NonStop Cluster Essentials
A new product for cluster management

Vinay Gupta
NonStop Manageability Architect, HP
Agenda

- Manageability market trends
- HP Unified Infrastructure Management
- HP NonStop Cluster Essentials
  - Overview
  - Functionality
    - Cluster configuration
    - Cluster discovery
    - Integrated health monitoring
    - Integrated alert monitoring
    - Integrated event monitoring
    - Single-click Boot
    - Virtualized configuration and control
    - Unified account management
    - Software consistency check
    - Integrated inventory reporting
- HP NonStop Cluster Performance Essentials
- Future NonStop Essentials plans
Agenda

• Manageability market trends
• HP Unified Infrastructure Management
• HP NonStop Cluster Essentials
  – Overview
  – Functionality
    • Cluster configuration
    • Cluster discovery
    • Integrated health monitoring
    • Integrated alert monitoring
    • Integrated event monitoring
    • Single-click Boot
    • Virtualized configuration and control
    • Unified account management
    • Software consistency check
    • Integrated inventory reporting
• HP NonStop Cluster Performance Essentials
• Future NonStop Essentials plans
Manageability market trends

**Market Trend** → **Result** → **Requirement**

1. Increasingly a 24 x 7 work environment → Business highly dependent on IT → Need for real-time global view of the enterprise, and immediate resolution of IT problems
2. IT managers facing insufficient staff, more projects, fewer resources → Want more with less (people, capital spending, time) → Easier to use solutions that utilize existing infrastructure
3. IT shops consisting of different components from different vendors → Integrating tools from multiple vendors a priority → Integrated manageability solutions that are standards-based
4. Cost justification (ROI, payback) of paramount importance → Want to purchase what they need and expand capabilities later → Modular design and pricing

*Based on IDC market analysis*
Key challenges in managing IT infrastructure

- Integration & Consolidation
- Multiple Vendors and Platforms
- Lack of tools
- New Technologies
- Lack of innovations
- Reliability, Availability
- Security
- Competitive Price
- Market
- Customer Service
- Time of Response to Problems
- Silo Culture
- Budget Pressure
- Staffing & Training
- Help Desk
- Internal Company Mgmt

*Based on IDC market analysis

Top two challenges:
- Integration and consolidation
- Multiple vendors and platforms
Business drivers in order of priority

- **US**
  - **Operational efficiency**
  - Cost reduction
  - Customer service
  - Business flexibility
  - Availability and reliability

- **Europe**
  - **Operational efficiency**
  - Customer service
  - Cost reduction
  - Time to market

*Based on IDC market analysis*
Agenda

• Manageability market trends
• HP Unified Infrastructure Management
• HP NonStop Cluster Essentials
  - Overview
  - Functionality
    • Cluster configuration
    • Cluster discovery
    • Integrated health monitoring
    • Integrated alert monitoring
    • Integrated event monitoring
    • Single-click Boot
    • Virtualized configuration and control
    • Unified account management
    • Software consistency check
    • Integrated inventory reporting
• HP NonStop Cluster Performance Essentials
• Future NonStop Essentials plans
### Next Generation Data Center vision

**HP Adaptive Infrastructure**

#### Key enablers

<table>
<thead>
<tr>
<th>Current state</th>
<th>High-cost IT islands</th>
<th>Low-cost pooled IT assets</th>
<th>Future state</th>
<th>Next-generation data center</th>
</tr>
</thead>
</table>
| **IT Systems & Services** | • Scalability based on standards  
• IT services and support | • Energy-efficient computing  
• Unified infrastructure management  
• Proactive best practices and built-in protection  
• Pooling and sharing of IT resources  
• Dynamic control of IT service delivery | | |
| **Power & Cooling** | | | | |
| **Management** | • Unified infrastructure management  
• Integrated IT and business services management | | | |
| **Security** | • Proactive best practices and built-in protection | | | |
| **Virtualization** | | | | |
| **Automation** | | | | |

- Proactive best practices and built-in protection
HP Unified Infrastructure Management
A foundation for the Adaptive Enterprise

- Business objectives and strategy
- Business services
- Application services
- Infrastructure services
- Service delivery management
- Service delivery

- Application Management
- Business Process Management

HP Operations Suite
- Tivoli
- CA
- MOM

Standards: WS-CIM/WSDM/WSRF

Unified Infrastructure Management
HP Systems Insight Manager and Essentials Software

