

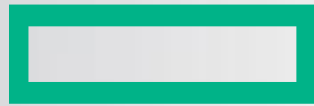


YOUR INDEPENDENT HPE SOFTWARE  
COMMUNITY



**Drive Value with NNMi and NA with Integrations and Automation**  
**April 26, 2016**

# Brought to you by



**Hewlett Packard  
Enterprise**



# Hosted By



Jon Kies  
Product Marketing  
Hewlett Packard Enterprise



# Today's Speakers



Joe Reves

Product Manager - Network Management  
Hewlett Packard Enterprise



Brian Kaplan

Product Manager - Network Automation  
Hewlett Packard Enterprise



# Housekeeping

- This “LIVE” session is being recorded  
Recordings are available to all Vivit members
- Session Q&A:  
Please type questions in the Questions Pane



# Webinar Control Panel

Toggle View Window between  
Full screen/window mode.

Questions





**Hewlett Packard  
Enterprise**

# **Network Management from HPE Software**

**Jon Kies, Product Marketing**

**April 2016**



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# Agenda

- Evolving role of the network management team
- Products and integrations
- Sample Use Cases
- Wrap up

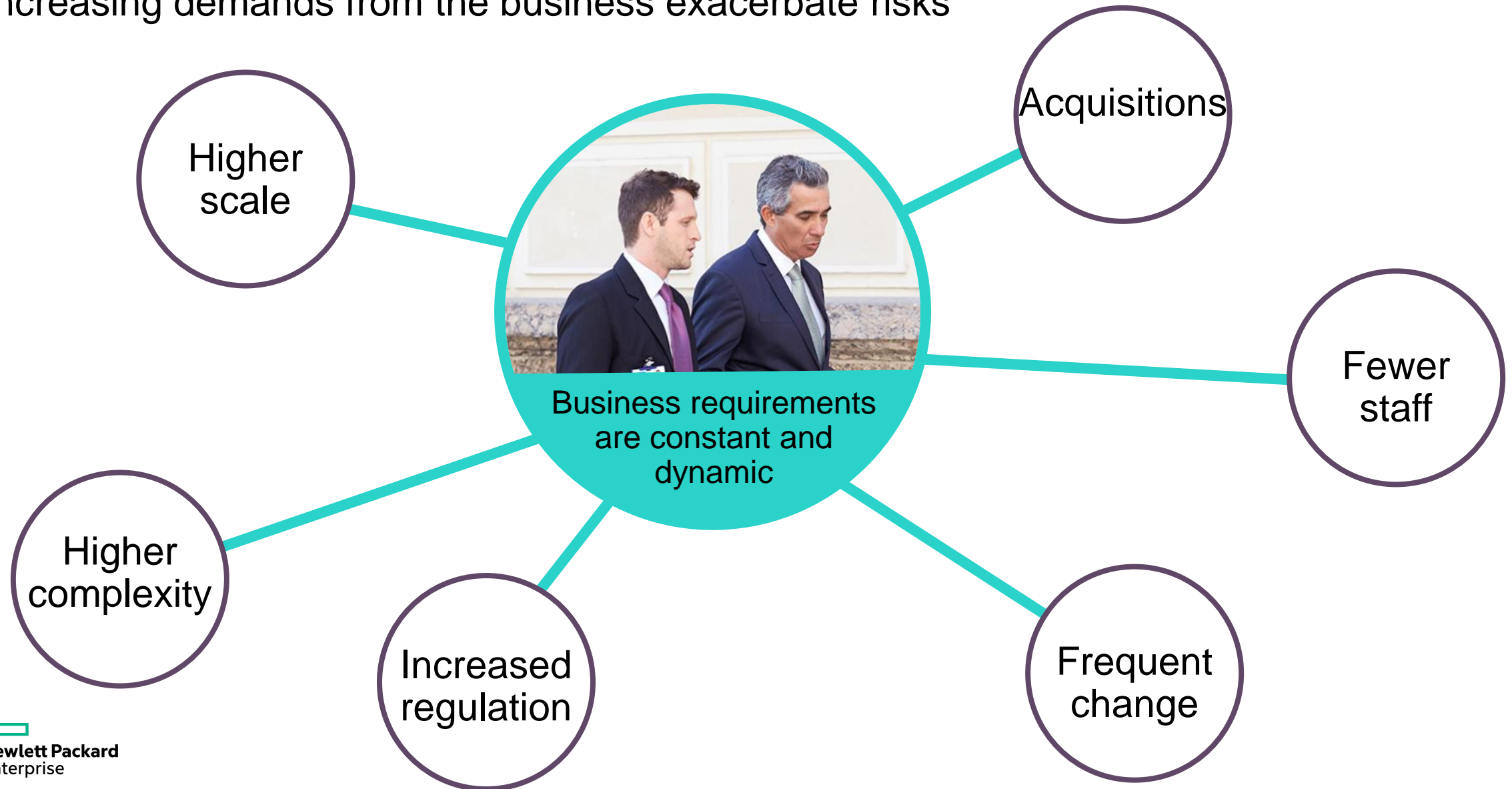
A photograph of a modern office interior with large windows and a teal border at the top. Three people are sitting in black chairs, engaged in a discussion. The floor is highly reflective, showing the people and the chairs. The background shows a view of a green landscape through the windows.

# A partner to the business

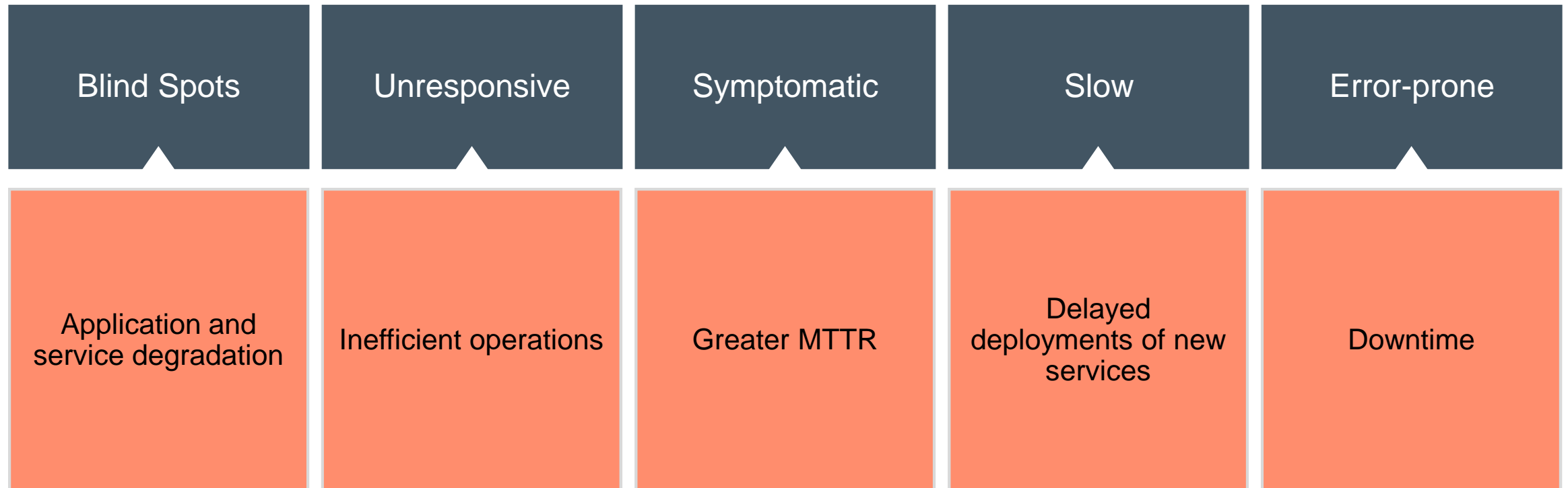
The evolving role of the  
network management team

