



The Importance of Analytics in Storage Management

February 16, 2016

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Hosted By:



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Arizona Chapter Leader



Today's Speakers:



Kara McMillan
Product Manager Storage Management
Hewlett Packard Enterprise



Vijay Ram S
Functional Architect
HPE Software Storage Management
Hewlett Packard Enterprise



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- 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

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Questions



Agenda and speakers

Agenda

- Storage Management and Analytics
- Storage Operations Manager Analytics
- SOM 10.10 Analytics demo
- Call to action
- Q&A



Kara McMillan
Product Manager
HPE Software Storage
Management

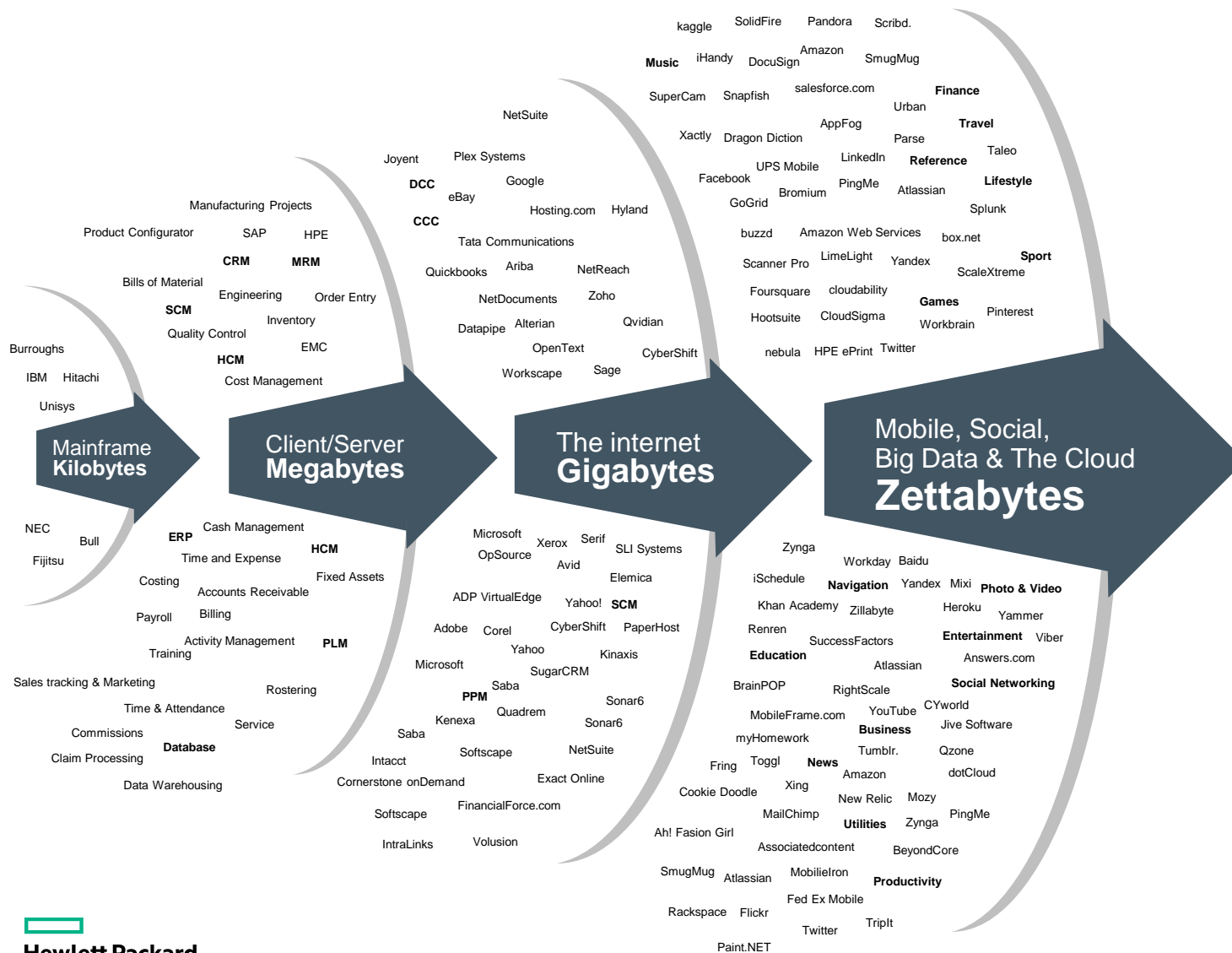


Vijay Ram S
Functional Architect
HPE Software Storage
Management



Storage Management and Analytics

Our world is data rich



Every 60 seconds



98,000+ tweets



695,000 status updates



11 million instant messages



698,445 Google searches



168 million+ emails sent



1,820TB of data created

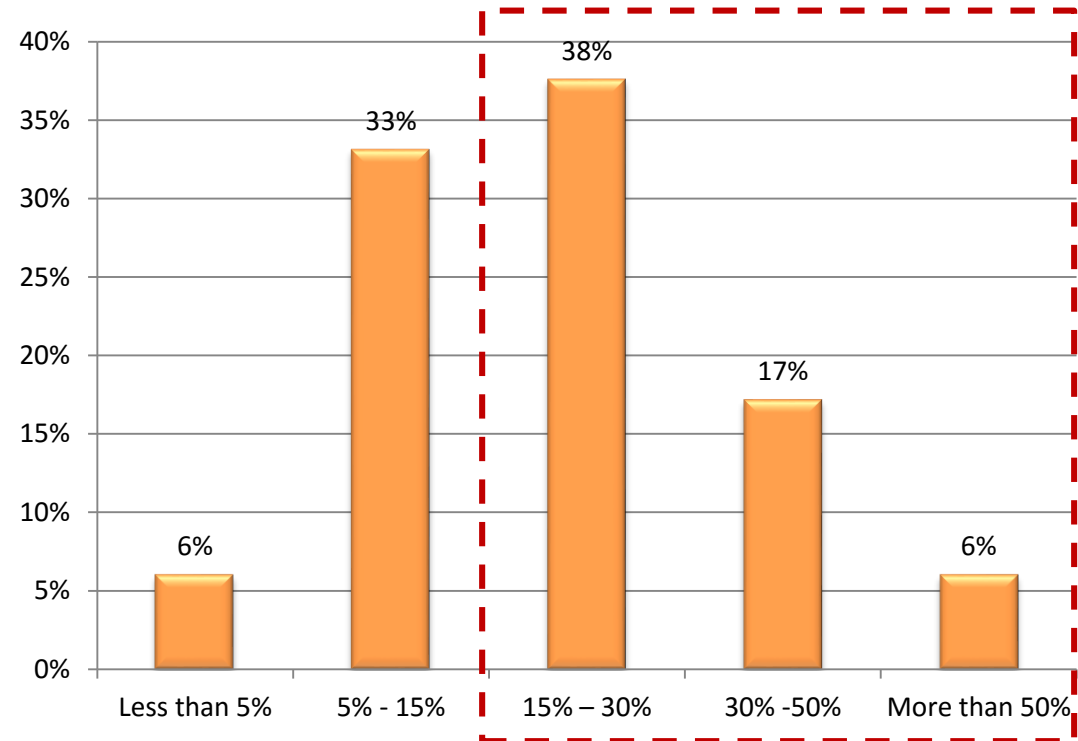


217 new mobile web users

Yottabytes

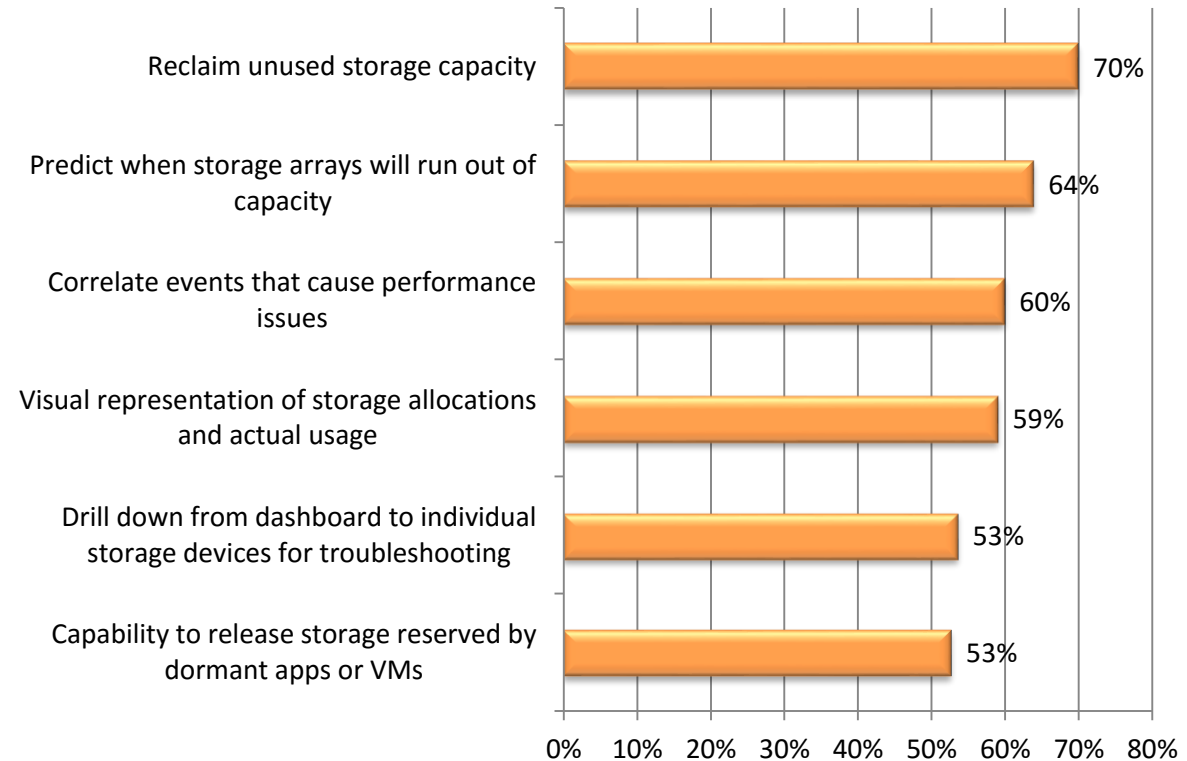
More than Half Spent 15% or More of Their IT Budget on Storage

