



Hewlett Packard
Enterprise

NonStop Technical Boot Camp 2023

TBC23-TB66 Discover the Latest Advancements in the HPE NonStop Manageability Portfolio

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Forward-looking statements

This is a rolling (up to three year) Roadmap and is subject to change without notice

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Agenda

Introduction to NonStop Manageability

Standalone OSM Event Viewer

System Disk Snapshot and Restore

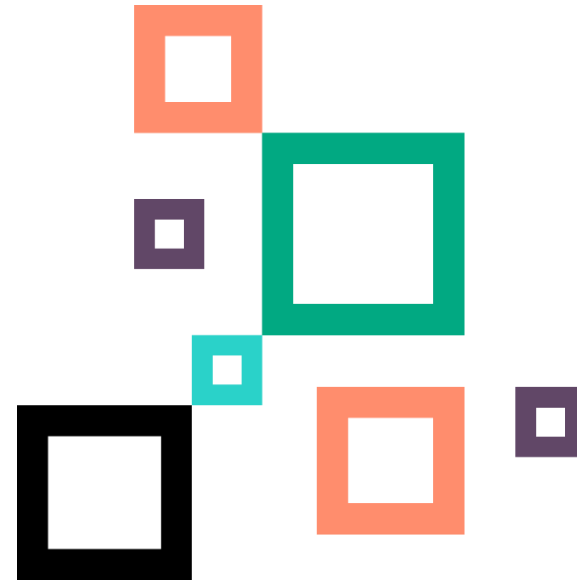


Introduction to NonStop Manageability



NonStop manageability strategy

- Modernize & make it easy to manage NonStop systems
- Minimize training
- Centralize & integrate into Enterprise Management frameworks
- Support new platform and capabilities
- Provide business and system analytic metrics
- Provide customers with choices that match the skills of their IT Staff
 - from deep NonStop knowledge, to solutions that require a very little NonStop syntax knowledge



Manageability product portfolio

Serviceability

- HPE Insight RS
- HPE iLO
- NonStop System Console
- OSM Suite of Tools

New

Enhanced Management

- ATM/POS Trans. Analyzers
- **DataEdge for HPE NonStop**
- C-Deep for HPE NonStop
- SNMPv3 Agent for HPE NonStop
- MQGate for HPE NonStop
- Operations Agent for NonStop (OVNM)
- Sentinel for HPE NonStop
- Web ViewPoint Enterprise
 - Base24 and Connex plug-ins

Expert Management

- ASAP
- Capacity Manager
- Enform Optimizer
- EMS Analyzer
- Real-Time Proc. Monitor
- Seeview
- Viewsys

Performance Management

- Measure
- Local Analyst (LA)
- Performance Agent for NonStop (OVNPM)
- Performance Mgmt. Bundles
- Remote Analyst (RA)

NonStop System Console (NSC)

Converged NonStop systems

- Based on HPE ProLiant technology
- Available in both a rackmount and desktide configurations
- Runs Windows Server 2022 OS and a suite of NSC specific software
- Two NSCs are required per maintenance LAN
- A pair of NSCs can manage up to 8 converged NonStop systems on the same maintenance LAN

Virtualized NonStop systems

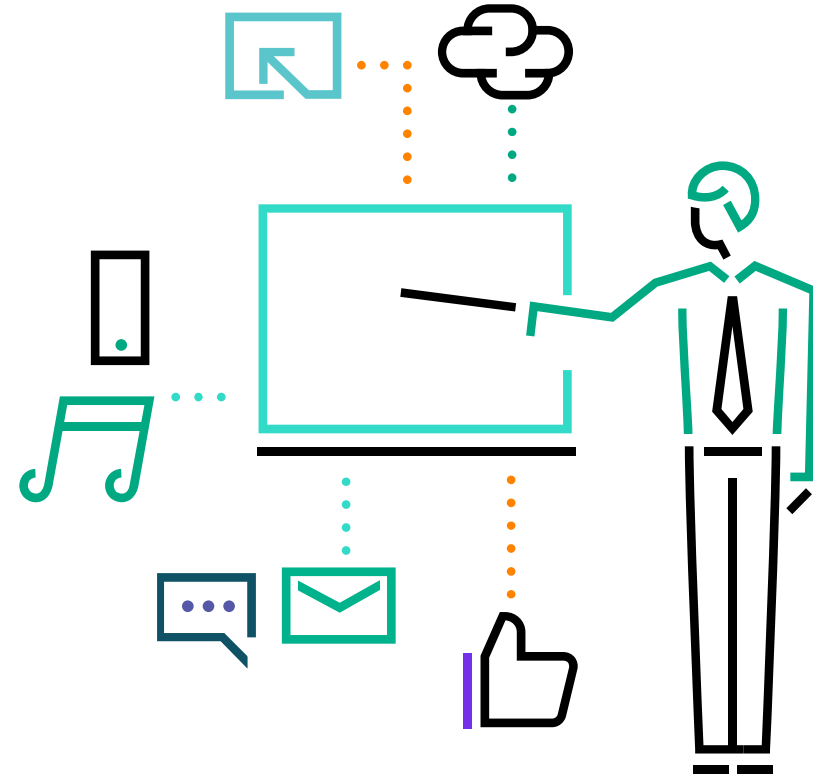
- Runs on Windows Server 2022
- One vNSC* is required per maintenance LAN
- A single vNSC can manage up to 8 Virtualized NonStop systems

**vNSC is a Virtualized NonStop System Console*



What can be installed on the NSC?

- Products that come with the NSC installer DVD
 - Latest version is **Update 41**
- Insight Remote Support (Insight RS)
- Security products (Anti-Virus, firewall, or other products IT departments require for security)
- Security patches



New features introduced

Serviceability

- **NSC**
 - Software Installer Update 41
 - Windows Server 2022
- **OSM**
 - Standalone Event Viewer
 - System disk snapshot and restore

Enhanced Management

- **OVNM 1.7.2**
 - New functions and queries added in the Legacy Display Agent
 - Restore of the correlation feature in Legacy Display Agent
- **Web ViewPoint Enterprise**
 - Enhanced Dashboard Visualizations - Support for multiple axes, pie chart, column charts, etc.
 - Ability to change how much data to query and retain on dashboard for all graph widgets
 - Ability to view live alert logs
 - Ability to define user access for Admin, Manager and Staff
 - Support for composite metric to define metrics using arithmetic expressions

Performance Management

- **Remote and Local Analyst**
 - Application analytic monitoring
 - Solution recommendations
 - Automated analytics generation
 - Click drilldowns for discoveries



Future plans

Serviceability

- **NSC**
 - Hardware refresh
 - Support for TLS1.3
- **OSM**
 - System Disk Snapshot & Recovery Wave 2.0
 - Support for OpenSSL 3.x

Enhanced Management

- **OVNM**
 - Replacement of Event Console Desktop Client with a web based application
 - NonStop Splunk adapter to forward EMS and OSS/Guardian logs
 - Java Monitoring Gateway for monitoring of NonStop OSS Java application
 - Composite thresholds based on 2 or more different subsystems like CPU, PROCESS and DISK

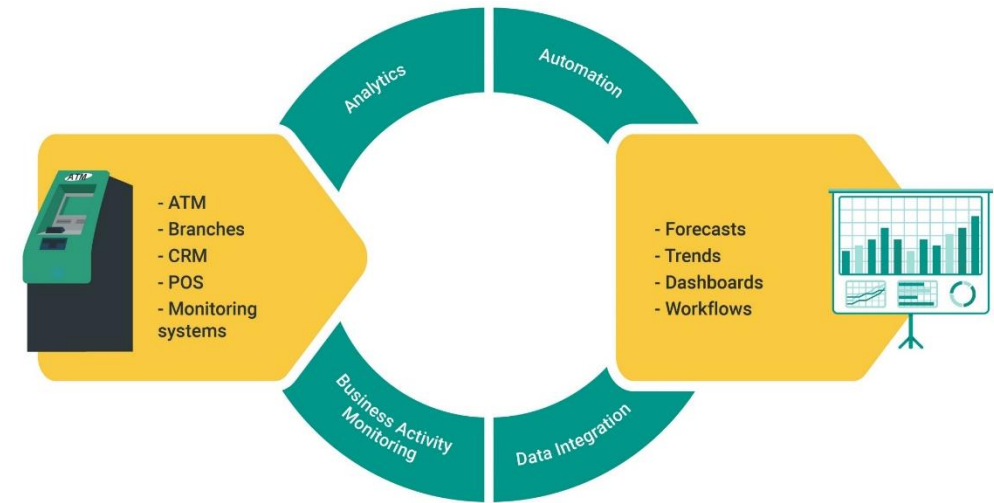
Performance Management

- **Local and Remote Analyst**
 - Smart scanners
 - Automated exception detections
 - Enhanced UI and user experience
 - Seamless product upgrades
- **OVNPM**
 - Dynamic Instance Discovery based on configuration in System Report - new instances to be discovered matching the criteria without manual intervention
 - Enhanced Correlation Features for automatic impact analysis



DataEdge for HPE NonStop

- Data Integration and Streaming Analytics platform
 - Ingest, clean, enrich a variety of data
 - Perform analytics
 - Provide operational business intelligence to make real time decisions
- Support for ingestion of disparate data streams with statistics calculations at high volumes, velocity and variety
- Modern service oriented architecture, highly available
- Responsive user interface with focus on mobility (different devices) and different UI form factors
- Support for ATM and POS financial transactions applications that run on the HPE NonStop (ACI BASE24 Classic/EPS, FIS Connex, etc.)
- Strategic replacement for ATM & POS Transaction Analyzer



Standalone OSM Event Viewer



Overview

- **Standalone Application**

- Java based desktop application
- Similar look and feel
- No more JavaScript/browser-based vulnerabilities
- Proven framework
 - OSM Suite of tools are based on Java Swing Framework
 - OSM SC client also a Java Swing app
- Single installation file for OSM Service Connection and Event Viewer clients

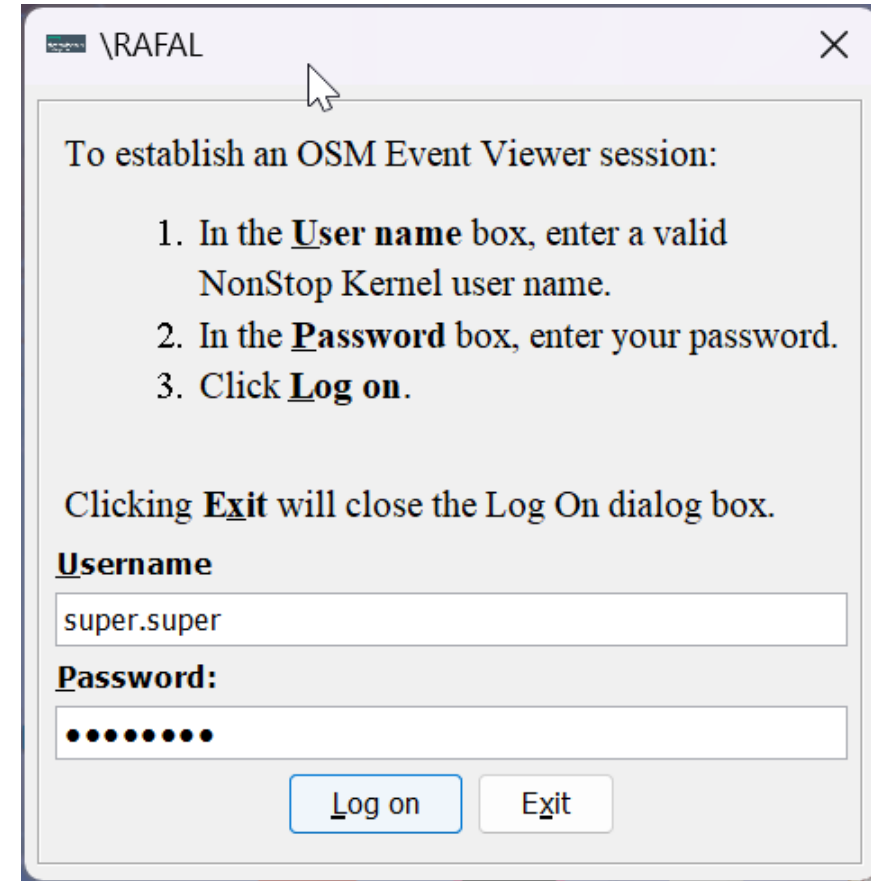
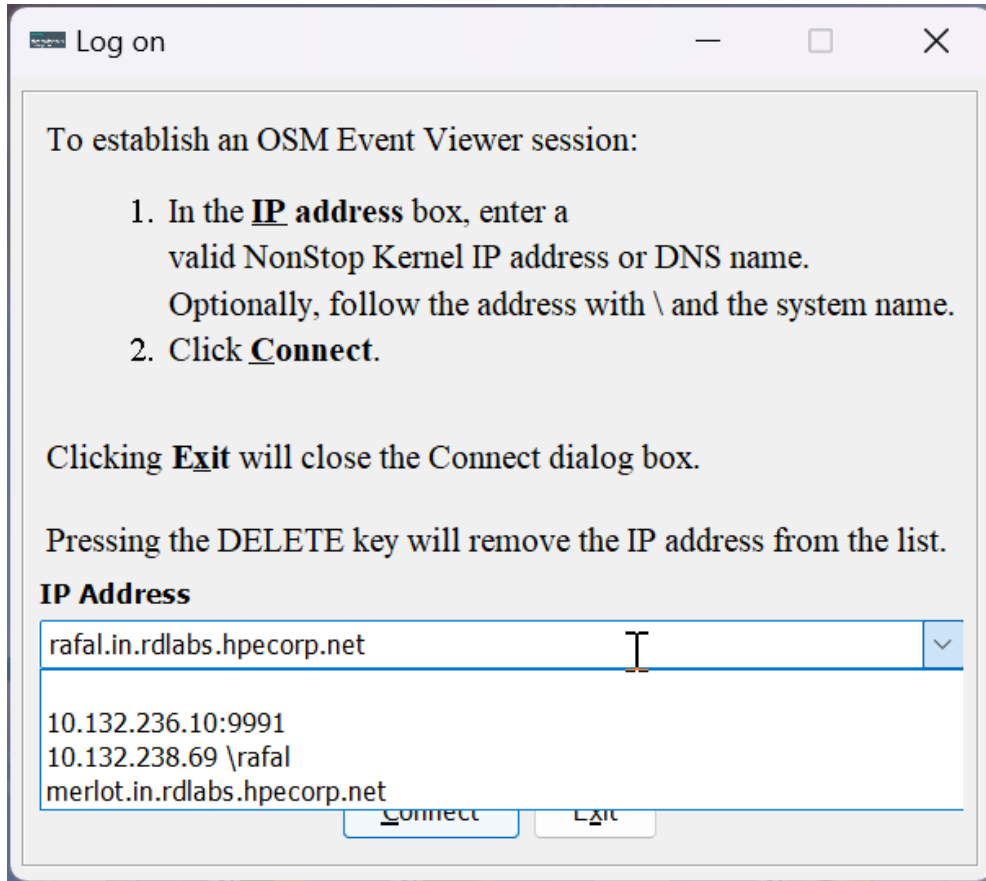
- **L Series only**