Standards: SNMP, SMI-S, WBEM, SMASH

Element Management
Best Managed HP Platforms:
ProLiant, Integrity, NonStop, StorageWorks, etc
Agenda

• Manageability market trends
• HP Unified Infrastructure Management
• HP NonStop Cluster Essentials
  – Overview
  – Functionality
    • Cluster configuration
    • Cluster discovery
    • Integrated health monitoring
    • Integrated alert monitoring
    • Integrated event monitoring
    • Single-click Boot
    • Virtualized configuration and control
    • Unified account management
    • Software consistency check
    • Integrated inventory reporting
• HP NonStop Cluster Performance Essentials
• Future NonStop Essentials plans
HP NonStop Cluster Essentials

- First product in HP NonStop Essentials product family
- A plug-in to HP SIM
- Integrated cluster management solution for homogeneous and heterogeneous clusters
NonStop Cluster Essentials

Functionality

- One package to perform all cluster management tasks across platforms
  - Using same user interface

<table>
<thead>
<tr>
<th>Integrated health monitoring</th>
<th>Integrated alert monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integrated event monitoring</td>
<td>Single-click boot</td>
</tr>
<tr>
<td>Virtualized config/control</td>
<td>Unified account management</td>
</tr>
<tr>
<td>Software consistency check</td>
<td>Integrated inventory reporting</td>
</tr>
</tbody>
</table>

Integrated performance monitoring via HP NonStop Cluster Performance Essentials
NonStop Cluster Essentials

Features

• Built-in fault-tolerance
  o Support of multiple Central Management Servers (CMSs)

• Built-in scalability
  o From 2 to 100’s of servers and clusters

• Security
  o All communication between console and managed servers secure and all data encrypted
NonStop Cluster Essentials

Benefits

- Flexible staffing models
- Reduced training costs
- Standardized responses to events
- Non-disruptive implementation
- Reduced administration efforts
- Quicker time to problem resolution

= Lower TCO
NonStop Cluster Essentials
Managed platforms

• **Current support**
  - HP NonStop Integrity NS-Series servers running H06.04 RVU or later
  - HP rack-mount ProLiant servers running Red Hat Linux Enterprise Edition AS 4.4 or later
  - HP ProLiant BladeSystems running Red Hat Linux Enterprise Edition AS 4.4 or later

• **Next release support**
  - HP NonStop Blades servers
  - HP NonStop S-Series servers
NonStop Cluster Essentials
Console specifications

- x86 system with 1.5 GHz or more processor and at least 2 GB RAM
- Microsoft Windows XP or Microsoft Windows Server 2003
  - Microsoft Vista support in next release
- HP SIM 5.1
  - HP SIM 5.2 support in next release
- MSDE or SQL Server 2000 support
  - SQL Server 2005 Express support in next release
- Microsoft Internet Explorer 6
  - Microsoft Internet Explorer 7 in next release
NonStop Cluster Essentials

Use cases

Now

- Customers using NonStop clusters
- Customers using NonStop in conjunction with Linux servers
- Customers using Virtual Tape Server (VTS)

In future

- Customers using multiple types of HP BladeSystems
- Customers using mixed S-Series, NS-Series, and BladeSystems
NonStop Cluster Essentials
Architecture

Remote machine

Web browser

HP SIM CMS

HP SIM core
Cluster Essentials plug-in
HP SIM Database

NonStop

Existing agents and tools
Cluster Essentials plug-in

Linux

Existing agents and tools
Cluster Essentials plug-in
Agenda

• Manageability market trends
• HP Unified Infrastructure Management
• HP NonStop Cluster Essentials
  – Overview
  – Functionality
    • Cluster configuration
    • Cluster discovery
    • Integrated health monitoring
    • Integrated alert monitoring
    • Integrated event monitoring
    • Single-click Boot
    • Virtualized configuration and control
    • Unified account management
    • Software consistency check
    • Integrated inventory reporting
• HP NonStop Cluster Performance Essentials
• Future NonStop Essentials plans
Cluster Configuration Management Application

- Allows setting up cluster configurations
- Allows customers to create an administrative cluster independent of clustering technology
Cluster Configuration Management Application

- Requires IP addresses (or FQDN) of maintenance and operational interfaces of individual servers
  - IP addresses can be pinged to ensure that they are correct and reachable.