# Network team challenges

Increasing demands from the business exacerbate risks



# Network management systems that operate in a silo can't deliver business agility



# Network management systems that operate in a silo can't deliver business agility

Blind Spots

Unresponsive

Symptomatic

Slow

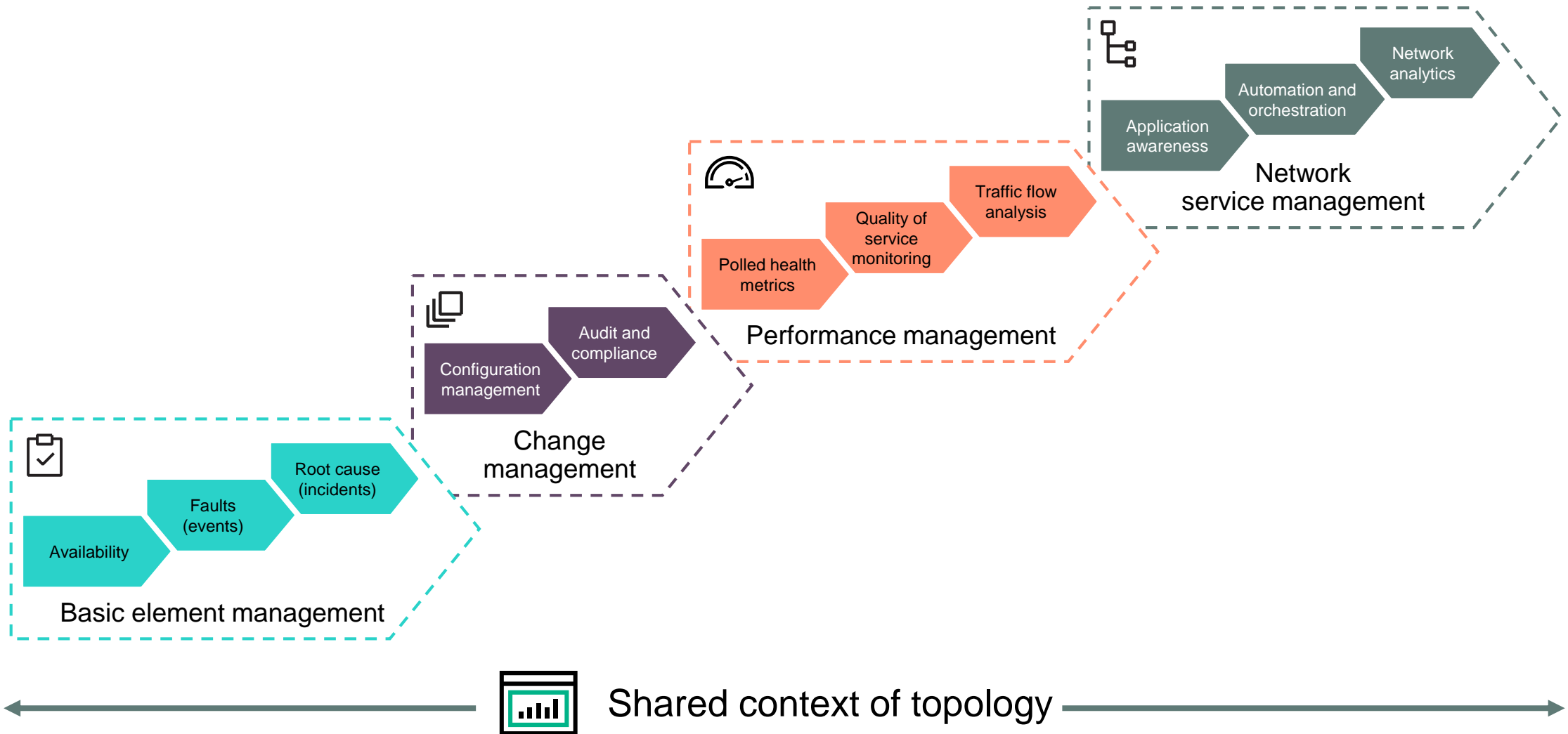
Error-prone

  
Lost business  
opportunities

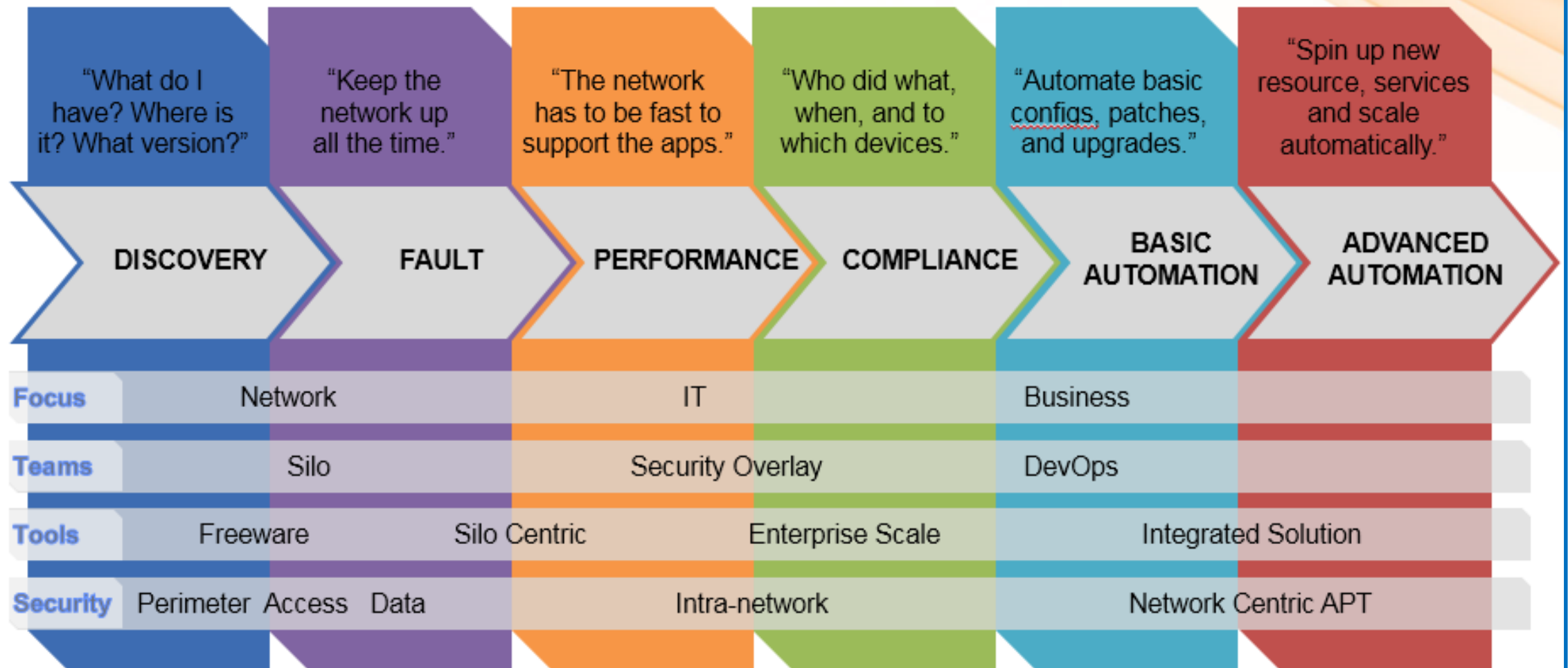
Higher  
operational costs  


  
Higher  
management risk

# Network operations capabilities



# Network Service Evolution Model



## Business Requirements Cited as Driver for New Tools

- Many times corporate initiatives such as compliance, security, IT financial management, or new business initiative drove the need for new network tools and integrations with non-network tools and systems.

"The network admin tools are fairly good at managing the network and doing triage. But with a converging IT culture and the need for transparency and alignment to the business, the admin tools just couldn't provide the needed functionality. That was the tipping point for new tools."

"Just think about change management, asset management and compliance reporting. Your old network ops tools could not provide the data we needed. So new tools were required to meet the business' objectives."

“Often we bought tools just as we needed them. It was too hard to rip and replace so we ended up with a lot of tools. But then, ***you realize you have a lot of point tools and they don’t integrate with each other.*** You can’t get a full view and have to look at a lot of different dashboards. The network team can manage to a point but then ***you realize the network info has to integrate with the operations tools, help desk solutions, security and others.*** Then you wished you had thought ahead and bought a tool that would do that down the road.”