- T0682L02^BBN and later



Logon

- Can be invoked using either Desktop Shortcuts or Start menu



New Homepage

The screenshot displays the OSM Event Viewer application window. The title bar reads "OSM Event Viewer - \\\RAFAL". The application header includes the Hewlett Packard Enterprise logo and the text "OSM Event View...". The main menu contains "Show Events", "Save", "Tools", and "Help".

The configuration area is organized into several sections:

- Event Source(s):** A text input field containing "\$ZLOG" and a dropdown menu.
- View Options:** Radio buttons for "Standard" (selected), "Realtime", and "Probable Cause".
- Number of Events:** A text input field with "1000", a checkbox for "Suppress duplicates", and a checked checkbox for "Enable next/prev".
- Log Positioning:** Radio buttons for "By time", "At oldest log" (selected), and "At coldload".
- Time Frame:** "First:" and "Last:" text input fields.
- Filter File(s):** A text input field and a dropdown menu.
- Filter Criteria:** A table with columns "Option(s)" and "Owner". A tooltip above the table reads "Comma separated list: type or select from Filters drop-down". Below the table are radio buttons for "Pass" (selected) and "Fail".
- Search String:** A text input field and a checkbox for "Case sensitive".
- Navigation:** "Time sequence:" with radio buttons for "Descending" and "Ascending" (selected); "Timeout/seconds:" with a text input field containing "20"; and a checked checkbox for "Stop at EOF".
- Display Options:** "Linesize/chars:" with a text input field containing "512"; "Indentation/chars:" with a text input field containing "45"; "Format:" with a dropdown menu set to "STANDARD"; and a checkbox for "Autowrap".
- Realtime View:** A checkbox for "Persistence".
- Template File:** A text input field and a dropdown menu.

At the bottom of the window are two buttons: "Show Events" and "Reset".



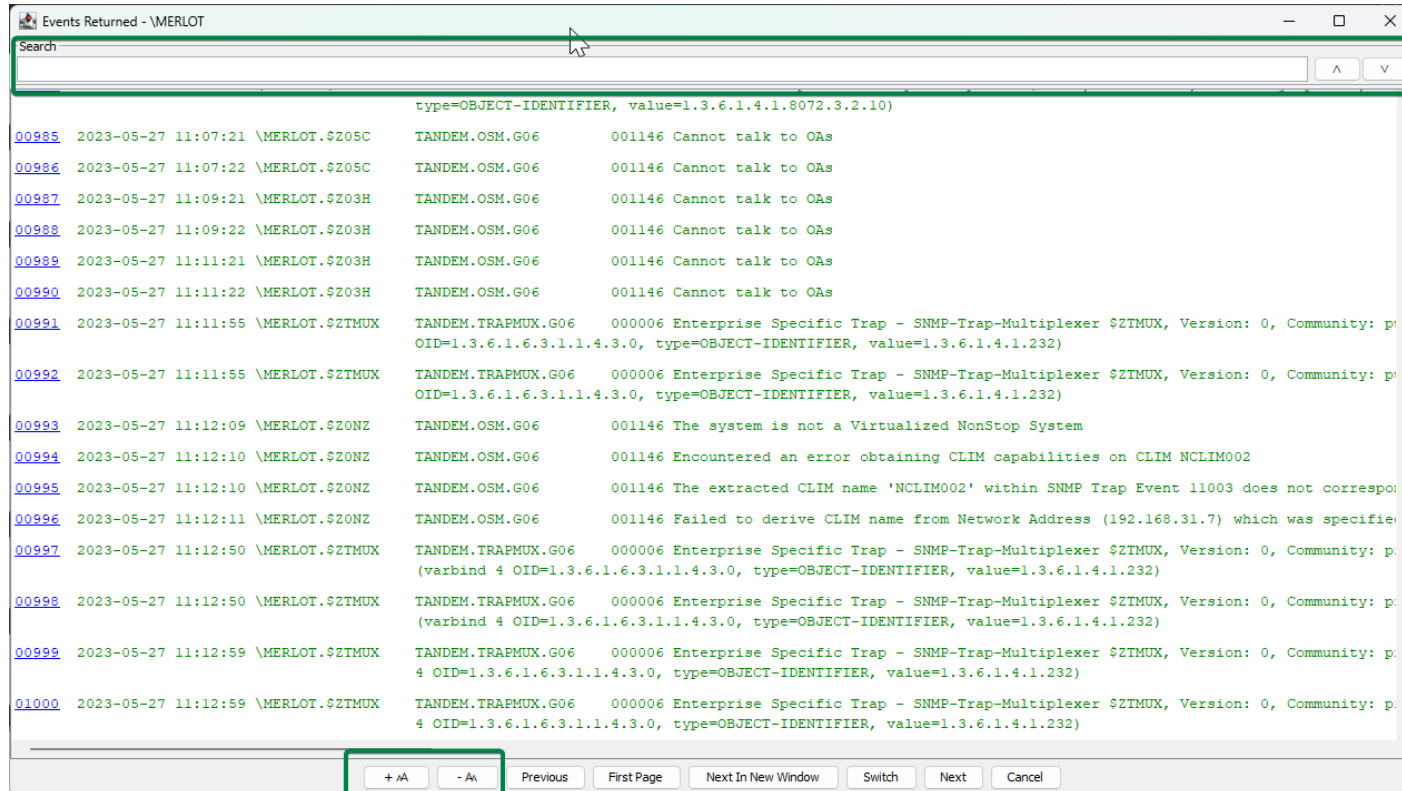
Web-based application Homepage

- Removed features highlighted in red boxes

The screenshot displays the OSM Event Viewer web application interface. At the top, a navigation bar includes 'Show Events', 'Save', 'Tools', 'Window', and 'Help'. The 'Window' menu item is highlighted with a red box. A context menu is open over the 'Window' menu, listing options: 'Save View as Html', 'Save View as EMS Log', 'Compress/Save Log(s)', and 'Save Log as Html Table'. The 'Save View as Html' and 'Save Log as Html Table' options are also highlighted with red boxes. A red arrow points from the 'Window' menu item to the context menu. Below the navigation bar, the main interface contains various configuration sections: 'Event Source(s): \$ZLOG', 'View Options: Standard, Realtime, Probab', 'Number of Events: 1000, Suppress duplicates, Enable nex', 'Log Positioning: By time, At oldest log, At coldload', 'Time Frame: First: Last:', 'Filter File(s): Filters', 'Filter Criteria: Option(s), Owner, Subsys name(s), Pass, Fail', 'Search String:', 'Navigation: Time sequence: Descending, Ascending, Timeout/seconds: 20, Stop at EOF', 'Display Options: Linesize/chars: 512, Indentation/chars: 45, Format: STANDARD, Autowrap', 'Realtime View: PopUp window, Persistence, Wrap: 5', and 'Template File: Templates'. At the bottom, there are 'Show Events' and 'RESET' buttons. A red box highlights the 'PopUp window' checkbox in the 'Realtime View' section.



Events Window



- A text box to search for a specific event
- Buttons to increase/decrease font size



Invoking Event Viewer from NSE client

- Windows OS shows a warning. User can check “Always allow...” checkbox and click Open.
- After entering the credentials, users will be taken to the list of events window bypassing the homepage.

The screenshot shows a web browser window displaying the HPE NonStop Software Essentials interface. A Windows security warning dialog box is overlaid on the page, stating: "This site is trying to open Microsoft® Windows Script Host. https://15.213.82.156:9988 wants to open this application." Below the message is a checkbox labeled "Always allow 15.213.82.156:9988 to open links of this type in the associated app" and two buttons: "Open" and "Cancel".

The background interface includes a navigation menu on the left with items like "Software in Archive", "All Software Packages", "Base SPRs", "Update SPRs", "SUTs", "Package Groups", "Ungrouped Packages", and "Configuration Revisions". The main content area shows "Configuration Products" with a table of request details:

Description	Parameter(s): CONFIGURATION_REVISION = \PIPER DEFAULT 0, SYSTEM_NAME = \PIPER
Submitted	Friday, June 16, 2023 10:05:00 PM IST
Activity ID	\PIPER212553693356605479
Owner	SUPER.SUPER

Below the table is a section titled "Click a system name to display the EMS messages for that system." with another table:

Activity	System	Status	Detail
View Report	\PIPER	Complete	View report

At the bottom right of the interface are "Restart" and "Cancel" buttons.



