware</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATM3SA $ZZATM,$AM1 (12.1.55)</td>
<td></td>
<td>Physical</td>
<td>On</td>
<td>B04</td>
</tr>
<tr>
<td>Battery (11.1.23)</td>
<td></td>
<td>Physical</td>
<td>On</td>
<td></td>
</tr>
<tr>
<td>Battery (11.1.28)</td>
<td></td>
<td>Physical</td>
<td>On</td>
<td></td>
</tr>
<tr>
<td>Battery (12.1.23)</td>
<td></td>
<td>Physical</td>
<td>On</td>
<td></td>
</tr>
<tr>
<td>Battery (12.1.28)</td>
<td></td>
<td>Physical</td>
<td>On</td>
<td></td>
</tr>
<tr>
<td>Blade Element (400.1)</td>
<td></td>
<td>Physical</td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>Blade Element (400.2)</td>
<td></td>
<td>Physical</td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>Blade Element (400.3)</td>
<td></td>
<td>Physical</td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>Blade Element (401.1)</td>
<td></td>
<td>Physical</td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>Blade Element Power Supply (400.1.3)</td>
<td>B3627F00EB04C</td>
<td>Physical</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blade Element Power Supply (400.1.4)</td>
<td>B3627F00DY04C</td>
<td>Physical</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blade Element Power Supply (400.2.3)</td>
<td>B3627M00EP04C</td>
<td>Physical</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blade Element Power Supply (400.2.4)</td>
<td>B3627M00F404C</td>
<td>Physical</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blade Element Power Supply (400.3.3)</td>
<td>B3627D00FT04C</td>
<td>Physical</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blade Element Power Supply (401.1.3)</td>
<td>B3627D00FX04C</td>
<td>Physical</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CLIP $ZZWAN.#SW2.1 [Physical]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
```
OSM Inventory Tool

Retrieval of hardware, firmware, or sensor inventory across multiple NonStop systems in Excel format
Multiple system monitoring

• System status to spin-off the aggregate system status in a little window
  – Can be used for multiple system monitoring at a glance
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Other best practices

• Always use the latest versions of the OSM components even when running older OS versions.
• Install only those JRE versions on the NSC, which are prompted by OSM Service Connection.
• Ensure pop-ups are not blocked in Internet Explorer.
• Make sure that if anti-virus software is installed on the NSC, it does not block the sending of Internet e-mail. This will prevent dial-outs from opening cases when using modems for dial-out.
• Use “Blink” actions, if available before replacing a FRU to avoid replacing incorrect FRU.
• Use filtering capabilities of OSM Event Viewer to see only the events of interest.
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OSM documentation resources

- **Online help**
  - Context-sensitive (F1) help for interface elements and all system and cluster resources, attributes and actions.
  - Help button in dialog boxes
  - Integrated guided procedure help

- **Manuals at** [http://docs.hp.com](http://docs.hp.com) (no new updates in NonStop Technical Library)
  - OSM Service Connection User’s Guide
  - OSM Migration and Configuration Guide
  - NonStop System Console Installer Guide
  - NonStop System Console Guide for Migrating to Microsoft Windows XP Professional

- **Softdocs**
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## Latest OSM SPRs

<table>
<thead>
<tr>
<th>Product</th>
<th>SPRs</th>
</tr>
</thead>
<tbody>
<tr>
<td>T0682 (OSM Service Connection Suite)</td>
<td>T0682H02^AAY</td>
</tr>
<tr>
<td></td>
<td>T0682H02^AAZ</td>
</tr>
<tr>
<td></td>
<td><strong>T0682H02^ABC</strong></td>
</tr>
<tr>
<td></td>
<td><strong>T0682G07^ABA</strong></td>
</tr>
<tr>
<td>T0633 (OSM Modular Low-Level Link)</td>
<td>T0633G06^AAR</td>
</tr>
<tr>
<td></td>
<td>T0633G06^AAS</td>
</tr>
<tr>
<td></td>
<td>T0633G06^AAT</td>
</tr>
<tr>
<td></td>
<td>T0633G06^AAU</td>
</tr>
<tr>
<td></td>
<td><strong>T0633G06^AAV</strong></td>
</tr>
<tr>
<td>T0632 (OSM Notification Director)</td>
<td><strong>T0632G07^AAU</strong></td>
</tr>
<tr>
<td>T0634 (OSM Console Tools)</td>
<td>T0634G06^AAN</td>
</tr>
<tr>
<td></td>
<td><strong>T0634G06^AAO</strong></td>
</tr>
<tr>
<td>T0354 (HP NSC SW Master Installer)</td>
<td>T0354G06^AAQ</td>
</tr>
<tr>
<td></td>
<td>T0354G06^AAR</td>