# Product capabilities

Network Node Manager i  
Network Automation

# Network Node Manager i 10.10

## Fault and performance monitoring

- Broadest range of devices and protocols including virtual
- Scalability to meet the largest environments



### Community

- 25 node Perpetual license
- No Global Node Manager
- 3 concurrent Users
- No Integrations
- Basic Fault and capacity



### Premium

- Physical / virtual discovery
- Fault Management
- Incident generation
- Availability and status
- Performance metric reporting
- Quality Assurance
- All Integrations



### Ultimate

*Premium +*

- Traffic analysis
- IP Telephony
- IP Multicast
- MPLS
- Advanced Diagnostics

# Network Automation 10.11

## Change, configuration, and compliance

- Prove accountability by meeting and reporting on SLAs
- Reduce liability and risk by delivering compliant and secure networks



### Community

- 60 Day Trial



### Premium

- Discovery & store device configurations
- Create & deploy configuration changes
- Enforce workflow & approvals



### Ultimate

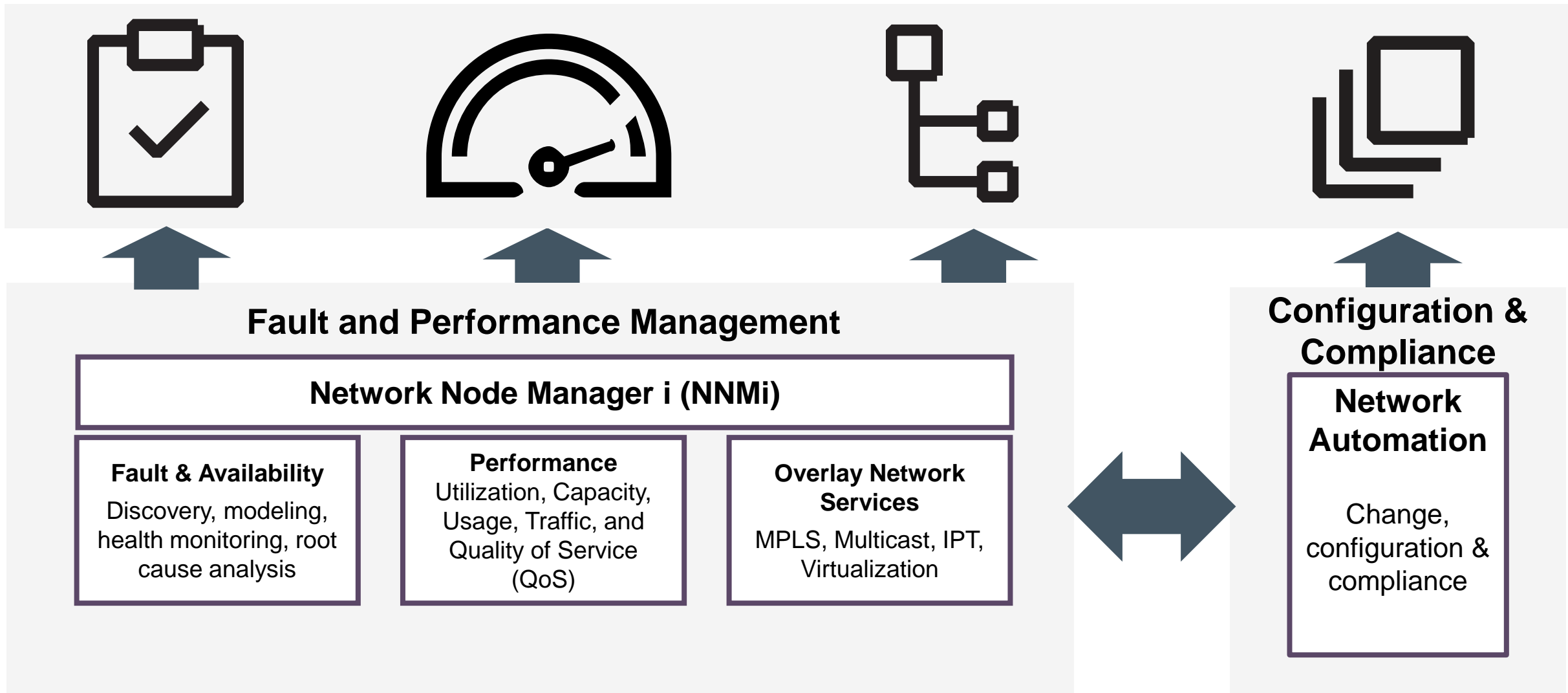
*Premium +*

- Define compliance policies
- Detect violations in real time and auto-remediate
- Audit reports



# Polling Question

# HPE Network Management: Monitoring and Automation





# Integrations

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# Integration mechanisms

## Inbound

- SSO (HPE Software integrations)
- Contextual Cross-Launch
- Trap Reception
- URL Addressable Panels
- CLI Utilities
- Device Seeding / Provisioning
- Operations Orchestration Content
- Configuration / Compliance status
- Discrete API/SDK Interfaces

## Outbound

- SSO (HPE Software Integrations)
- Contextual Cross-Launch
- CSV Export
- Incident Forwarding /Enrichment
- CLI Utilities
- Performance Metrics Analytics
- Automation (Operations Orchestration)
- Run-time Topology Export
- CI Synchronization