System Disk Snapshot and Restore



System Disk Snapshot and Restore

- Creates an online backup of \$SYSTEM disk on a virtual tape or disk drive through OSM guided procedures
 - Backup \$SYSTEM by stopping the mirror disk
 - Backup \$SYSTEM when both primary and mirror disks are in the started state
- Restores \$SYSTEM disk using the backed-up contents from a virtual tape or disk
 - Uses **System Disk Restore Tool** while the NonStop system is down to restore \$SYSTEM
- Supported on L-series systems



Supported NonStop system types and tapes

- NonStop systems
 - NS8 X4
 - NS4 X4
 - NS7 X2/X3
 - NS3 X2/X3
 - NS2 X2/X3
 - Virtualized NonStop
- Supported tapes
 - BackBox VTC/VTR and virtualized BackBox



Software versions

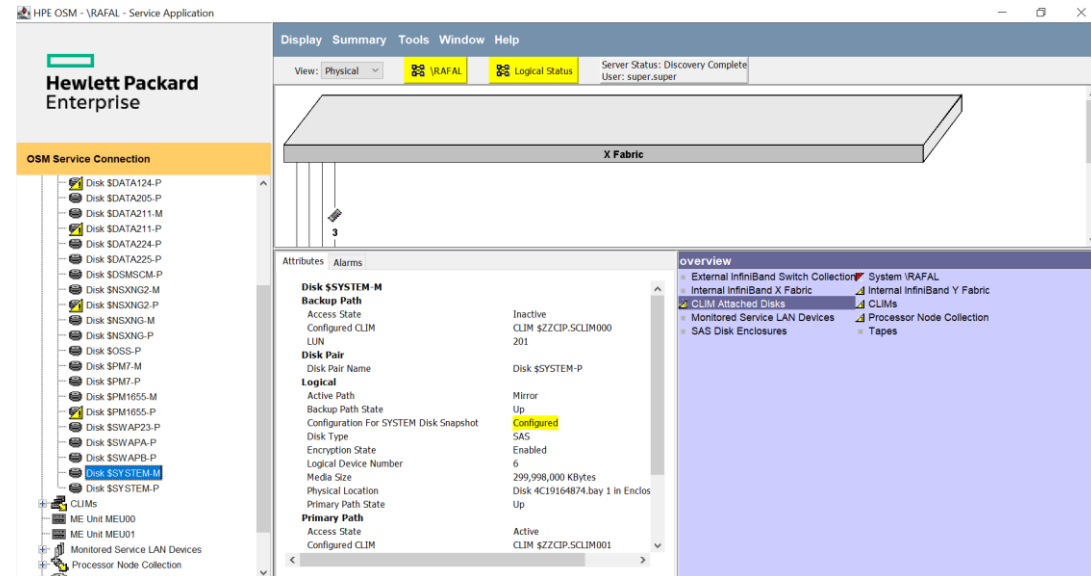
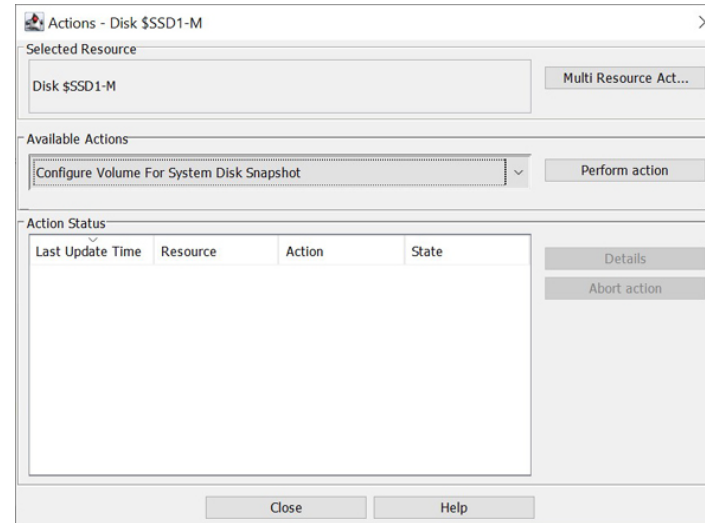
• RVU requirements

- Available as default from L23.08 onwards
- The minimum RVU is L21.06 with required SPRs
 - T0853L03^DCR CLIM Software DVD (CLIM DVD)
 - T0682L02^BBN OSM Service Connection (RVU)
 - T0634H06^ACY OSM Console Tools DVD (NonStop Console DVD)
 - T0954V04^AAV BackBox H4.11 (Required only if backup destination is Tape)
 - T0964V01^AAJ VTR R1.05 (Required only if backup destination is Tape)



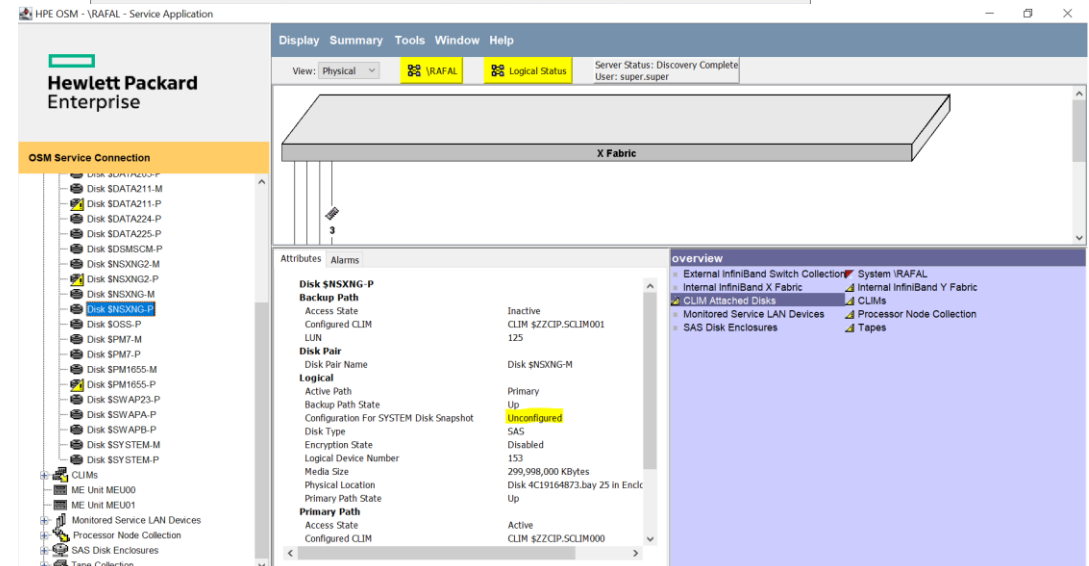
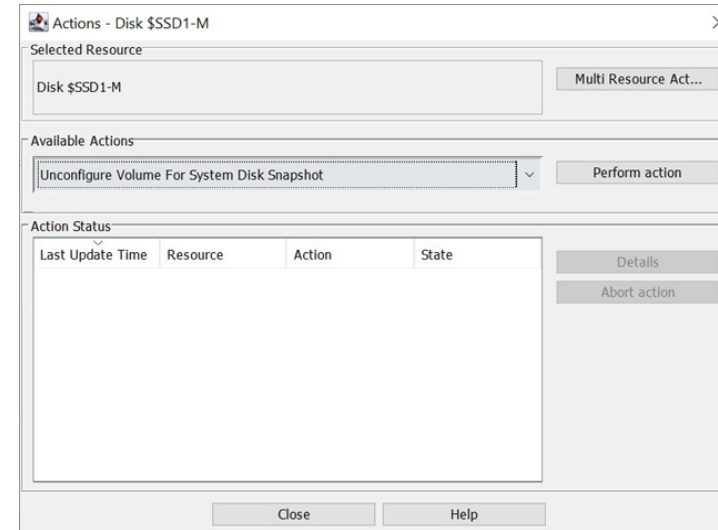
Configure volume for taking snapshot

- **Configure Volume for System Disk Snapshot** must be run on each of the disks including **SYSTEM** disk that is used for taking a snapshot
- Only Configured disks will be used to be store the snapshot
- **Configure Volume for System Disk Snapshot** compares the size of a volume with \$SYSTEM disk. Disks with smaller size are not configured.
- **Configuration For SYSTEM Disk Snapshot** attribute can be used to verify whether the disk is configured or not
- Default value for all disks including \$SYSTEM is **Unconfigured**



Unconfigure volume for System Disk Snapshot

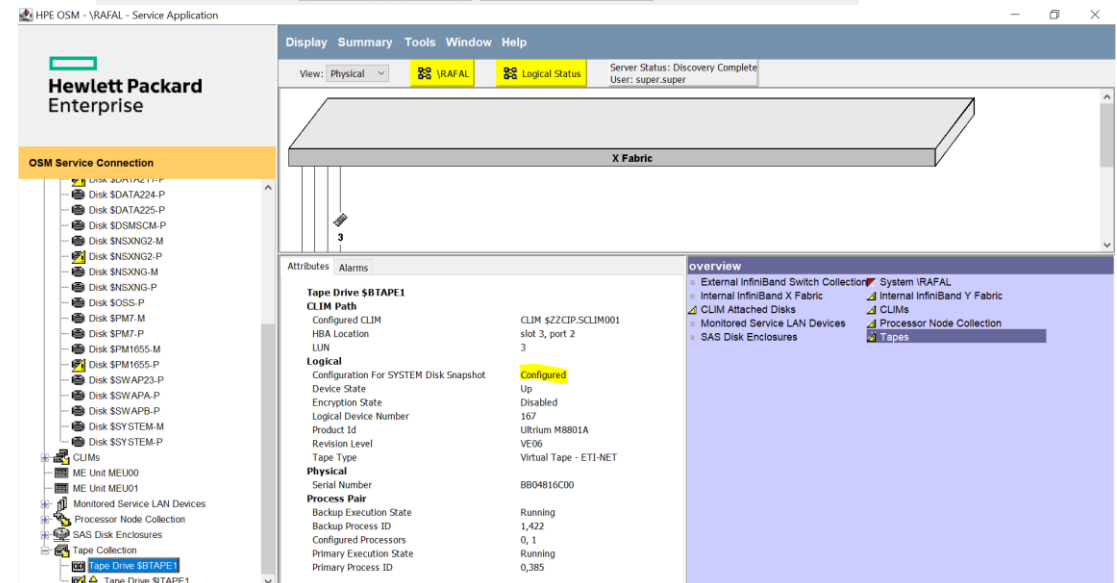
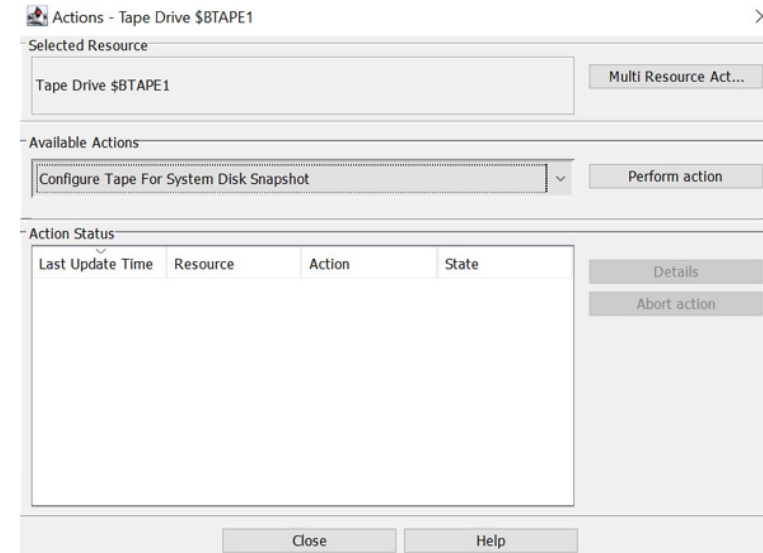
- Run **Unconfigure Volume For System Disk Snapshot** on the disk to remove a disk from the list of configured disks.
- **Unconfigure** the smaller disks if SYSTEM disk is restored with larger size disk.
- **Configuration For SYSTEM Disk Snapshot** attribute can be used to verify disk is configured or not.



Configure tape for taking snapshot

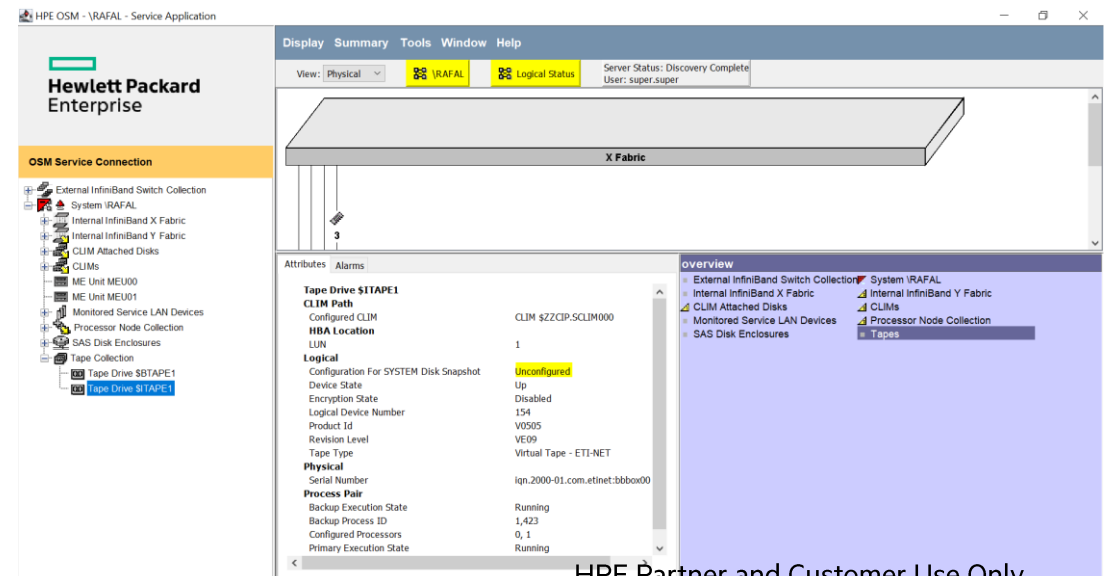
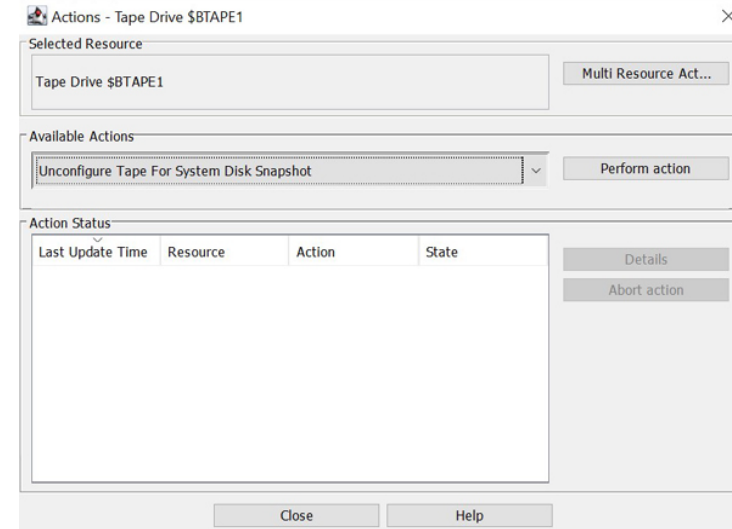
- **Configure Tape for System Disk Snapshot** must be run on each of the tape used for taking a snapshot
- Only BackBox tapes are supported
- Only **Configured** tapes can be used as destination for snapshot
- **Configuration For SYSTEM Disk Snapshot** attribute can be used to verify tape is configured or not

Note: As of the first release, OSM does not have a way to compare the size of a tape with \$SYSTEM disk. It is user's responsibility to compare the size of tape in the Backbox GUI.