- Configuration can be saved on console from where the application is launched as well as on a different console or a set of consoles.
Cluster Configuration Management Application

- Requires IP addresses (or FQDN) of maintenance and operational interfaces of individual servers
  - IP addresses can be pinged to ensure that they are correct and reachable.
- Configuration can be saved on console from where the application is launched as well as on a different console or a set of consoles
Agenda

• Manageability market trends
• HP Unified Infrastructure Management
• HP NonStop Cluster Essentials
  – Overview
  – Functionality
    • Cluster configuration
    • Cluster discovery
    • Integrated health monitoring
    • Integrated alert monitoring
    • Integrated event monitoring
    • Single-click Boot
    • Virtualized configuration and control
    • Unified account management
    • Software consistency check
    • Integrated inventory reporting
• HP NonStop Cluster Performance Essentials
• Future NonStop Essentials plans
NonStop Cluster discovery

- New cluster type in HP SIM - NonStop Cluster
- Configured NonStop Clusters automatically discovered as their servers are discovered by HP SIM
- Configured NonStop clusters displayed in HP SIM under All Systems, All Clusters, and NonStop Clusters trees
  - Click on NonStop Cluster name to go to its home page
NonStop Cluster home page
System tab

myCluster (Cluster)

<table>
<thead>
<tr>
<th>Health Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summary: 0 Critical</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HS</th>
<th>MP</th>
<th>SW</th>
<th>VPM</th>
<th>ES</th>
<th>System Name</th>
<th>System Type</th>
<th>System Address</th>
<th>Product Name</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>diver-cuplab.bsc.copacorp.net in Cluster myCluster</td>
<td>Server</td>
<td>16.107.134.35</td>
<td>NonStop Server</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SCUBA in Cluster myCluster</td>
<td>Server</td>
<td>16.107.145.24</td>
<td>NonStop Server</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SNORKLE in Cluster myCluster</td>
<td>Server</td>
<td>16.107.145.25</td>
<td>NonStop Server</td>
</tr>
</tbody>
</table>

- Aggregated health status and software version status
- Information and status of each server in the cluster
  - Click on a server name to launch single system management applications
NonStop Cluster home page
Tools & Links tab

• NonStop Cluster Event Viewer
• NonStop Cluster Software Version Status
• NonStop Cluster Configuration Management
• NonStop Cluster Management Tasks
• NonStop Cluster Data Collection Report
• Refresh NonStop Cluster Configuration
Agenda

• Manageability market trends
• HP Unified Infrastructure Management
• HP NonStop Cluster Essentials
  – Overview
  – Functionality
    • Cluster configuration
    • Cluster discovery
    • Integrated health monitoring
    • Integrated alert monitoring
    • Integrated event monitoring
    • Single-click Boot
    • Virtualized configuration and control
    • Unified account management
    • Software consistency check
    • Integrated inventory reporting

• HP NonStop Cluster Performance Essentials
• Future NonStop Essentials plans
Nonstop Cluster health status

- Same as the health status of server with the most severe health
- Dynamically updated as problems occur (or are corrected) on individual servers
- Displayed in the HS column in the All Systems, All Clusters, and NonStop Clusters table views
- Displayed on the NonStop Cluster home page
Agenda

• Manageability market trends
• HP Unified Infrastructure Management
• HP NonStop Cluster Essentials
  – Overview
  – Functionality
    • Cluster configuration
    • Cluster discovery
    • Integrated health monitoring
    • Integrated alert monitoring
    • Integrated event monitoring
    • Single-click Boot
    • Virtualized configuration and control
    • Unified account management
    • Software consistency check
    • Integrated inventory reporting
• HP NonStop Cluster Performance Essentials
• Future NonStop Essentials plans
Nonstop Cluster alert status

- Same as the alert status of server with the most severe alert
- Dynamically updated as alerts are created on individual servers
- Displayed in the ES column in the All Systems and All Clusters table views
NonStop Cluster alert monitoring

- Aggregated alerts from all servers in the cluster displayed in the Events tab of a NonStop Cluster
- Include:
  - Alerts created by OSM on NonStop servers
  - Alerts created by Insight Agents on Linux servers
  - Events created by HP SIM on behalf of servers
- Click on any alert to get details and repair actions
Agenda

- Manageability market trends
- HP Unified Infrastructure Management
- HP NonStop Cluster Essentials
  - Overview
  - Functionality
    - Cluster configuration
    - Cluster discovery
    - Integrated health monitoring
    - Integrated alert monitoring
    - Integrated event monitoring
    - Single-click Boot
    - Virtualized configuration and control
    - Unified account management
    - Software consistency check
    - Integrated inventory reporting
- HP NonStop Cluster Performance Essentials
- Future NonStop Essentials plans
NonStop Cluster Event Viewer