</tr>
<tr>
<td></td>
<td><strong>T0354G06^AAS</strong></td>
</tr>
</tbody>
</table>
OSM Service Connection Suite H-Series latest features and fixes

- Support of Integrity NonStop NS3000AC server
- Support of HP ProCurve 2848 switch
- Support of Internet Explorer Version 7
- Inventory reporting for FRUs within processor blade elements of NS1000, NS5000T, and NS5000CG systems
- More robust monitoring of maintenance switch and UPS
- Support of aborting Validate Checksum and Clear Data actions on disk
- Full SSL support in OSM Event Viewer
- More control over duplicate dial-out avoidance time period
- Heap utilization fixes in MDEVPRVD
OSM Service Connection Suite G-Series new features and fixes

- Support of more configurations of IOAM enclosures
- Support of long passwords, including special characters
- More accurate ServerNet incident analysis
- More robust power scrub
- Halt fixes
- Abend fixes
OSM Modular Low-Level Link new features and fixes

- Support of Integrity NonStop NS3000AC server
- Configuration of VIO modules connected to IOMF2s
- Ability to save system disk configuration on NonStop System Console
- Use of MR-Win6530 terminal emulator for launching startup TACL (CLCI) and event stream (CNSL)
- Halt fixes
OSM Notification Director new features and fixes

- Enhancements to support correct transmission of unicode characters
- Fixes for abort during logon, system configuration, and alarm attachment file transfer
OSM Console Tools new features and fixes

- Tool to convert existing session files to MR-Win6530 session files on NonStop System Console
- Fixes in System Inventory Tool
# New terminal emulator

<table>
<thead>
<tr>
<th>News</th>
<th>OutsideView replaced with comForte MR-Win6530 as NonStop System Console terminal emulator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Systems affected</td>
<td>Both NS-Series and S-Series</td>
</tr>
<tr>
<td>Timeframe</td>
<td>May, 2007</td>
</tr>
<tr>
<td>First RVU with change</td>
<td>H06.10, G06.31</td>
</tr>
<tr>
<td>First OSM Low-Level Link with change</td>
<td>T0633G06^AAT</td>
</tr>
<tr>
<td>First console DVD with change</td>
<td>HNSC-SWV2 for H-series S7X-SWV2 for G-series</td>
</tr>
</tbody>
</table>
Customer impact

Customers wishing to upgrade to MR-Win6530
- Install latest NonStop System Console DVD
- Get all advantages of MR-Win6530 and OSM Low-Level Link seamless integration with it

Customers NOT wishing to upgrade to MR-Win6530
- Install latest NonStop System Console DVD but not install MR-Win6530
- Manually launch startup TACL (CLCI) and event stream (CNSL) using OutsideView
Migration tool

- Migration tool to convert existing TCP/IP 6530 terminal session files to MR-Win6530 session files on NonStop System Console
- Included in OSM Console Tools (T0634G06^AAN and later)
- Converts session files created with OutsideView Versions 7.2 and 7.3
- Does not support startup TACL and event stream sessions or VTnn terminal sessions for OSS

- Free of charge
- Easy to use
Support model

**Support of MR-Win6530**

- Through HP (normal channels)
- Through comForte ([http://www.comforte.com](http://www.comforte.com))

**Support of OutsideView**

- Until January, 2009: Through HP for OutsideView copies sold by HP on NonStop System Consoles
- After January, 2009: Contact Crystal Point directly
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OSM plans

• Continuous support for high-end, mid-range, and entry-level Integrity NonStop servers
• Support for all new hardware on Integrity NonStop
• OSM plug-ins for extended functionality
  – SMI-S (Storage Management Initiative - Specification) support for integrated storage management using HP SIM
  – Other value-add plug-ins
• OSM WBEM SDK for provider and client development
• Integration with WEBES (Web-Based Enterprise Services)/On-Site Analyzer for Integrity server fault diagnosis

All future plans are subject to change without notice
OSM extended family plans

- New NonStop System Console rack-mount and desk-side models with more memory running Windows Server
- Support of future HP SIM releases
- NonStop Essentials plug-ins to HP SIM for
  - Heterogeneous cluster management
  - ServerNet Cluster management
  - Networking and storage management
- Service Essentials Remote Support Pack (next-generation ISEE) for NonStop
- Storage Essentials support for NonStop

All future plans are subject to change without notice