Unconfigure tape for System Disk Snapshot

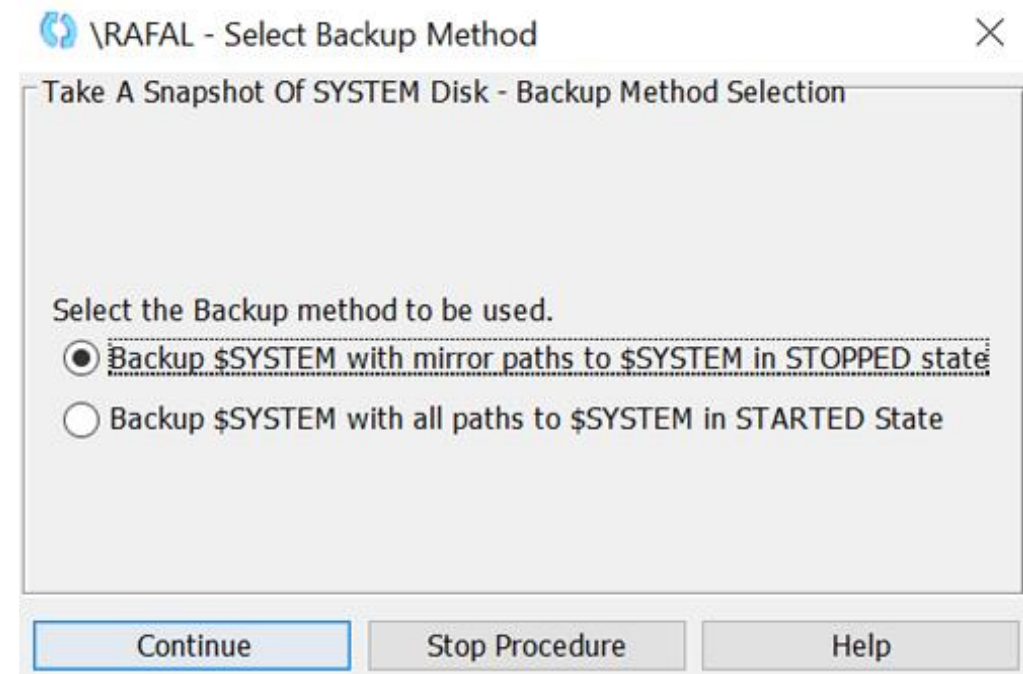
- Run **Unconfigure Tape For System Disk Snapshot** on the tape to be removed from the list of configured tapes
- **Unconfigure** the smaller tapes if SYSTEM disk is restored with larger size disk
- **Configuration For SYSTEM Disk Snapshot** attribute can be used to verify tape is configured or not



HPE Partner and Customer Use Only

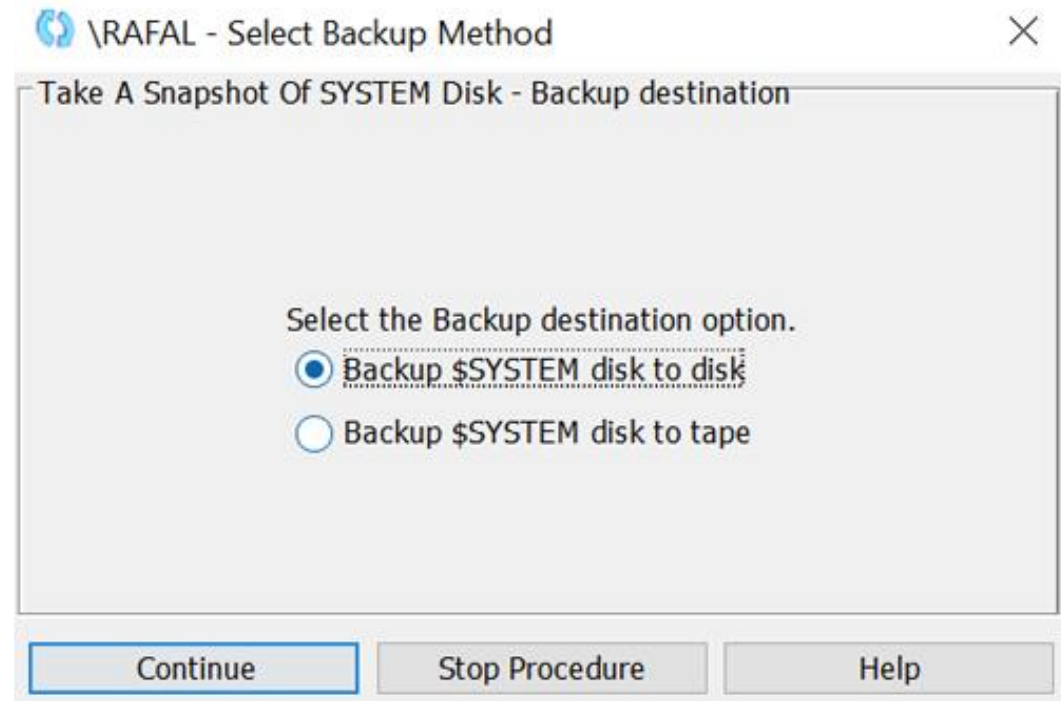
Snapshot methods

- Two types of backup methods
 - Backup **\$SYSTEM** with mirror paths to **\$SYSTEM** in stopped state
 - Backup the **\$SYSTEM** when both the primary and mirror disks are in the **STARTED** state

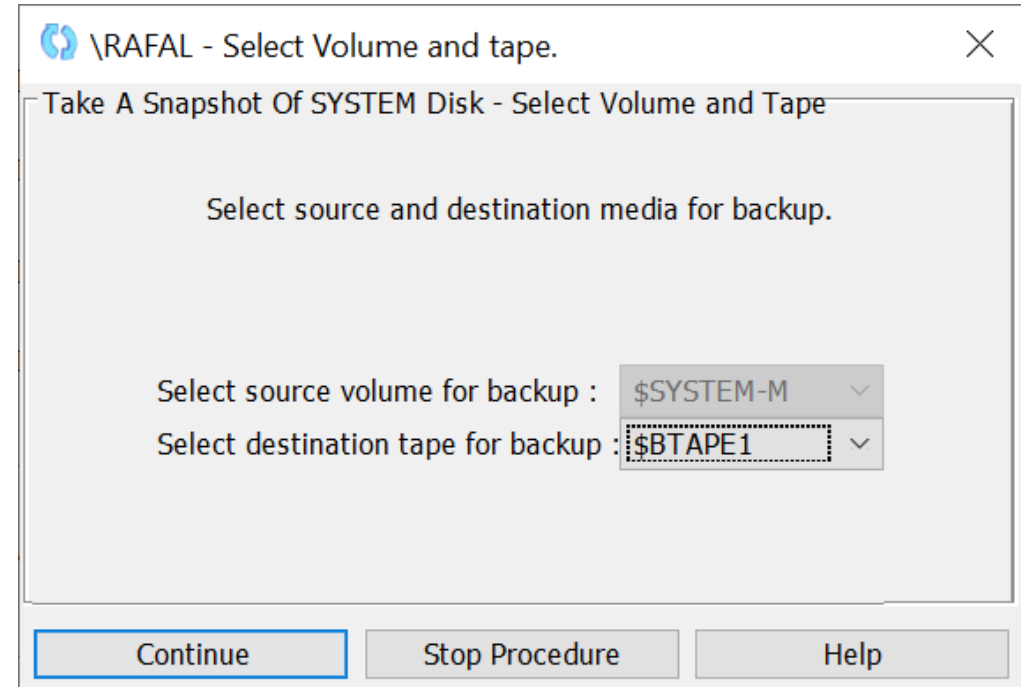
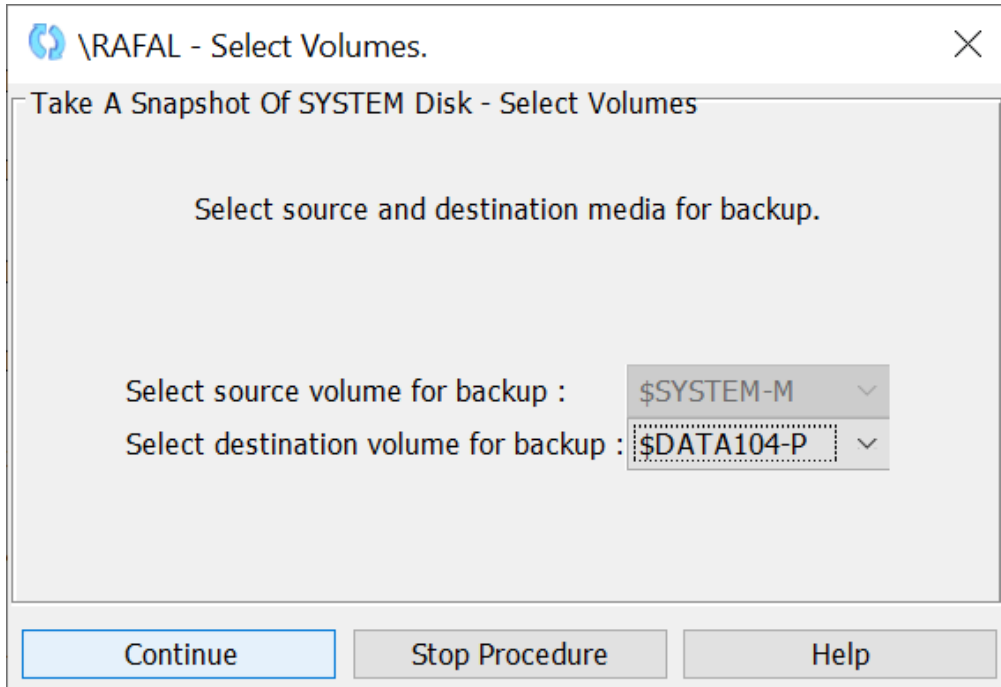