- Integrated event viewer to monitor events from all servers in the cluster
  - NonStop EMS events
  - Linux syslog and evlog events
- Displays merged events from all servers in the cluster, sorted by time
- Provides all event filtering capabilities of EMS and evlog
- Allows real-time and time-based views
- Supports filters for events of a particular subsystem, severity, or any other filter criteria
- Flexible event display options
NonStop Cluster Event Viewer
Main form

- Main form to provide criteria for event display
- By default, all servers in the cluster are selected
  - Select specific servers, “All NonStop Servers”, or “All Linux Servers”
  - Click on “Show Events” to retrieve events after all required and optional criteria have been entered
NonStop Cluster Event Viewer

Collection criteria

- **Real time**
  - Disables all other collection criteria
  - Displays events in real time as they occur, starting from current time

- **Time-based**
  - Begin time as oldest event time, system load time, or user-specified time
  - End time as current time or user-specified time

*Collection Criteria needs to be populated to enable the Show Events Button.*

<table>
<thead>
<tr>
<th>Collection Criteria</th>
<th>View Options:</th>
<th>Event Collection Begin:</th>
<th>Event Collection End:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Time Based</strong></td>
<td><strong>Oldest Event Time</strong></td>
<td><strong>Current Time</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Real Time</strong></td>
<td><strong>System Load Time</strong></td>
<td><strong>User Specified Time</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>User Specified Time</strong></td>
<td></td>
</tr>
</tbody>
</table>

Enter Time: (Format: [yyyy-[m]m-[d]d] [h]:[m]):ss) 2007-09-28 10:00:00
NonStop Cluster Event Viewer

EMS options

- EMS filter criteria to include or exclude the specified conditions:
  - Event source
  - Subsystem
  - Severity
  - Generating system number
  - Event type
  - Filter File
  - Event name/number
  - Processor number
  - PIN
  - Owner
  - Emphasis
  - User
  - Subject

- Search string, with an option for case sensitivity
- Template file selection
NonStop Cluster Event Viewer

EMS options

- Subsystems automatically populated when the owner “TANDEM” is selected
- Event names/numbers automatically populated when a single subsystem is selected
- User-specified owner, subsystems and event numbers allowed
- User-specified event types allowed

<table>
<thead>
<tr>
<th>Event Source:</th>
<th>$ZLCG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filter File:</td>
<td></td>
</tr>
<tr>
<td>Filter Criteria:</td>
<td>Inclusion ○ Exclusion</td>
</tr>
<tr>
<td>Owner:</td>
<td>TANDEM</td>
</tr>
<tr>
<td>Subsystem:</td>
<td>User Specified</td>
</tr>
<tr>
<td></td>
<td>AM3270</td>
</tr>
<tr>
<td></td>
<td>AM6520</td>
</tr>
<tr>
<td></td>
<td>APPCLSTR</td>
</tr>
<tr>
<td></td>
<td>ATM</td>
</tr>
<tr>
<td></td>
<td>ATP8100</td>
</tr>
<tr>
<td>Event Name/Number:</td>
<td>User Specified Event Number</td>
</tr>
<tr>
<td></td>
<td>(1001)</td>
</tr>
<tr>
<td></td>
<td>(1002)</td>
</tr>
<tr>
<td></td>
<td>(1003)</td>
</tr>
<tr>
<td></td>
<td>(1004)</td>
</tr>
<tr>
<td></td>
<td>(1005)</td>
</tr>
</tbody>
</table>
NonStop Cluster Event Viewer

evlog options

- evlog filter criteria to include or exclude the specified conditions:
  - Facility
  - Event type
  - Severity
  - User ID
  - Process

- Search string, with an option for case sensitivity
- Template search path selection
- User-specified facilities allowed
NonStop Cluster Event Viewer

Event display

- Real time display
  - Rollover when maximum configured events per page is reached
  - Pause/Resume support
  - Sorting by any column in pause mode

- Time-based display
  - Only maximum configured number of events per page
  - Next/Prev support
  - Sorting by any column
NonStop Cluster Event Viewer
Event details