Installation and Operation Coexistence

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# NNMi and Network Automation Integration Content

## API / SDK

- Nodes / Interfaces
- Subnets / Addresses
- Topology
- Incident Management
- Outages
- Custom properties
- Security / Group mgmt
- SNMP credential synchronization
- Managing Scheduled Tasks
- Retrieving device data / content
- Create, read, update, delete operations – devices, device content
- User management, user and group permissions

## CLI Utilities

- Functionally identical to API/SDK
- Discrete utilities for scripting / RBA
- Enforces security model
- Bulk operations support

## North-bound Interface

- Used to forward incidents or traps
- Registration model
- Enrichment support
- NNMi device synchronization
- SA server topology synchronization
- Outage Management
- Credential updates

## Cross-launch / URL Access

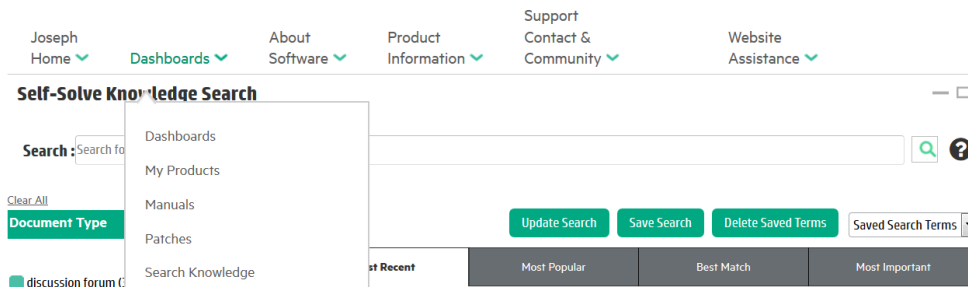
- Contextual cross-launch
- URL addressable panels



# Where are Integrations documented?

Hewlett Packard Enterprise Self-Solve Knowledge Portal

- Requires an HPE Passport Account
- Dashboards > Manuals
  - Select the “manuals” Document Type
  - Select the “network node manager” Product



## Self-Solve Knowledge Search

Search:

Clear All

Document Type

☒ manuals (438)

Products

- ☒ network node manager (438)
- ☐ network automation (21)
- ☐ unified communication... (11)
- ☐ automated network man... (5)
- ☐ application performan... (3)
- ☐ operations manager fo... (3)
- ☐ operations manager i (3)

Version

Workflow Status

Security Level

Operating System

Language

Update Search Save Search Delete Saved Terms Saved Search Terms

Most Recent Most Popular Best Match Most Important

We found 438 results

- [1. 10.10 NNMI Integration Guide: ArcSight Logger](#)  
doc release date: nov 24, 2015  
network node manager 10.10;  
manuals customer published  
Created:2015-11-13 Modified:2015-11-24  
KM01941657 nnmi\_integration\_arcsight\_logger\_1010.pdf
- [2. 10.10 NNMI Integration Guide: RAMS](#)  
doc release date: nov 24, 2015  
network node manager 10.10;  
manuals customer published  
Created:2015-11-13 Modified:2015-11-24  
KM01941665 nnmi\_integration\_rams\_1010.pdf
- [3. 10.10 NNMI Integration Guide: SiteScope](#)  
doc release date: nov 24, 2015  
network node manager 10.10;  
manuals customer published  
Created:2015-11-13 Modified:2015-11-24  
KM01941666 nnmi\_integration\_sitescope\_1010.pdf
- [4. 10.10 NNMI Integration Guide: Asset Manager](#)  
doc release date: nov 24, 2015  
network node manager 10.10;  
manuals customer published  
Created:2015-11-13 Modified:2015-11-24  
KM01941658 nnmi\_integration\_asset\_manager\_1010.pdf

# Integration Configuration

- Specific integrations are configured in the Integration Module workspace
- Additional configuration is required for facilities like SSO
- Configuration on the peer system is also often required to be coordinated
- The Integration Guides including testing and troubleshooting procedures, as well as supported configurations
- All integrations are available at the Premium tier; some content is only available through Ultimate product features.
- SDK documentation is delivered with the product at both the Premium and Ultimate tier
  - Linux: /opt/OV/doc
  - Windows: %NnmInstallDir%\doc

**HP Network Node Manager i**

- Dashboards
- Incident Management
- Topology Maps
- Monitoring
- Troubleshooting
- Inventory
- Management Mode
- Incident Browsing
- Performance Analysis
- Traffic Analysis
- Quality Assurance
- Integration Module Configuration
  - HP Arcsight...
  - HP BSM/UCMDB Topology...
  - CiscoWorks LMS...
  - HP IMC...
  - HP NA...**
  - Netcool...
  - HPOM...
  - HP RAMS MPLS WAN...
  - HP SIM...
  - HP SiteScope System Metrics...
  - Northbound Interface...

### HP NNMi-HP NA Integration Configuration

Enable Integration: ☒ [Help](#)

NNMi SSL: ☐

NNMi Host:

NNMi User:

NNMi Password:

NA SSL: ☐

NA Host:

NA Port:

NA User:

NA Password:

Topology Filter Node Group:

Topology Synchronization Interval (hrs):

Discover Device Drivers in NA: ☒

Map NNMi security groups to NA partitions: ☒

NA Connection Check Interval (hrs):

Minimum NNMi Role for Analysis Pane Data:

Minimum Object Access Privilege for Analysis Pane Data:

[Submit](#) [Cancel](#)

# Integrations extend the value

- **Network Node Manager i and Network Automation**

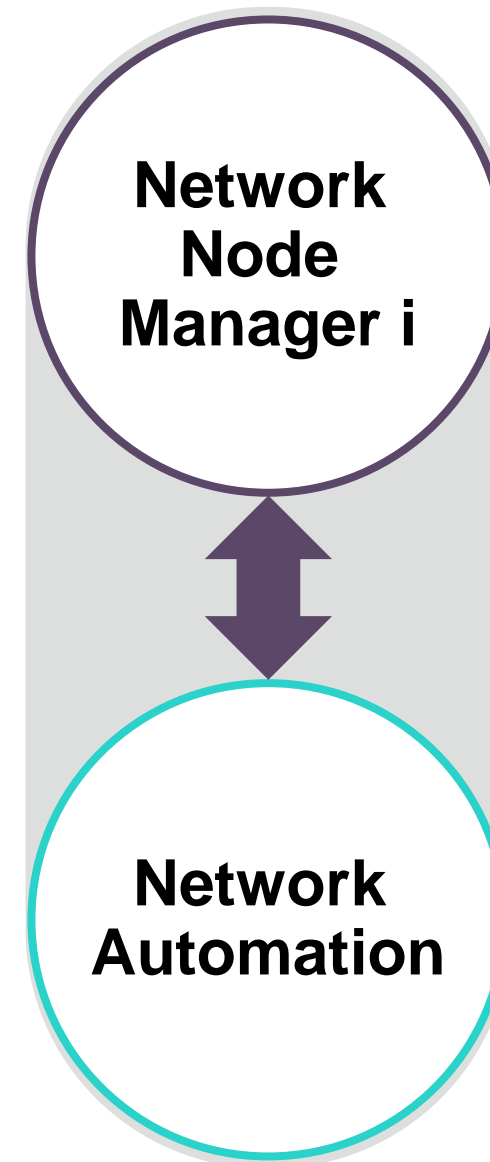
- **High level of integration OOB**

- **Reduce administrative overhead**

- Inventory synchronization
    - Designate out of service for devices undergoing change activity
    - Auto-propagate changed community strings to NNMi
    - Single Sign on