Snapshot destinations

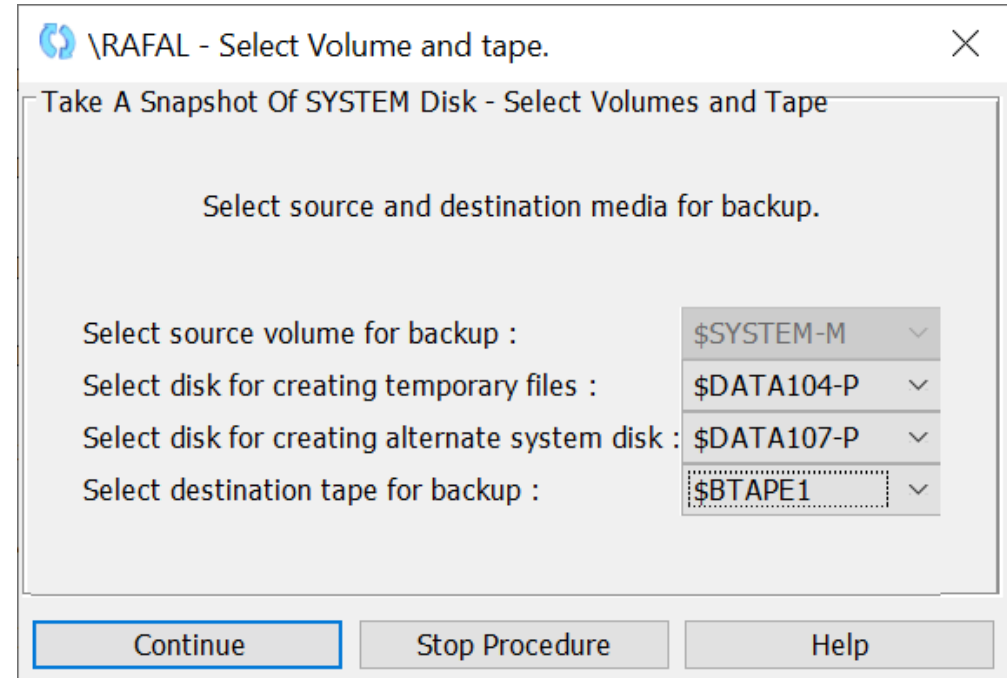
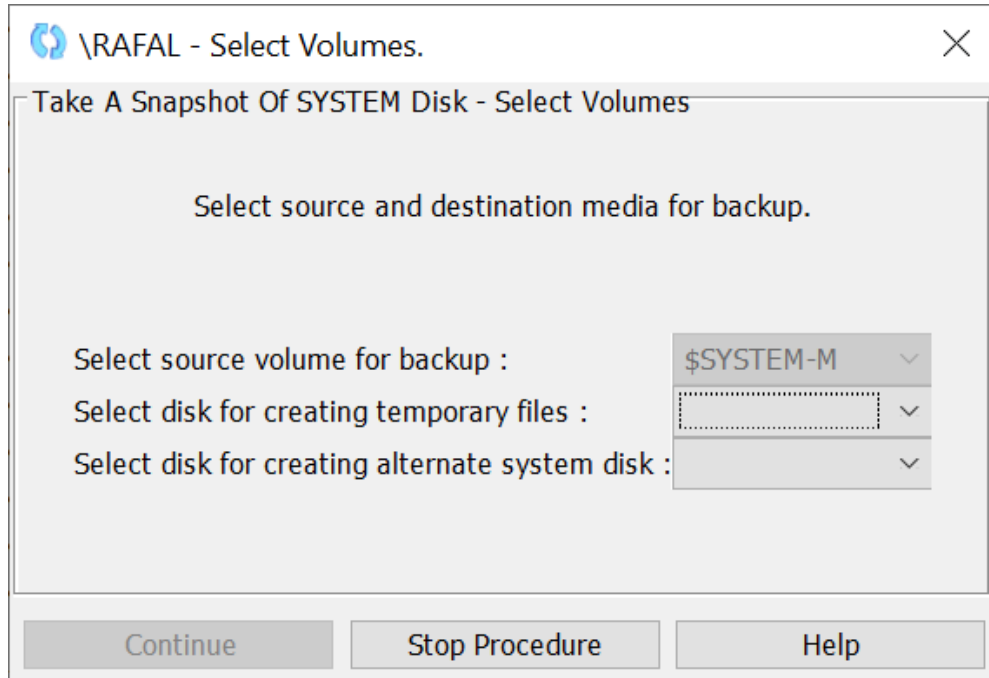
- Both backup methods support
 - \$SYSTEM disk to disk
 - \$SYSTEM disk to BackBox tape



Disks\Tape required for mirror paths to \$SYSTEM in stopped state method



Disks\Tape for all paths to \$SYSTEM in STARTED state snapshot method



Summary screen (Disk)

Take A Snapshot Of SYSTEM Disk - Summary

Confirm that the values selected for the backup are correct. Click the Continue button for starting backup.
Click the Stop Procedure button if wrong values are selected.

Property	Value
Backup Method	Mirror paths to \$SYSTEM in STOPPED state
Backup Media Type	DISK

Property	Value
Source disk for backup	\$SYSTEM-M
Destination disk for backup	\$DATA104-P

Continue Stop Procedure Help

Take A Snapshot Of SYSTEM Disk - Summary

Confirm that the values selected for the backup are correct. Click the Continue button for starting backup.
Click the Stop Procedure button if wrong values are selected.

Property	Value
Backup Method	All paths to \$SYSTEM in STARTED State
Backup Media Type	DISK

Property	Value
Source disk for backup	\$SYSTEM-M
Destination disk for backup	\$DATA107-P
Temporary disk to store virtual tape files	\$DATA104-P

Continue Stop Procedure Help



Summary screen (Tape)

\RAFAL -

Take A Snapshot Of SYSTEM Disk - Summary

Confirm that the values selected for the backup are correct. Click the Continue button for starting backup.
Click the Stop Procedure button if wrong values are selected.

Property	Value
Backup Method	Mirror paths to \$SYSTEM in STOPPED state
Backup Media Type	TAPE

Property	Value
Source disk for backup	\$SYSTEM-M
Destination tape for backup	\$BTAPE1

\RAFAL -

Take A Snapshot Of SYSTEM Disk - Summary

Confirm that the values selected for the backup are correct. Click the Continue button for starting backup.
Click the Stop Procedure button if wrong values are selected.

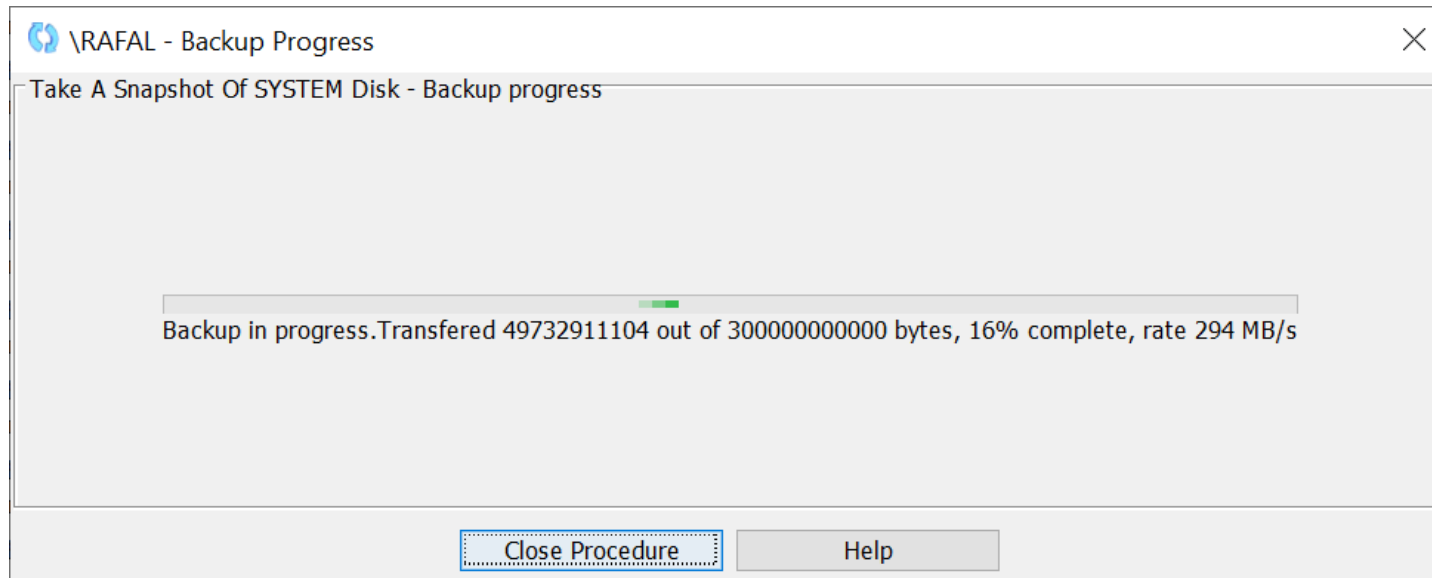
Property	Value
Backup Method	All paths to \$SYSTEM in STARTED State
Backup Media Type	TAPE

Property	Value
Source disk for backup	\$SYSTEM-M
Destination tape for backup	\$BTAPE1
Temporary disk to store virtual tape files	\$DATA104-P
Temporary disk to restore virtual tape files	\$DATA107-P

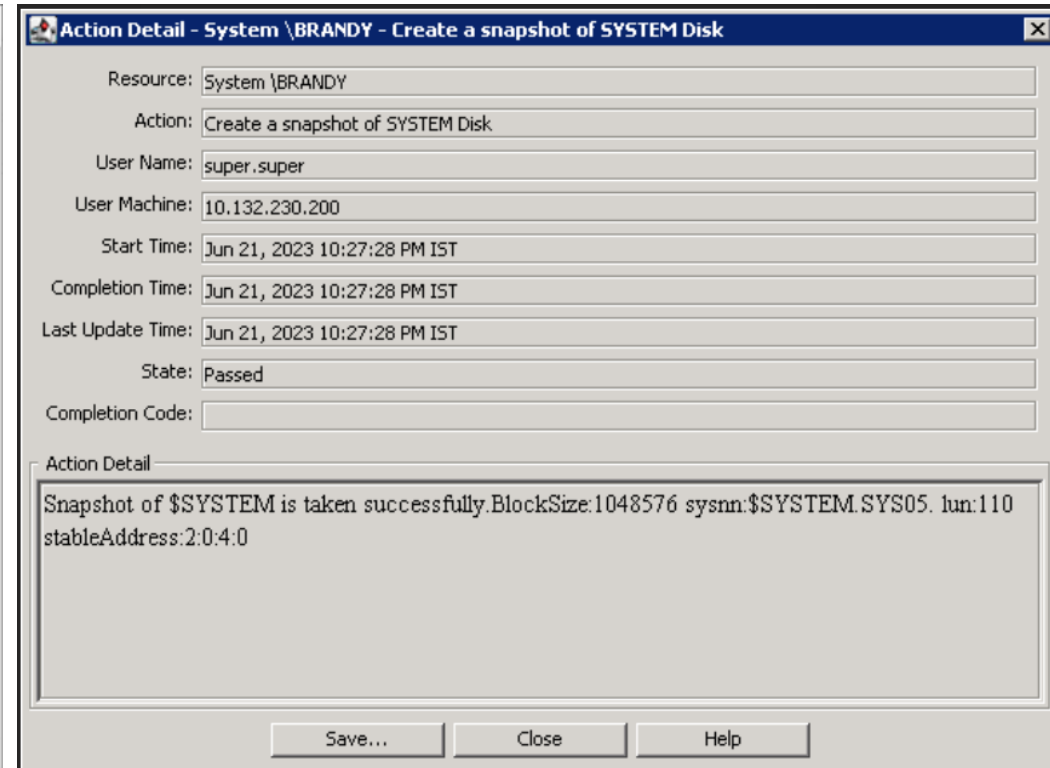
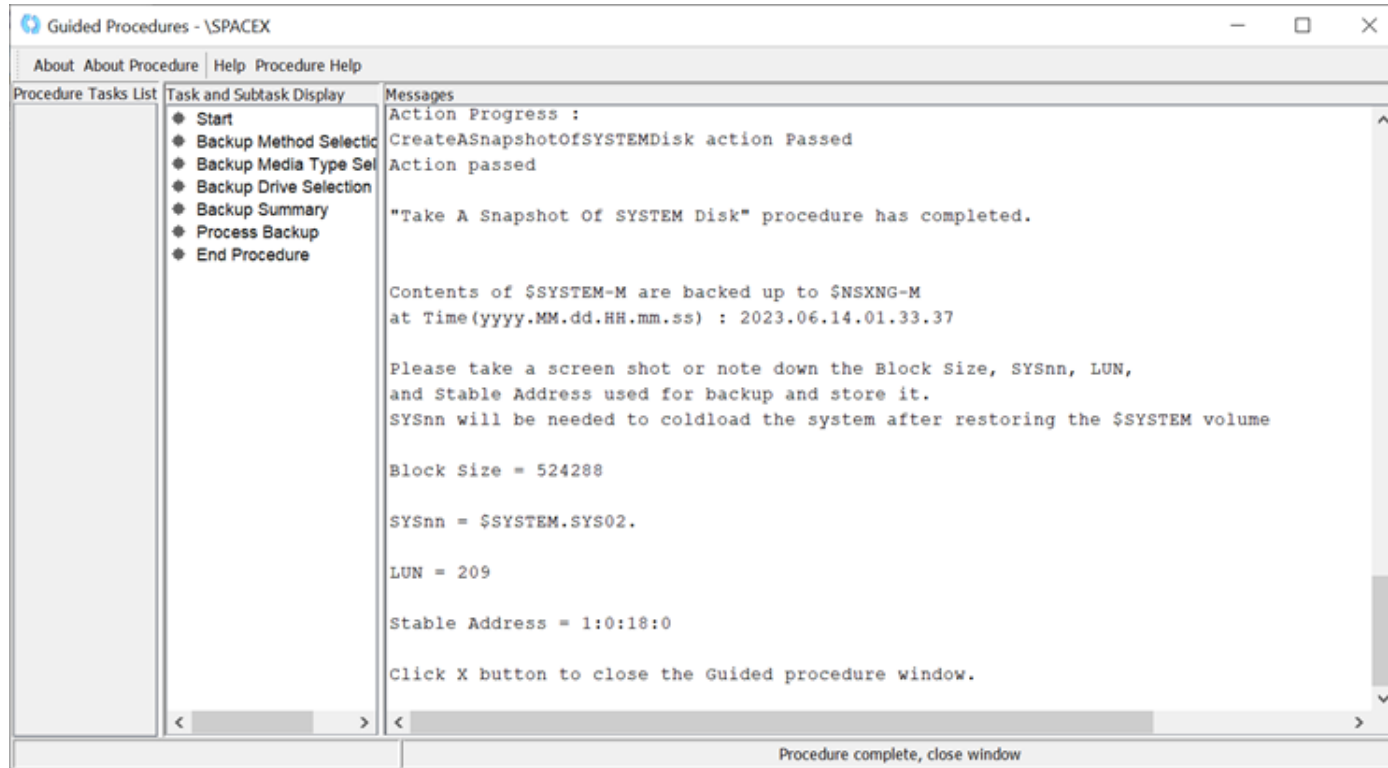