• Event details retrieved by clicking on the link associated with the Date field
• Opens a new page for showing event details:
  - Token dump and cause/effect/recovery for EMS events
  - Token dump for syslog and evlog events
Agenda

• Manageability market trends
• HP Unified Infrastructure Management
• HP NonStop Cluster Essentials
  – Overview
  – Functionality
    • Cluster configuration
    • Cluster discovery
    • Integrated health monitoring
    • Integrated alert monitoring
    • Integrated event monitoring
    • Single-click Boot
    • Virtualized configuration and control
    • Unified account management
    • Software consistency check
    • Integrated inventory reporting
• HP NonStop Cluster Performance Essentials
• Future NonStop Essentials plans
NonStop Cluster Boot Application

• Cluster Boot Application to boot NonStop and Linux servers together in correct sequence or in parallel
• Requires login to maintenance and operational interfaces
• Allows booting the cluster using a pre-defined configuration
  – Default boot configuration shipped out-of-box to power cycle all Linux servers and cold-load all NonStop servers, using all default cold-load parameters, in parallel
NonStop Cluster Boot Application
Boot configuration

• Define new boot configurations to use for subsequent boots
• A boot configuration has a sequence of steps, with each step containing parallelly executed tasks.
• A task can be:
  - BOOT to boot a server (power-cycle on Linux, cold-load on NonStop),
  - SCRIPT to execute a script on a server or on the console, or
  - DELAY to delay for a specified amount of time
• Each task can be configured with a failure action of ABORT or CONTINUE.
NonStop Cluster Boot Application
NonStop server boot parameters

• Configuration of global boot parameters for ALL NonStop servers
• Configuration of boot parameters for an INDIVIDUAL NonStop server
NonStop Cluster Boot Application

Shutdown and startup scripts

- Can exist on the console or the managed server
  - If a script is located on the console, it can be executed on the console or on the managed server
  - If a script is located on the console but is to be executed on the managed server, it will be automatically transferred (SFTP) to the managed server

- Support of both NonStop OS-based and OSS-based scripts
Agenda

• Manageability market trends
• HP Unified Infrastructure Management
• HP NonStop Cluster Essentials
  - Overview
  - Functionality
    • Cluster configuration
    • Cluster discovery
    • Integrated health monitoring
    • Integrated alert monitoring
    • Integrated event monitoring
    • Single-click Boot
    • Virtualized configuration and control
    • Unified account management
    • Software consistency check
    • Integrated inventory reporting
• HP NonStop Cluster Performance Essentials
• Future NonStop Essentials plans
<table>
<thead>
<tr>
<th>NonStop Cluster management tasks</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Virtualized configuration and control of the whole cluster</td>
</tr>
<tr>
<td>• Ability to perform all cluster management tasks without knowing the syntax for NonStop or Linux commands</td>
</tr>
<tr>
<td>• Pre-created tasks shipped out-of-box to configure and control different subsystems</td>
</tr>
<tr>
<td>• Support of command line, web-based and installed management tools</td>
</tr>
<tr>
<td>• Tasks configurable to be executed on specific server types or combinations</td>
</tr>
<tr>
<td>• Tasks able to be executed on multiple servers simultaneously</td>
</tr>
<tr>
<td>• Ability to create new tasks and categories to add to pre-created list</td>
</tr>
</tbody>
</table>
NonStop Cluster available management tasks

- Sorted into categories with many levels, to help user find the correct task easily:
  - Startup and shutdown
  - Backup and restore
  - Disk and file system
  - Process
  - Kernel
  - Network
  - Database
  - Transaction
  - Software
  - User account
  - Time sync

- Any number of tasks in a category
NonStop Cluster available management tasks

- Sorted into categories with many levels, to help user find the correct task easily:
  - Startup and shutdown
  - Backup and restore
  - Disk and file system
  - Process
  - Kernel
  - Network
  - Database
  - Transaction
  - Software
  - Hardware
  - User account
  - Time Sync
NonStop Cluster management tasks

Invocation

• Select target servers from the table
  – Only servers that can support selected task displayed
• Enter required parameters
  – Human-friendly format
  – Drop-down boxes for the parameters with limited set of values
  – Checkbox for the parameters that have Boolean (true/false) values
  – Default values already filled in, with an option to change them
• Click on “Display Optional Parameters” button to enter optional parameters
NonStop Cluster management tasks
Optional parameters

• Enable it by clicking on the check box on its immediate left, and supply the value