- **Reduce MTTR**

- Analysis Pane Configuration, Change Data, Compliance
    - Alerting on duplex & speed mismatch
    - From NNMi launch and access devices
    - Configuration differences / History
    - NA device policy compliance report



# NNMi Functionality: NNMi > NA Integration

- Supports a variety of deployment architectures
  - Simple NNMi/NA instance
  - Multiple standalone NA's to single NNMi
  - NNMi GNM to individual standalone NA's
  - NNMi GNM to NA Horizontal Scalability
- SSO and secure communications channel
- Inventory Synchronization
  - Filtered inventory
  - Security group to Partition mapping
- Nodes adds and deleted
  - Rules based add/delete, plus periodic synchronization
- Cross-launch of NA Console pages
- Triggered NA diagnostics from NNMi
- Identify mismatched Layer 2 connection states
- NA Configuration / Compliance information integrated into NNMi Analysis panes and Dashboards

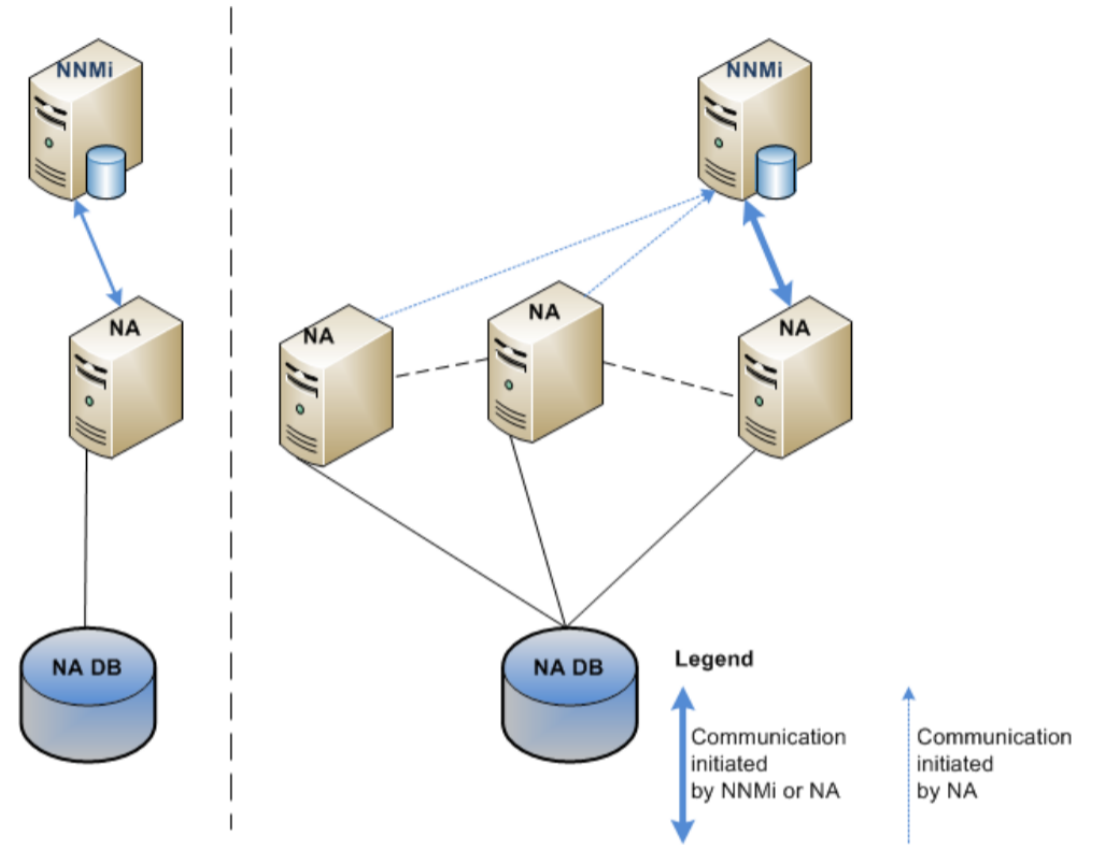
The screenshot displays three overlapping panels from the NNMi interface:

- History of Node Configuration:** A table with columns: Create Date, Changed By, Comments, and Actions. It lists configuration changes with timestamps, user names (admin, Doug\_auto, ntcoper1\_auto), and comments like "Rerun Task: for demo see Doug Grumann".
- Node Policy Compliance:** A table with columns: Policy Name, In Compliance, Last Checked Date, and Actions. It shows two policies: "Example Demo Policy" and "NSA Router Security Best Practices", both marked as "No" in compliance.
- Node Configuration:** A text area showing configuration details, including version 12.4, service timestamps, and a log of the last configuration change.

# NA Functionality: NNMi > NA Integration

- Cross-launch of NNMi Console pages
- Trap forwarding to NNMi
- Triggered NNMi node configuration polling
- Scheduled outage synchronization
- Propagate device credential changes to NNMi
- NA Configuration / Compliance information integrated into NNMi Analysis panes and Dashboards
- Configurable event rules

Figure 1 Example Deployment Architectures: One NNMi Management Server to One NA Core