Backup progress

- Displays progress of backup
- Displays transferred bytes, size of source disk, percentage complete, transfer rate (dd in CLIM)



Success Message



- The Block Size, SYSnn, LUN, Stable Address are needed during restore. **Please save them.**



EMS Messages

- **Started to take a Snapshot of SYSTEM Disk guided procedure**
 - 2023-06-12 19:56:59 \SPACEX.\$Y2M6 TANDEM.OSM.G06 001146 Started Take a Snapshot of SYSTEM Disk guided procedure.
- **Block size usage**
 - 2023-06-12 19:56:59 \SPACEX.\$Y2M6 TANDEM.OSM.G06 001146 Block size used for Take a Snapshot of SYSTEM Disk guided procedure :524288
- **Successfully took a snapshot of \$SYSTEM disk**
 - 2023-06-12 19:54:21 \SPACEX.\$Y2M6 TANDEM.OSM.G06 001146 Snapshot of \$SYSTEM is taken successfully.
- **Take a Snapshot of SYSTEM Disk guided procedure failure**
 - 2023-06-12 19:58:10 \SPACEX.\$Y2PV TANDEM.OSM.G06 001146 Take a Snapshot of SYSTEM Disk guided procedure failed.



Configurable parameters

- **BACKUP_DD_BLOCK_SIZE:** This flag allows transferring data in blocks of 512 Bytes to 1048576 bytes (1 Megabyte). 524288 bytes(0.5 Megabyte) is the default block size.
- **BACKUP_DD_CPU_USAGE_LIMIT_PERCENTAGE:** This flag limits the CPU usage of DD process used by OSM for taking a snapshot of SYSTEM disk. This flag supports a range 1–50, 1 means use only 1% CPU. By default, when a flag is not used, transfer is done at full speed.
- **BACKUP_BR_PROCESS_PRIORITY:** This flag allows user to set NSK process priority of NonStop backup and restore processes used by OSM for taking a snapshot of SYSTEM disk when all paths to SYSTEM disk are in STARTED state. 149 is default.
- **CIPPRVD_TACLCMD_TIMEOUT_OVERRIDE:** This flag is applicable for Backup \$SYSTEM disk when all Paths to \$SYSTEM are in STARTED state. Backup Method HDD to HDD snapshot takes few hours to complete. By default, time out for BR Backup and BR Restore is 360 minutes. This flag allows user to set time out value from 1 minute to 580 minutes.

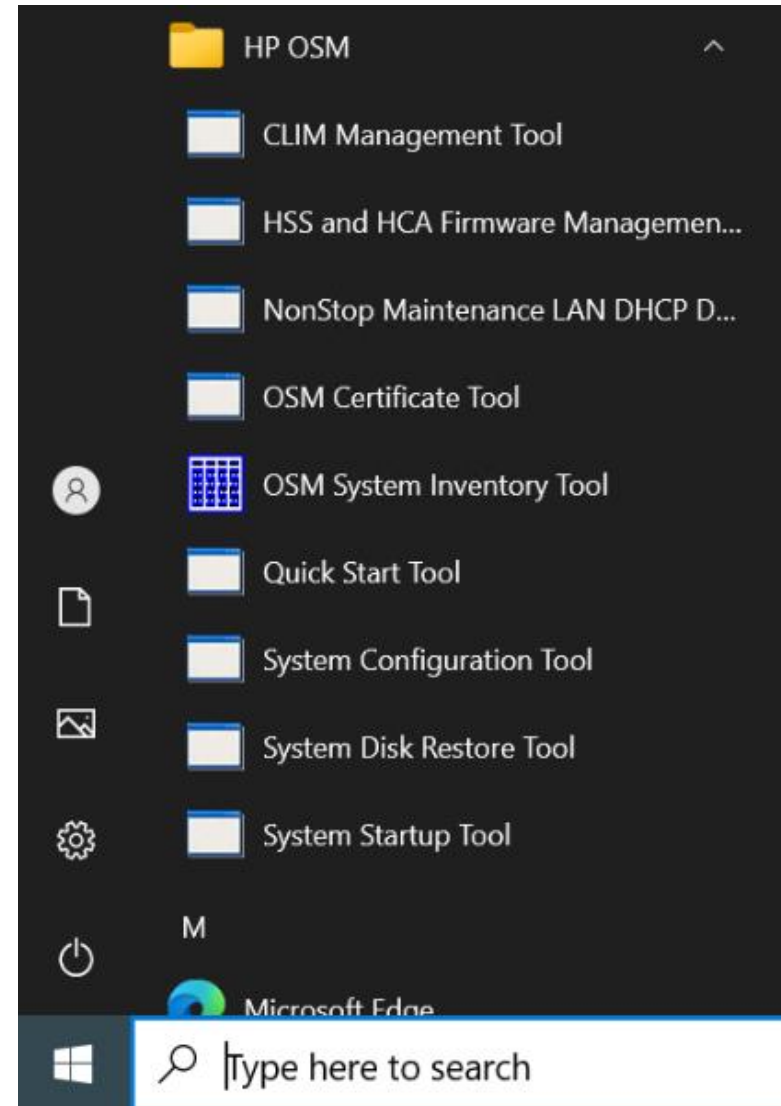


System Disk Restore Tool



Installation and launch

- System Disk Restore Tool gets installed as part of OSM Console tools
- Runs only from NSC, as it needs maintenance LAN connection to SCLIMs
- Can be run either from Primary NSC or the Backup NSC
- System Disk Restore Tool can be launched by clicking **Start > HP OSM > System Disk Restore Tool**



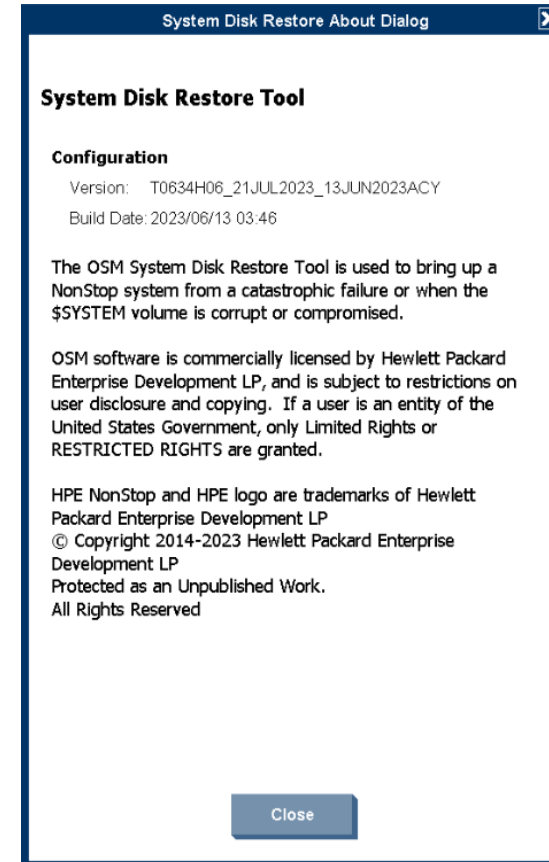
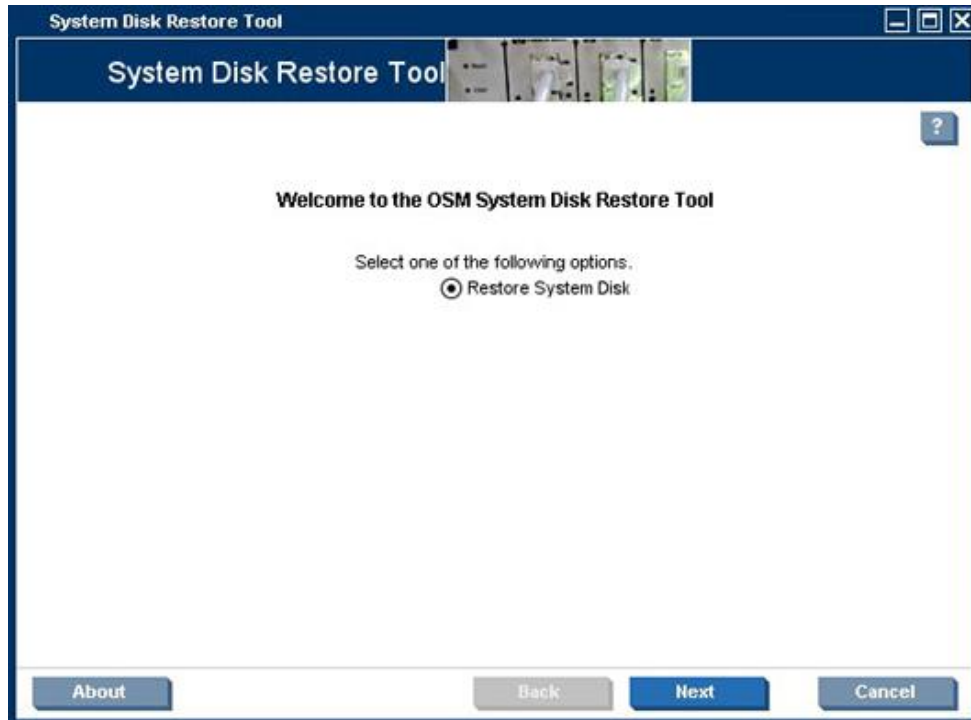
Prerequisites for running **SYSTEM** Disk Restore

- Snapshot of \$SYSTEM disk must have been taken using OSM service connection
- **System Disk Restore** tool must be run when NSK is down
- Use the **Block Size, SYSnn, LUN, STABLE ADDRESS,** and **TIME STAMP** that were used for the backup operation
- Power on only one SCLIM having connection to snapshot disk/tape and restored disk. All other SCLIMs must be shut down
- The tool can run only with the root user ID of CLIM
- The disks or tapes used must be connected to the same storage CLIM as **\$SYSTEM**
- The tool assumes that the destination disk for restore is equal or greater than the disk or tape containing the snapshot of **\$SYSTEM**
- Partitioned disks, disks part of the SMF pool or encrypted disks are not supported
- For restoring from a tape, the BackBox must be configured in Standalone mode and tape LUN must be mounted to SCLIM