• For command line tasks, an optional parameter (“Use new username to log in”) always exists to prompt for a new username and password to log in to the server – as opposed to using cached one
NonStop Cluster management tasks

Execution

• Executed on all selected servers simultaneously
• Results displayed in a web-based user interface
  • Executed on all selected servers simultaneously
  • Results displayed in a web-based user interface
  • Username/password requested before execution
    • Username/password requested before execution
    • Preserved for a short period of time for the same HP SIM user for the same console, so that it does not need to be provided repeatedly
    • Can be overriden on the previous screen by selecting "Use new username to log in"
• All tools invoked via SSH (Secure Shell)
  • All tools invoked via SSH (Secure Shell)
  • All data encrypted
NonStop Cluster management tasks
Web-based and GUI-based tool support

• Most tasks invoke command line tools
• Some tasks invoke web-based tools and Graphical User Interface (GUI)-based tools, where available
• Examples:
  – For hardware management on NonStop servers, OSM Service Connection is launched
  – For hardware management on Linux servers, the System Management Homepage (SMH) is launched
  – For SQL/MX database management on NonStop servers, NSM/web is launched.
NonStop Cluster management tasks
Task configuration

• New categories and tasks can be added by the user
  – Name
  – Description
  – Task type – Command line, web application, or application
  – Invocation (number of simultaneous targets)
  – Command-line, or web URL, or application path
  – URL for task-specific help
  – Valid server types – Linux only, NonStop (OSS) only, NonStop only, console, or servers
  – Confirmation required or not

• Templates can be created to facilitate adding more tasks
NonStop Cluster management tasks
Task parameter configuration

- Any number of parameters
- Name and optional description
- Include name in command line in angular brackets where substitution is needed

Parameters types:
- Text
- List
- Boolean
- Hidden

Parameters can have:
- a default value
- a prefix
- a postfix
- an optional tag (required versus optional)
Agenda

• Manageability market trends
• HP Unified Infrastructure Management
• HP NonStop Cluster Essentials
  – Overview
  – Functionality
    • Cluster configuration
    • Cluster discovery
    • Integrated health monitoring
    • Integrated alert monitoring
    • Integrated event monitoring
    • Single-click Boot
    • Virtualized configuration and control
    • Unified account management
• HP NonStop Cluster Performance Essentials
• Future NonStop Essentials plans
NonStop Cluster Account Management Application

- Manages user, operational, and maintenance accounts on individual servers or whole cluster by one-click.
NonStop Cluster Account Management Application
Adding user/operational accounts

- Username becomes a Safeguard alias on all NonStop servers, and a Linux username on all Linux servers in the cluster.
- For NonStop accounts, add the corresponding NonStop OS username via "here" link.
- Support of all options for NonStop and Linux accounts.
NonStop Cluster Account Management Application
Adding user/operational accounts

- Username becomes a Safeguard alias on all NonStop servers, and a Linux username on all Linux servers in the cluster.

- For NonStop accounts, add the corresponding NonStop OS username via “here” link.

- Support of all options for NonStop and Linux accounts.
NonStop Cluster Account Management Application

Adding maintenance accounts

- Accounts on ServerNet switches on NonStop servers
- Accounts on MP/iLO on Linux servers
  - Support of all options
NonStop Cluster Account Management Application

Editing/deleting accounts

• Support to edit password and settings
• Support to delete accounts
• When editing/deleting NonStop user/operational accounts, support of user name as alias or NonStop OS user name
NonStop Cluster Account Management Application

Editing/deleting accounts

• Support to edit password and settings
• Support to delete accounts
• When editing/deleting NonStop user/operational accounts, support of user name as alias or NonStop OS user name
Agenda

• Manageability market trends
• HP Unified Infrastructure Management
• HP NonStop Cluster Essentials
  – Overview
  – Functionality
    • Cluster configuration
    • Cluster discovery
    • Integrated health monitoring
    • Integrated alert monitoring
    • Integrated event monitoring
    • Single-click Boot
    • Virtualized configuration and control
    • Unified account management
    • Software consistency check
    • Integrated inventory reporting
• HP NonStop Cluster Performance Essentials
• Future NonStop Essentials plans
Software consistency check

• Check to ensure:
  – Same product versions on all NonStop servers in the cluster
  – Same product versions on all Linux servers in the cluster
• Displayed in the SW column in the All Systems, All Clusters, and NonStop Clusters table views
• Displayed on the NonStop Cluster home page
• Updated when periodic software version check is run every 24 hours
• Updated when a software version check is run on demand
Software consistency check
Fetch and report