# Integrations extend the value

## – Robust integrations from HPE

### – Operations Orchestration

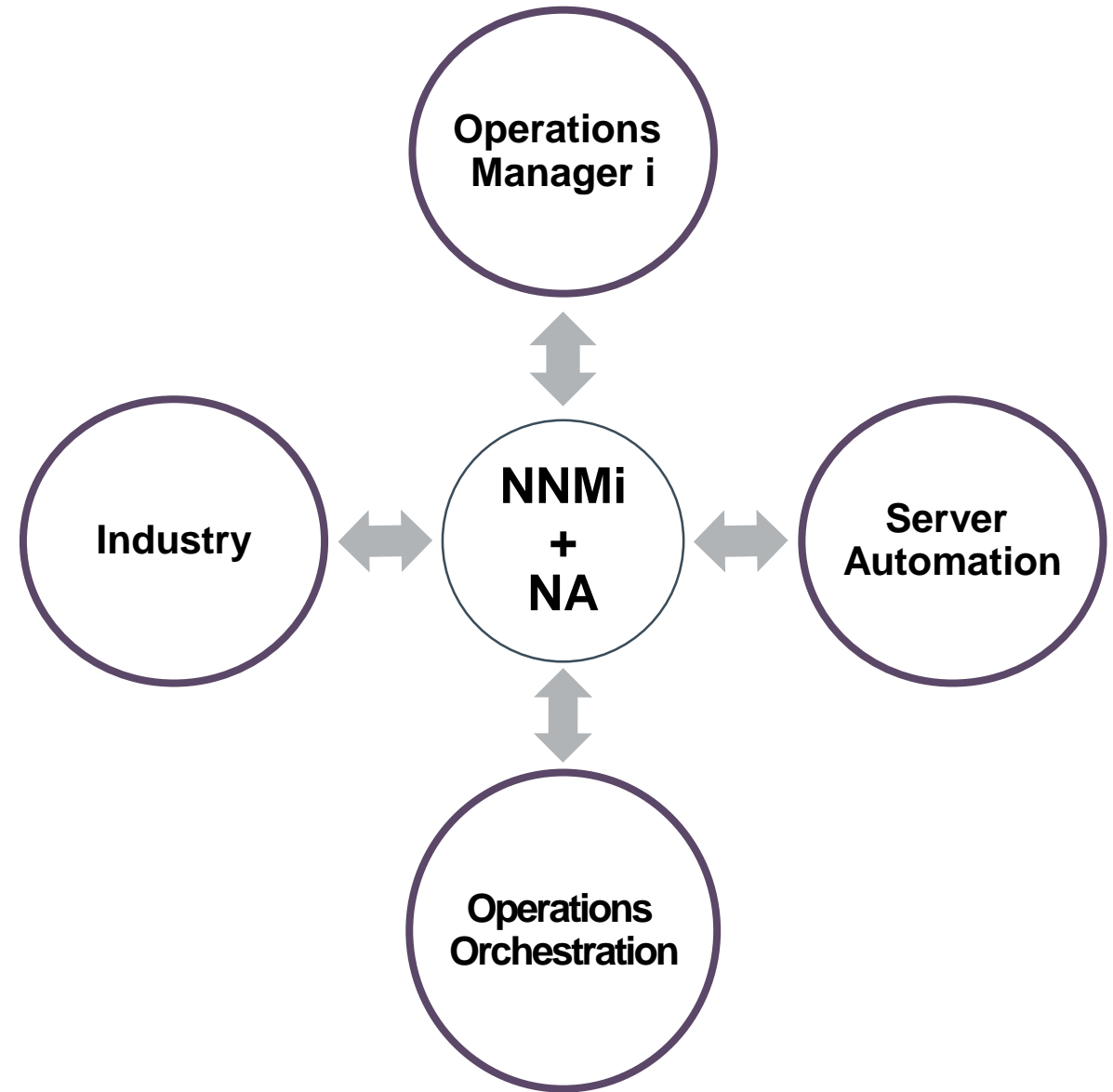
- Integration with HPE and third-party change and incident management tools, etc.
- End-to-end provisioning workflow and health checks
- Triage and troubleshooting using NA data

### – Server Automation

- Automatically discovered relationships between servers, network devices and VLANs
- View the consolidated changes for all infrastructure behind an application