- Note: Restoring to an SSD is faster than to an HDD

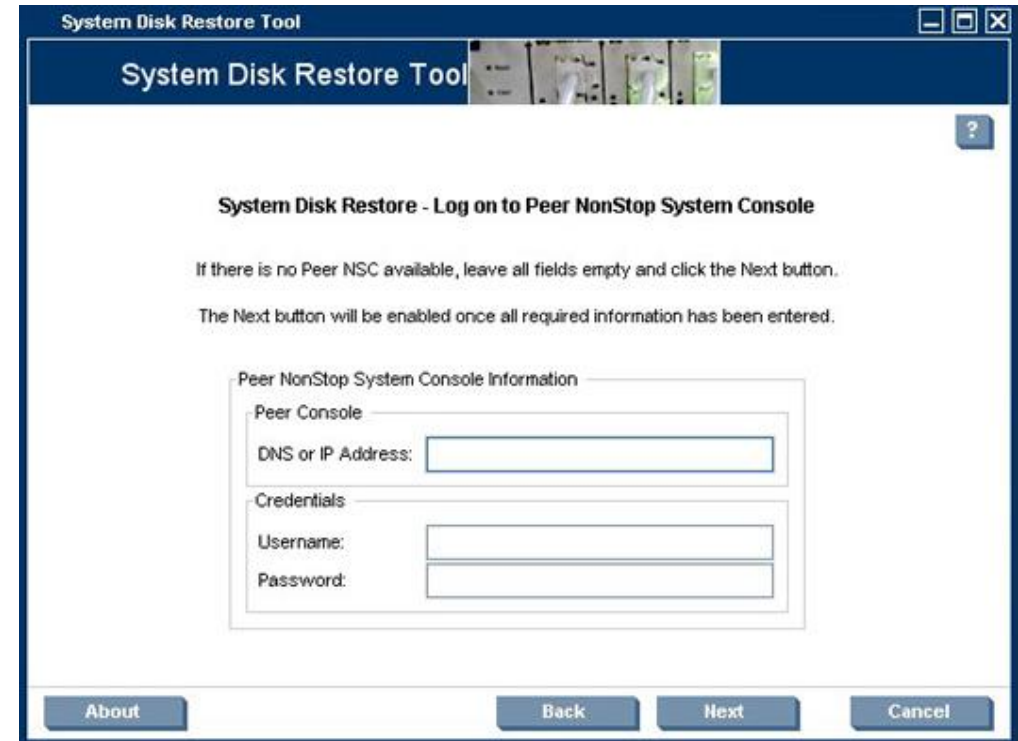


System Disk Restore Tool



Peer NSC

- Tool runs on only one NSC
- Peer NSC is optional
 - If Peer NSC is entered tool checks if restore is in progress from peer NSC
- Can display status of previously started restore

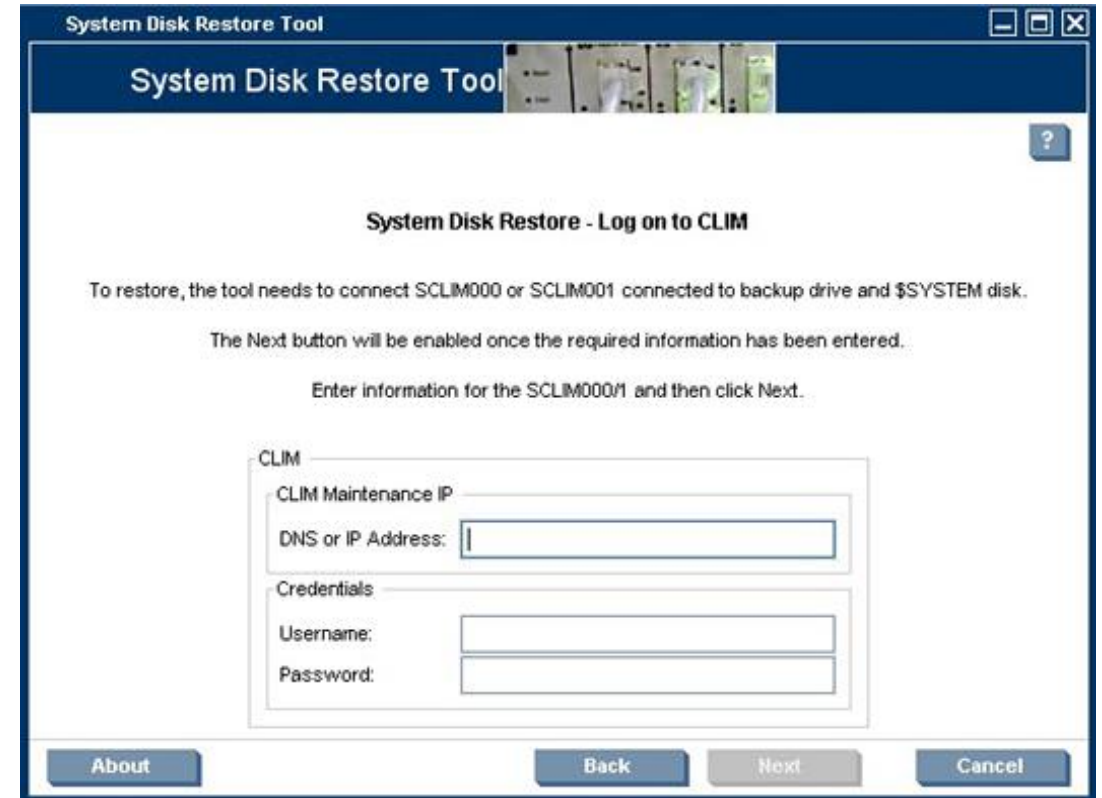


The screenshot shows a window titled "System Disk Restore Tool". The main heading is "System Disk Restore - Log on to Peer NonStop System Console". Below this, there is instructional text: "If there is no Peer NSC available, leave all fields empty and click the Next button. The Next button will be enabled once all required information has been entered." The form is titled "Peer NonStop System Console Information" and contains two sections: "Peer Console" with a "DNS or IP Address:" field, and "Credentials" with "Username:" and "Password:" fields. At the bottom, there are four buttons: "About", "Back", "Next", and "Cancel".



SCLIMs

- Any CLIM where source disk/tape and destination disk are connected can be used to restore but for loading the system, MEUs are needed. Hence preferred SCLIMs to be connected are SCLIM000/ SCLIM001.
- Only SCLIMs have connection to disks



The screenshot shows a window titled "System Disk Restore Tool" with a sub-header "System Disk Restore Tool" and a small image of server hardware. The main content area is titled "System Disk Restore - Log on to CLIM". Below the title, there is a paragraph: "To restore, the tool needs to connect SCLIM000 or SCLIM001 connected to backup drive and \$SYSTEM disk." followed by "The Next button will be enabled once the required information has been entered." and "Enter information for the SCLIM000/1 and then click Next." Below this text is a form with the following fields:

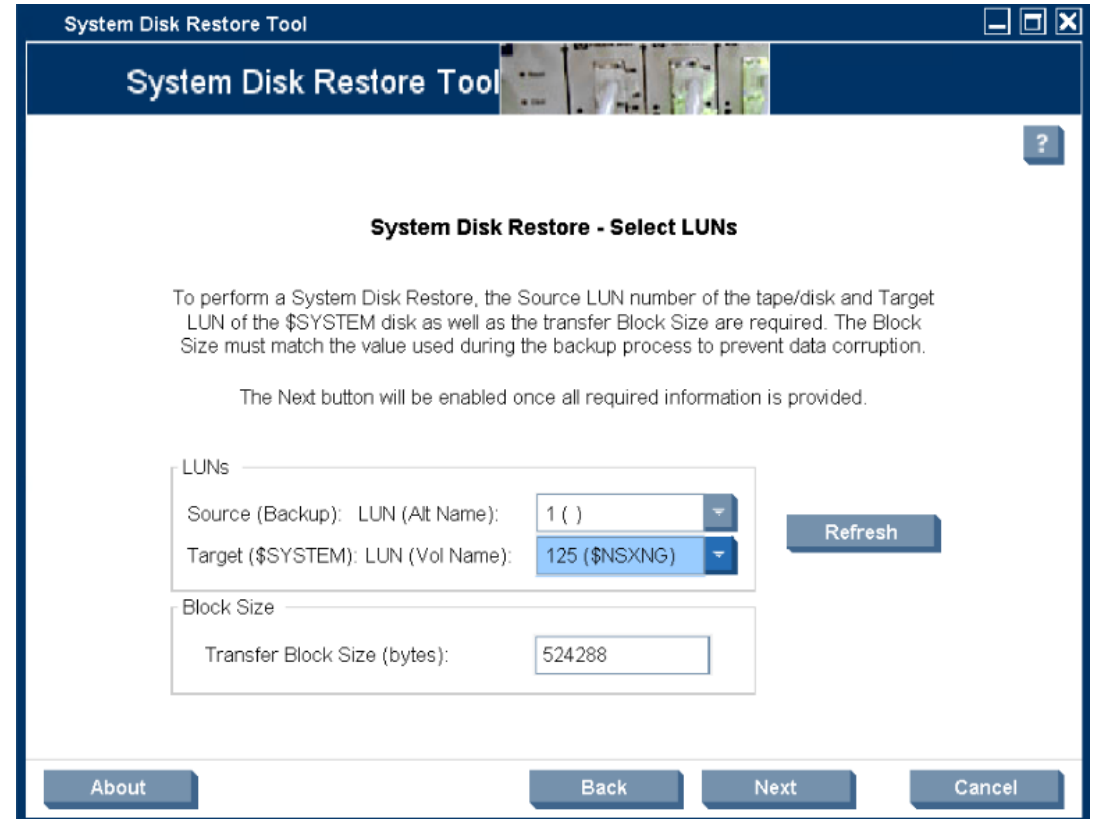
- CLIM Maintenance IP: []
- DNS or IP Address: []
- Credentials:
 - Username: []
 - Password: []

At the bottom of the window, there are four buttons: "About", "Back", "Next", and "Cancel".



LUN Selection for \$SYSTEM disk restore

- Alt Name of source LUN will be displayed
- Vol Name of destination LUN will be displayed
- For tape only LUN number will be listed
- For new disks only LUN number will be listed
- Target block size is set to 0.5 MByte (524288) by default

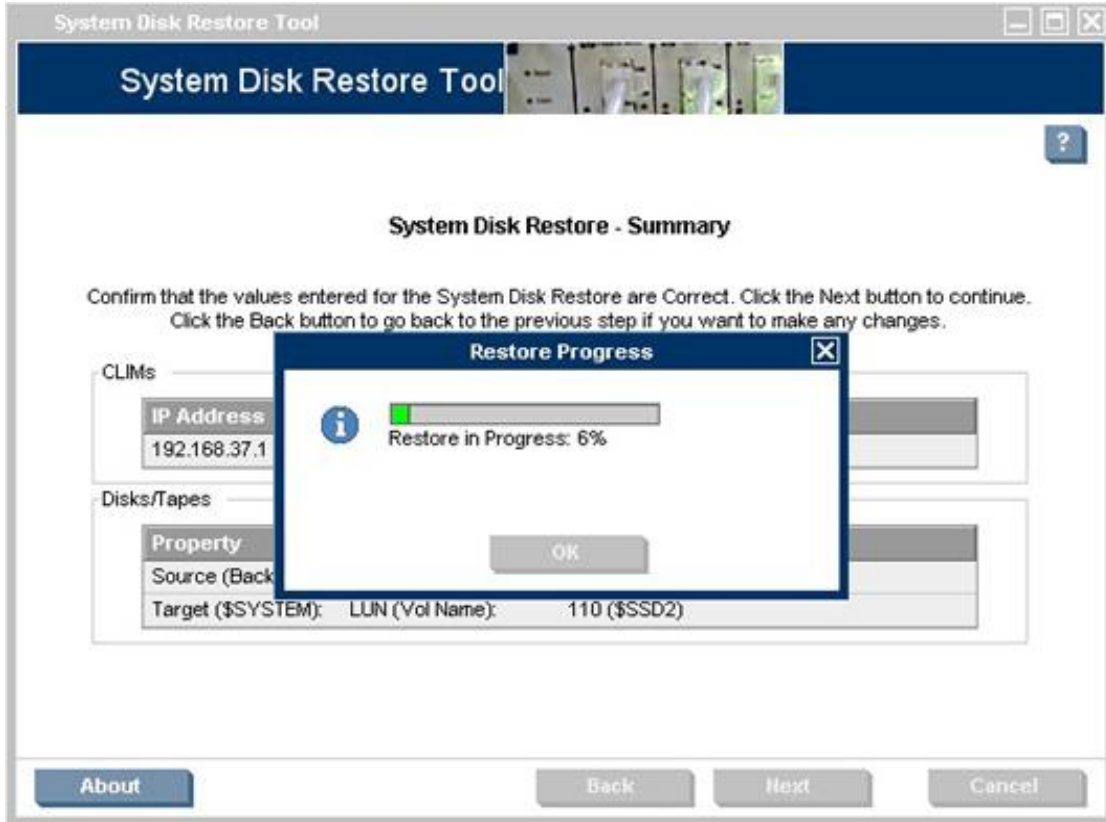


The screenshot shows the 'System Disk Restore Tool' window. The title bar reads 'System Disk Restore Tool'. The main window has a dark blue header with the text 'System Disk Restore Tool' and a help icon. Below the header, the title 'System Disk Restore - Select LUNs' is centered. A paragraph of text explains the requirements for a system restore, mentioning source LUN, target LUN, and transfer block size. Below this, a note states that the 'Next' button will be enabled once all required information is provided. The form contains two sections: 'LUNs' and 'Block Size'. The 'LUNs' section has two dropdown menus: 'Source (Backup): LUN (Alt Name):' with the value '1 ()' and 'Target (\$SYSTEM): LUN (Vol Name):' with the value '125 (\$NSXNG)'. A 'Refresh' button is located to the right of these dropdowns. The 'Block Size' section has a text input field for 'Transfer Block Size (bytes):' with the value '524288'. At the bottom of the window, there are four buttons: 'About', 'Back', 'Next', and 'Cancel'.