• Fetch:
  – Installed product versions fetched from servers in parallel
  – NonStop product versions fetched from DSM/SCM repository
  – Linux product versions fetched via rpm query command

• Report:
  – Inconsistent products reported at the top of the first table
  – Actual inconsistent product versions reported as one table for each product
  – Large tables displayed in multiple pages
Software consistency check

Product exclusion

- By default, all installed product versions checked for consistency
- Option to exclude specific products from product version comparison, for a specific cluster

### NonStop Cluster Select Excluded Products

Select the products you want excluded from the software consistency check on NS-1.

[Hide excluded products | Show all products]

<table>
<thead>
<tr>
<th>Consistent</th>
<th>Server Type</th>
<th>Software</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NonStop</td>
<td>T0801 SSH Server</td>
<td>inconsistent</td>
</tr>
<tr>
<td></td>
<td>Linux</td>
<td>sblim-cmpi-sysfs</td>
<td>inconsistent</td>
</tr>
<tr>
<td></td>
<td>Linux</td>
<td>ruby-docs</td>
<td>inconsistent</td>
</tr>
<tr>
<td></td>
<td>Linux</td>
<td>pciutils</td>
<td>2.1.99.test8-3.2</td>
</tr>
<tr>
<td></td>
<td>Linux</td>
<td>passwd</td>
<td>0.68-10.1</td>
</tr>
<tr>
<td></td>
<td>Linux</td>
<td>pam_passwdqc</td>
<td>0.7.5-2</td>
</tr>
</tbody>
</table>

[Ok] [Cancel]
Agenda

• Manageability market trends
• HP Unified Infrastructure Management
• HP NonStop Cluster Essentials
  – Overview
  – Functionality
    • Cluster configuration
    • Cluster discovery
    • Integrated health monitoring
    • Integrated alert monitoring
    • Integrated event monitoring
    • Single-click Boot
    • Virtualized configuration and control
    • Unified account management
    • Software consistency check
    • Integrated inventory reporting
• HP NonStop Cluster Performance Essentials
• Future NonStop Essentials plans
Integrated inventory reporting

- Inventory reporting across all servers in cluster
- Historical analysis
- High-level and detailed reports
Agenda

• Manageability market trends
• HP Unified Infrastructure Management
• HP NonStop Cluster Essentials
  – Overview
  – Functionality
    • Cluster configuration
    • Cluster discovery
    • Integrated health monitoring
    • Integrated alert monitoring
    • Integrated event monitoring
    • Single-click Boot
    • Virtualized configuration and control
    • Unified account management
    • Software consistency check
    • Integrated inventory reporting

• HP NonStop Cluster Performance Essentials
• Future NonStop Essentials plans
HP NonStop Cluster Performance Essentials

- Integrated view to monitor real-time performance issues across the cluster
- Drill-down to discover performance bottlenecks
- Performance trend displays
Agenda

• Manageability market trends
• HP Unified Infrastructure Management
• HP NonStop Cluster Essentials
  – Overview
  – Functionality
    • Cluster configuration
    • Cluster discovery
    • Integrated health monitoring
    • Integrated alert monitoring
    • Integrated event monitoring
    • Single-click Boot
    • Virtualized configuration and control
    • Unified account management
    • Software consistency check
    • Integrated inventory reporting
• HP NonStop Cluster Performance Essentials
• Future NonStop Essentials plans
Future NonStop Essentials plans

- NonStop Cluster Essentials update to support NonStop Blades servers, NonStop S-Series servers, HP SIM 5.2, Microsoft SQL Server 2005 Express, Microsoft Vista, and Microsoft Internet Explorer 7
- NonStop I/O Essentials to manage NonStop Blades I/O subsystem seamlessly
- NonStop Software Essentials to perform integrated software management for NonStop servers
- Storage Essentials support for NonStop-attached storage
- Service Essentials Remote Support Pack support for NonStop for remote support

All future plans are subject to change without notice
For more information...

- [www.hp.com/go/nonstop/clusteressentials](http://www.hp.com/go/nonstop/clusteressentials)
- [www.hp.com/go/nonstop/performanceessentials](http://www.hp.com/go/nonstop/performanceessentials)
- [www.hp.com/go/nonstop/operationsmanagement](http://www.hp.com/go/nonstop/operationsmanagement)