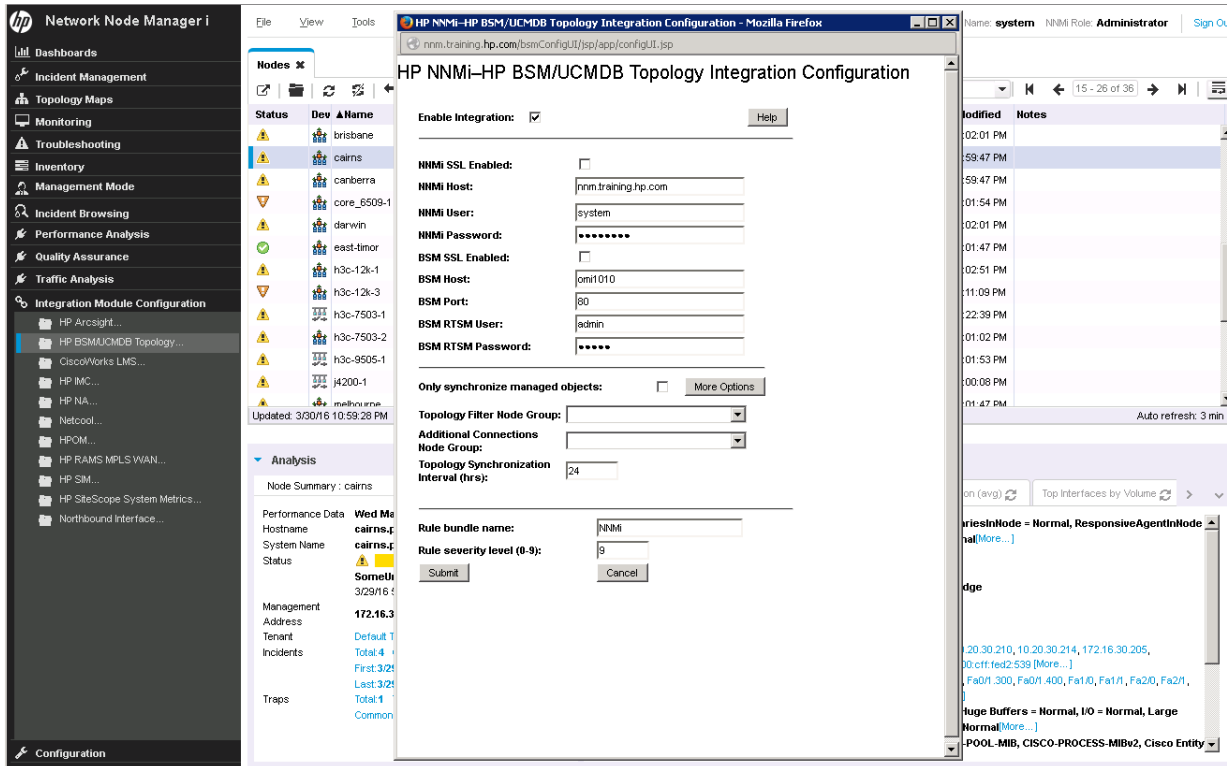
### – Industry

- RESTful API supports orchestration engines

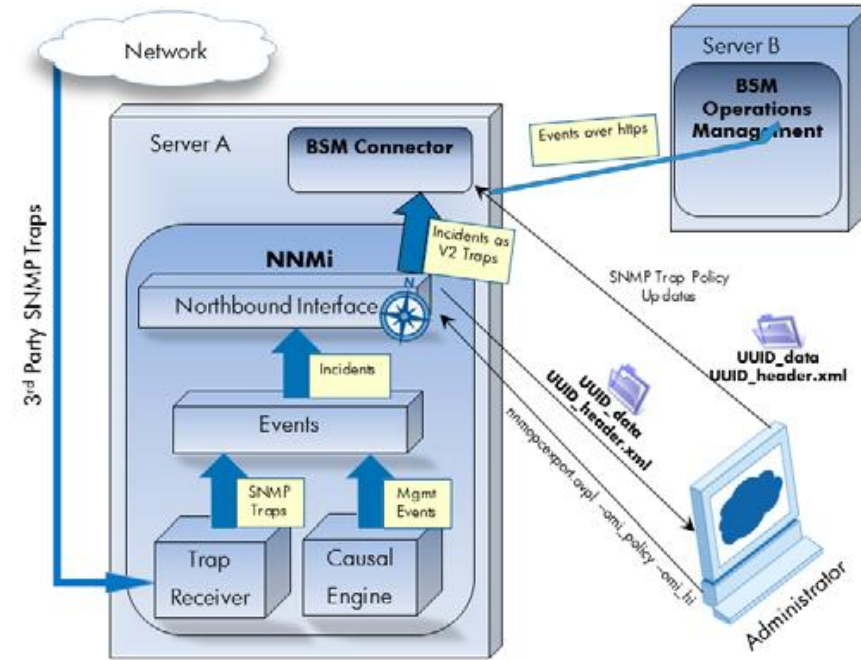


# HP Operations Bridge Integration

## Topology Synchronization with Run-Time Service Model



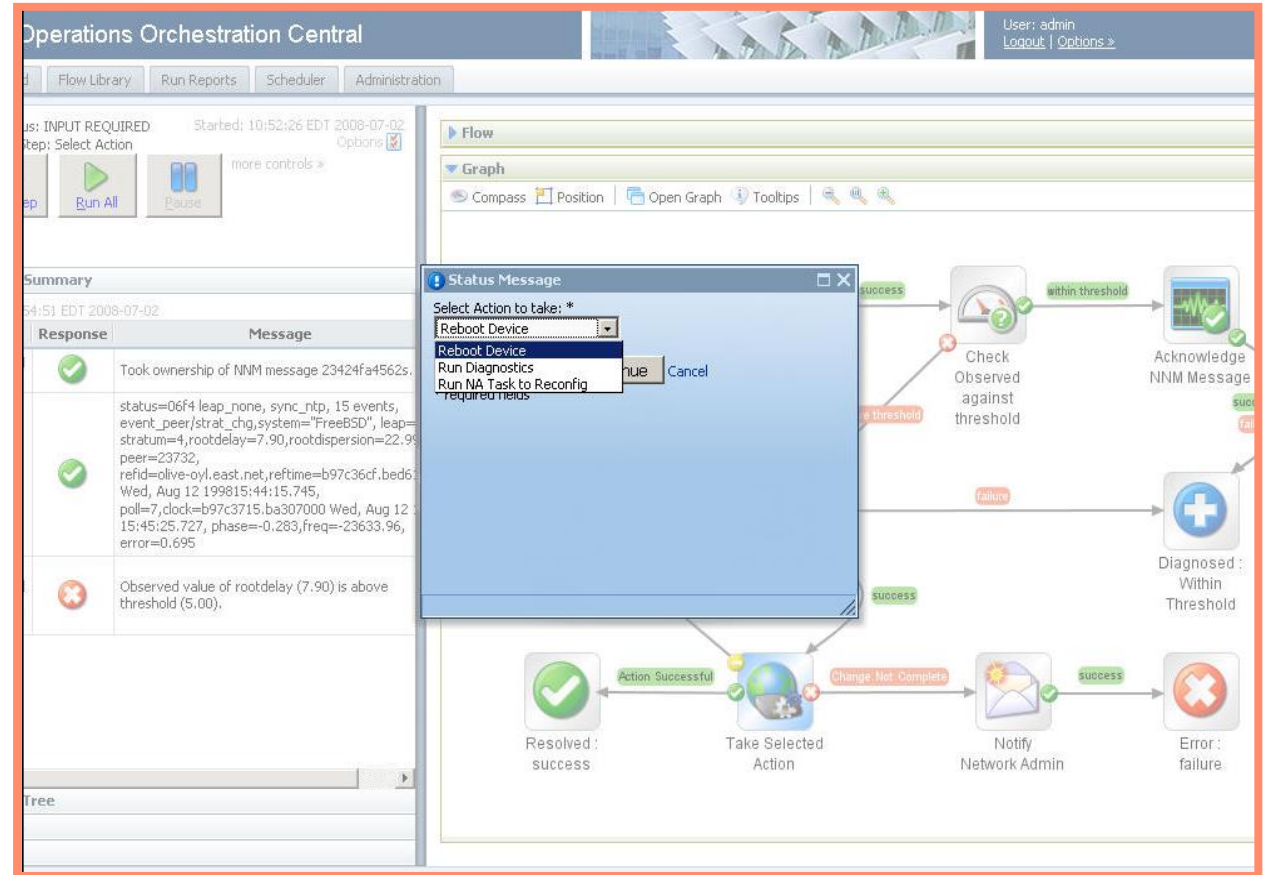
## NNMi to OMi Event Consolidation



Requires the optional BSM Connector component download

# Network Automation & Operations Orchestration

- **Automated change management**
  - Triggers NA to perform a configuration task via an approved helpdesk ticket
- **End-to-end provisioning workflow**
  - Execute a flow that provisions web app and firewall, then brings it under monitoring
- **Roll back to previous configuration**
  - Launch flow that prompts user for device IP(s) and then reads NAS data to roll back device to previous configuration
- **Triage & troubleshooting using NA data**
  - Perform diagnostics and kick-off pre-defined remediations from an NNMi alert
- **NAS Tunnel Provisioning**
  - Quickly set up and test VPN tunnels – no VPN specialist required



# Network Automation and Server Automation

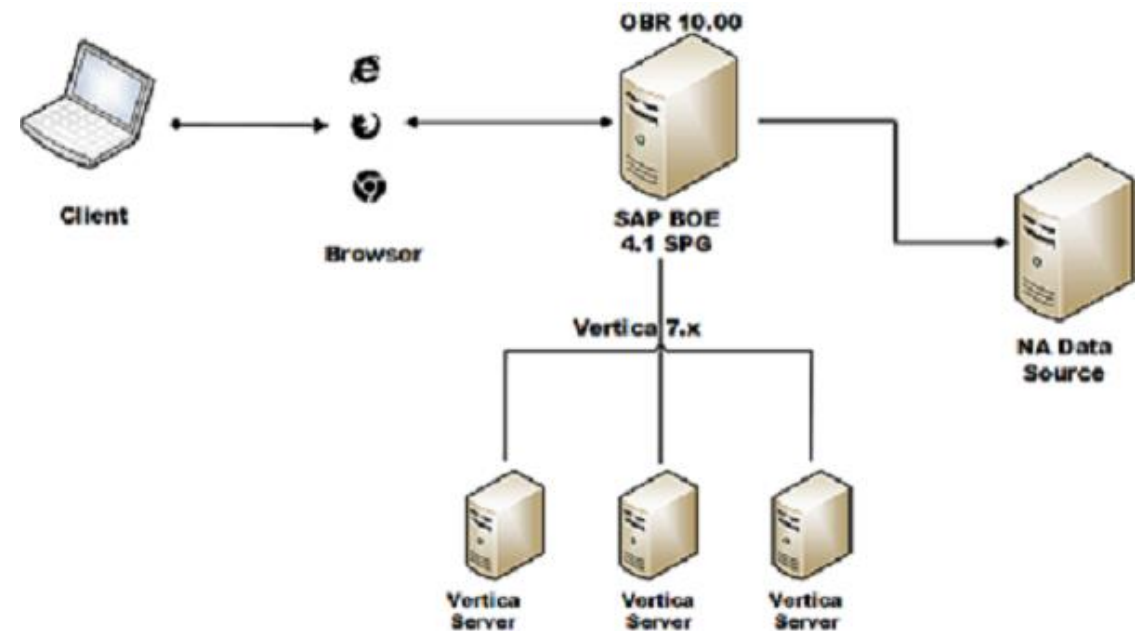
The screenshot displays the HP Network Automation and Server Automation interface, which is divided into three main sections:

- Left Panel (Navigation):** Contains a search bar, a workspace section with links to 'Current Device' (Switch), 'Current Device Group', 'Inventory', 'My Favorites', and 'My Settings'. A 'Switch' device is selected, and a menu is open showing options like 'Device Detail', 'SingleView', 'Current Configuration', 'Configuration Changes', 'Diagnostics', 'Device Tasks', 'Device Events', 'Software Audit Trail', 'Telnet/SSH Sessions', 'Device Home', 'ACLs', 'Interfaces', 'Managed IP Addresses', 'IP Addresses', 'MAC Addresses', 'VLANs', 'Modules', 'Software Upgrade Recommendation', and 'Servers' (highlighted with a blue circle).
- Center Panel (Property Page):** Displays the configuration details for the selected switch. The 'Property Page' shows a table of properties and values for the device 'co140.pr4.opsware.com' (ID 10001).

Property	Value
Name	co140.pr4.opsware.com
ID	10001
Users	0
1 Min Load Average	2.81
5 Min Load Average	0.68
15 Min Load Average	0.25
Free Memory	25,694,208 bytes
Total Memory	2,147,483,647 bytes
Swap Used	158,613,504 bytes
Swap Total	2,089,209,856 bytes
Swap In	5,120 bytes/s
Swap Out	0 bytes/s
Interfaces	2
File Systems	3
- Right Panel (Network View):** Displays a network diagram showing the topology of the network, including various devices and their connections.

# Network Automation to Operations Bridge Reporter

- Provides network domain and cross domain reporting
- Leverages topological and relationship context
- Content packs provide the following:
  - Data Models: Data tables, views, and projections that are created in the OBR database
  - Extract, Transform, and Load (ETL) Definitions: ETL definition files for the data miner.
  - Reports and Dashboards: HP-created operational, tactical and strategic reports and dashboards on the data center operational data
  - Data Management Jobs: Data management and transformation jobs
- Network Automation content pack available on HPE Live Network
- NA Universe includes:
  - Device and device group information
  - User and user group information
  - Configuration policies and rules



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# NMC supported integrations

## HPE Portfolio

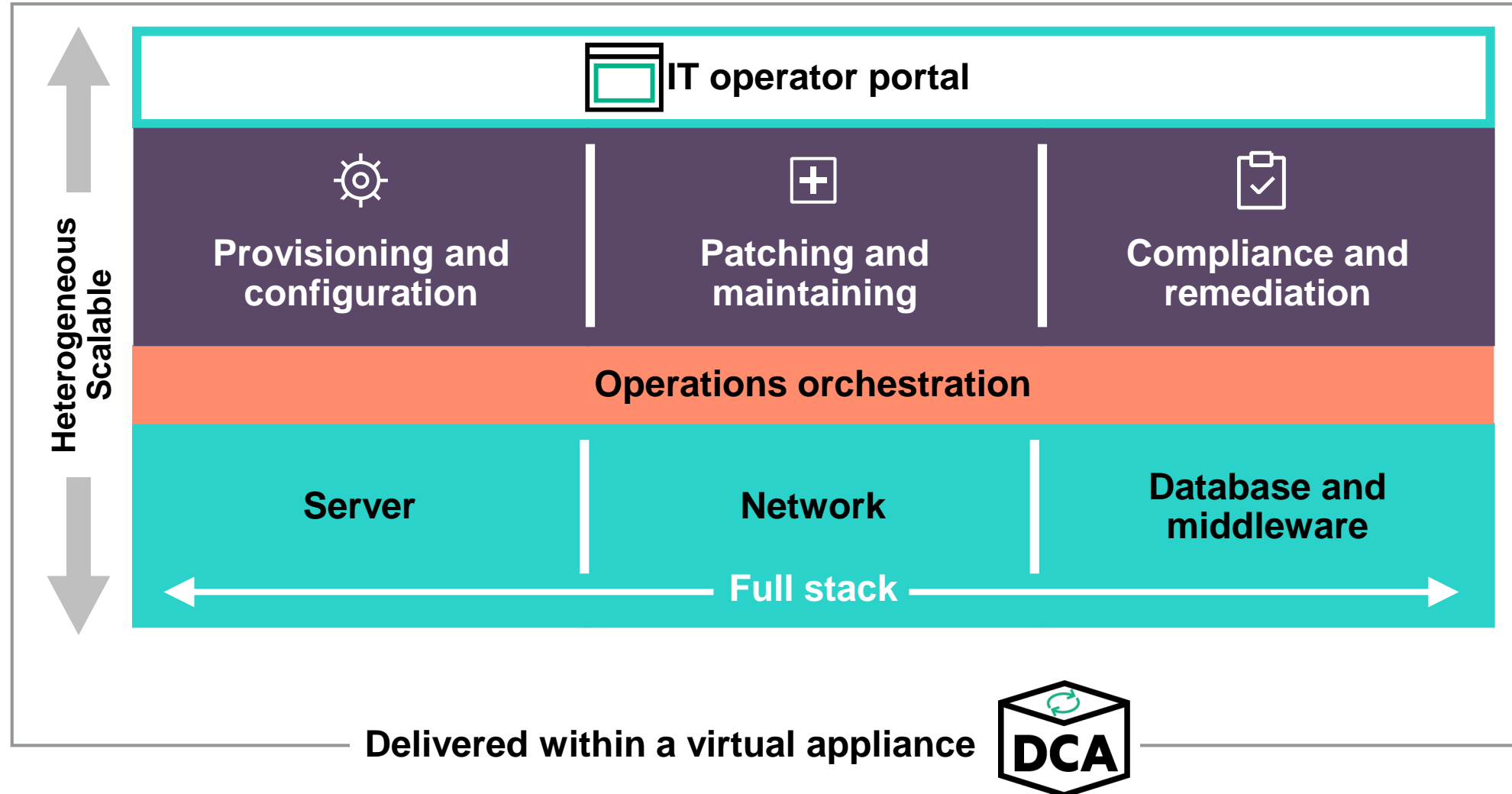
- Network Automation / NNMi
- Operations Manager for UNIX / Windows / OMi
- Real User Monitor
- Universal CMDB
- Operations Bridge Reporter (previously SHR)
- ArcSight Logger
- APM (BSM)
- SiteScope
- Operations Analytics (csv export/import)
- Server Automation
- Asset Manager
- Operations Orchestration Content
- HP Advanced TeMIP NNM Integration (ATNI)
- Intelligent Management Center
- System Insight Manager (ESS)

## Industry products

- IBM Tivoli Netcool OMNIbus
- IT Business Analytics (formerly IT XS)
- nGenius Performance Manager
- Packet Design Route Analytics Management



# HPE Data Center Automation (DCA): solution overview



# Why customers choose HPE

Integrated solutions portfolio

Proven track record with strong references

E2E multi-vendor device management for physical and virtual devices

Industry-leading scalability

Continuous innovation and product leadership



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