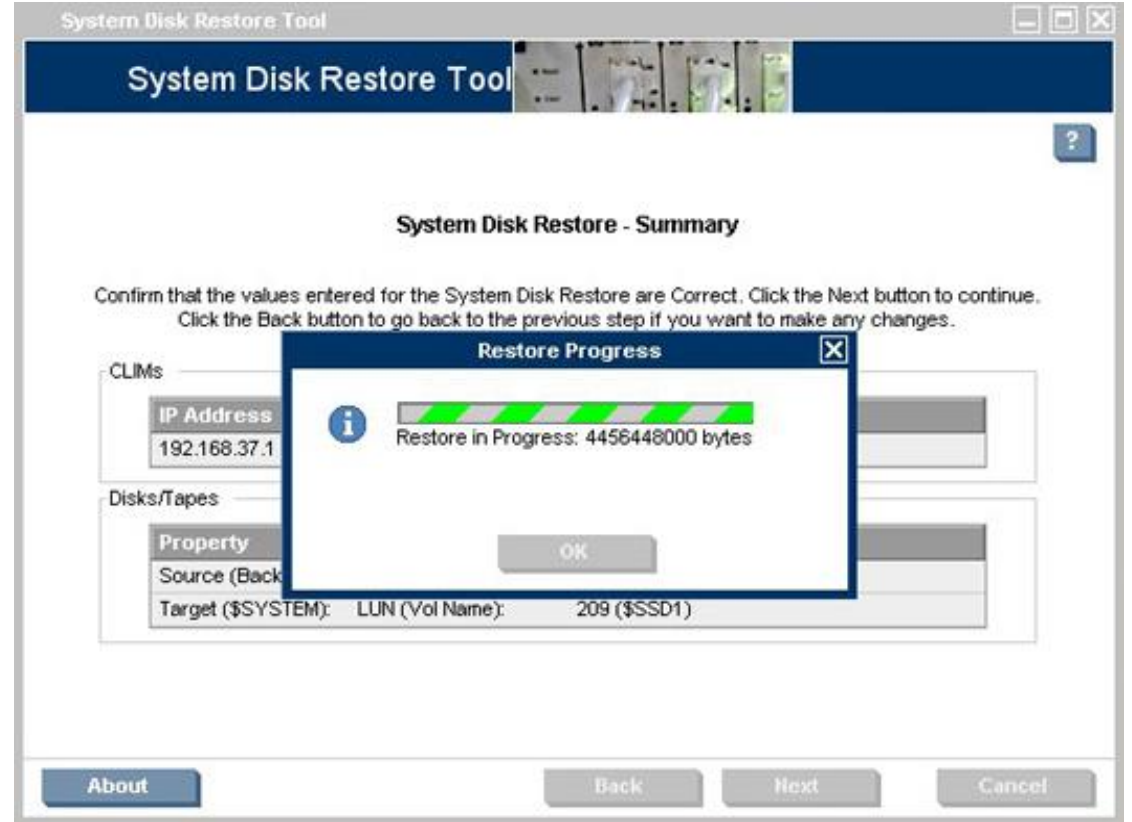


Tracking Restore progress

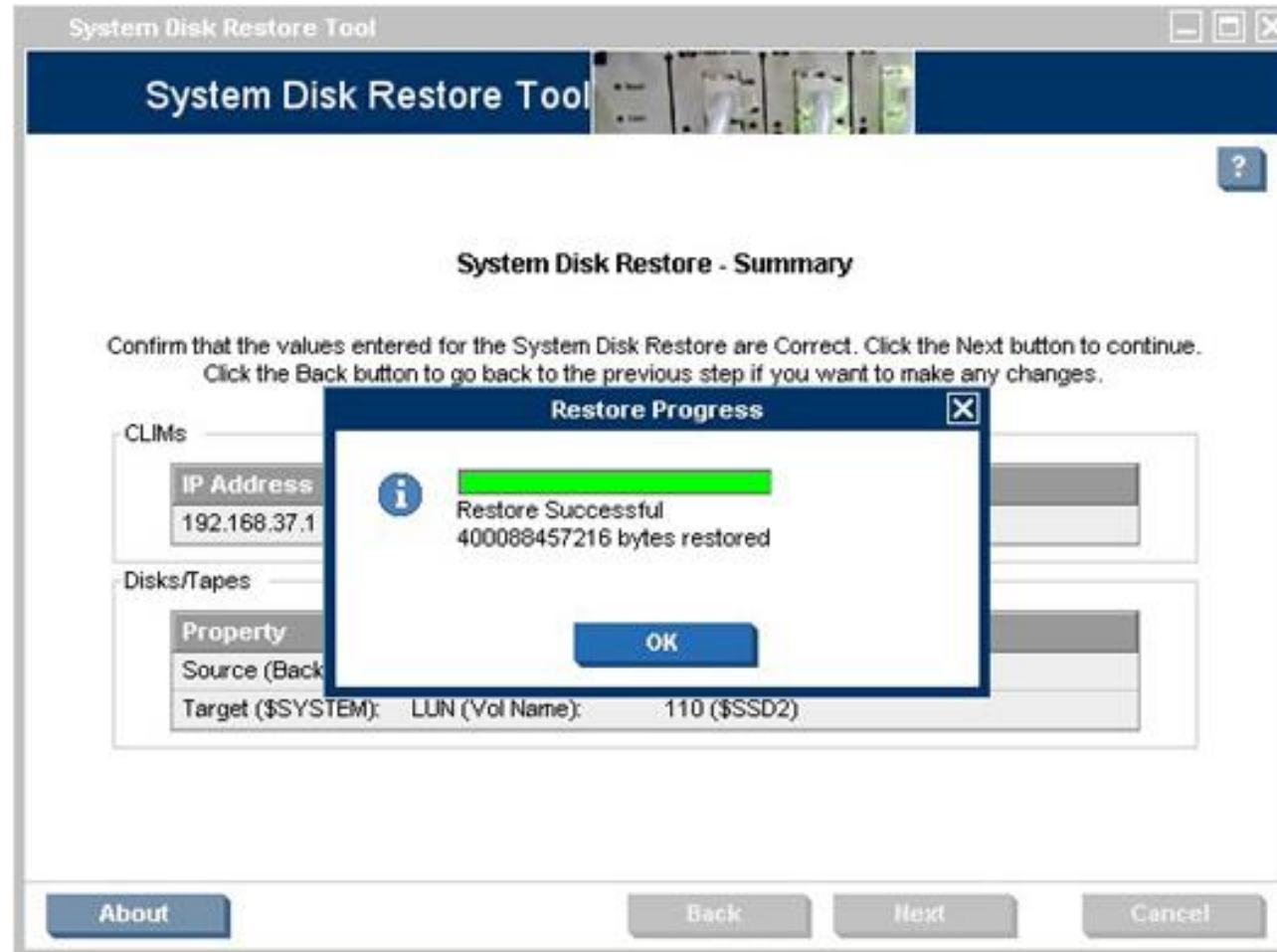
Tape to Disk restore



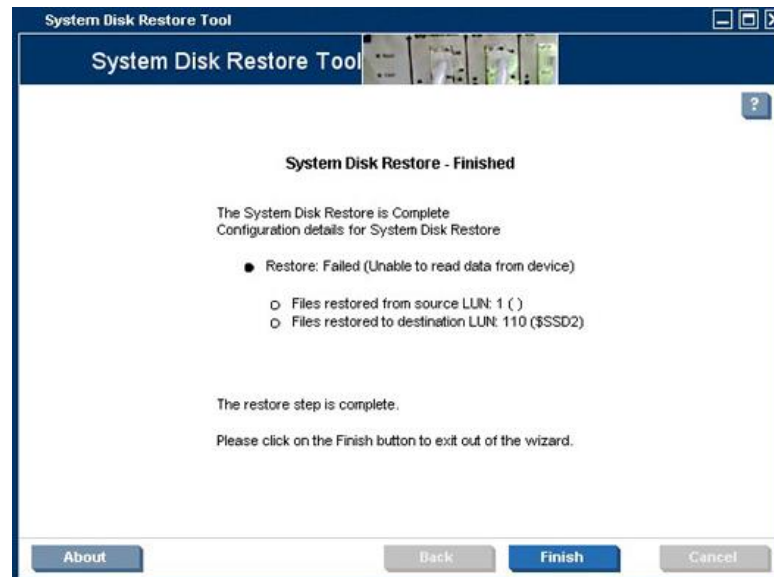
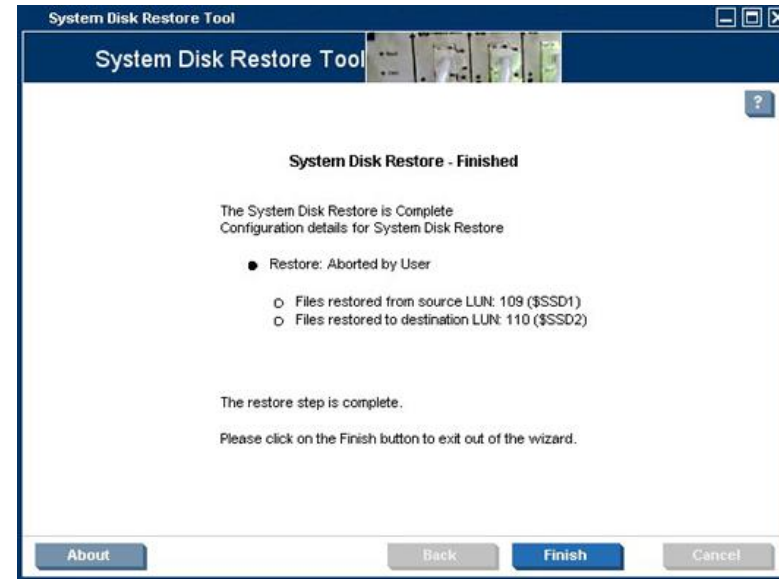
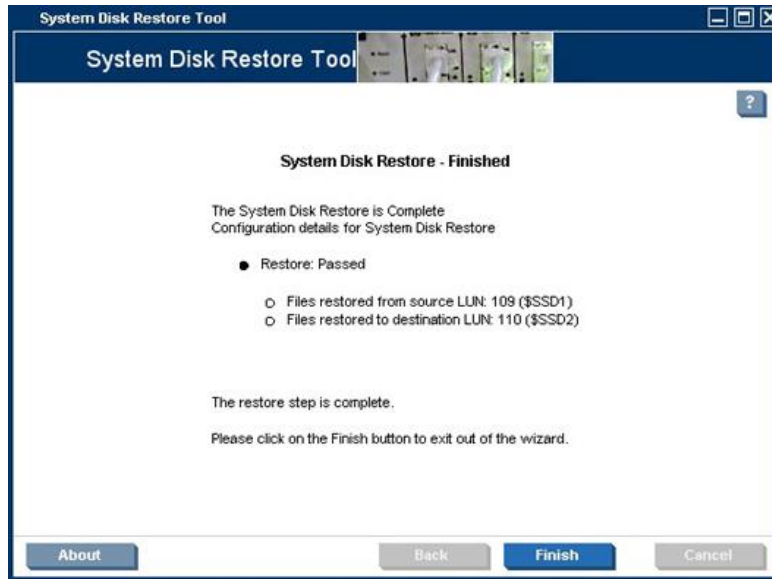
Disk to Disk Restore



Restore success



Summary



Post Restore actions

- Power on the rest of the SCLIMs.
- Revive \$SYSTEM mirror.
- Start OSM Service Connection client and connect to NSK
 - Verify all disks come back to STARTED state after all the CLIMs are in STARTED state. Start the disks that are in STOPPED state using start disk action in OSM or run SCF command to start the disks.
- Run **Delete progress of SYSTEM Disk snapshot** action on **SYSTEM** object
- Verify the disks those were configured for taking snapshot of SYSTEM disk are still relevant. Run **Unconfigure Disk for SYSTEM Disk Snapshot** action on disks those are no longer used for taking snapshot.
- Add any disks required for taking snapshot of SYSTEM disk by running **Configure Disk for SYSTEM Disk Snapshot action**



Reference Documents

OSM Configuration Guide

OSM User Guide

NonStop System Console Installer and Management Guide

OSM SYSTEM Disk Snapshot and Restore User Guide

BackBox User Guide

VTR User Manual



NonStop Partnership– It’s a Beautiful Thing!



Thank you for attending this talk TBC23-TB66 Discover the Latest Advancements in the HPE NonStop Manageability Portfolio

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