Approximately what percentage of the IT budget is spent on storage?



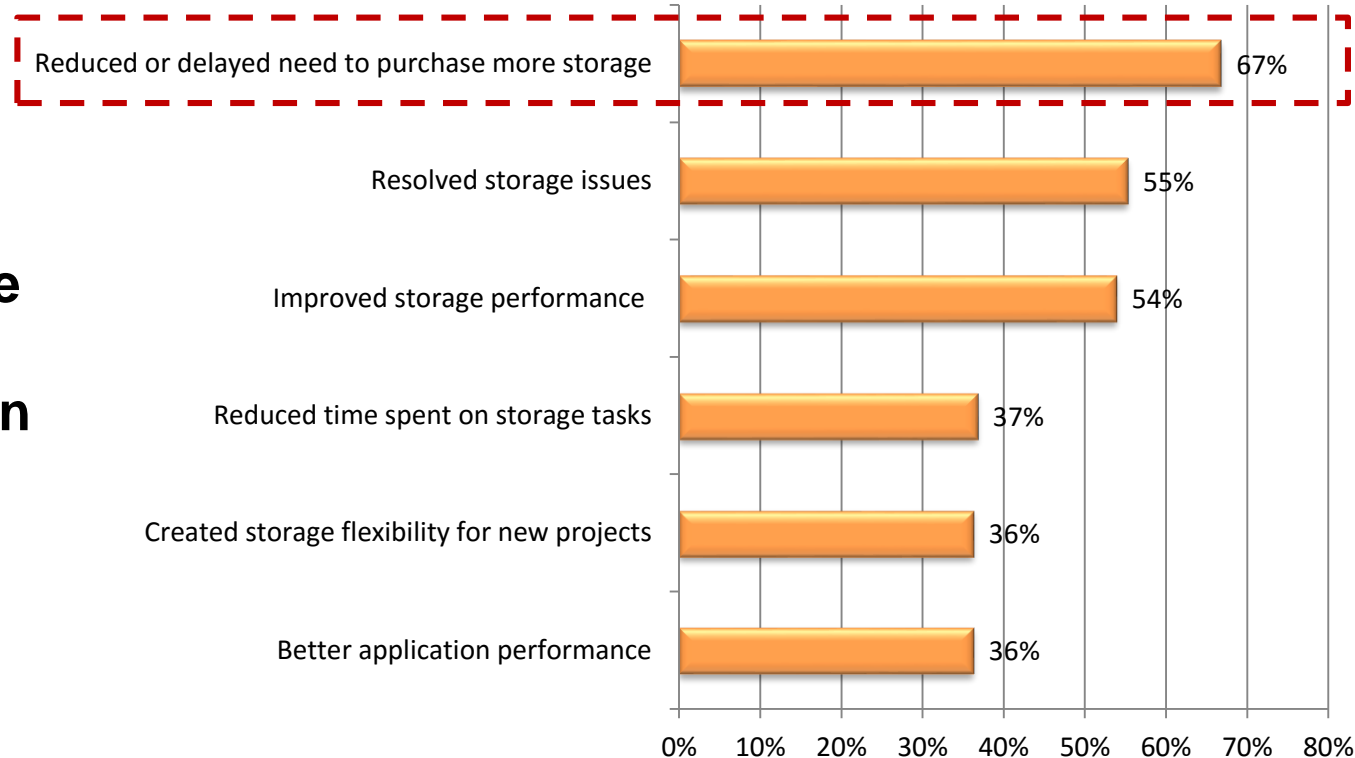
Diverse Requirements Important for SRM Solutions

Which analytical capabilities are important for a SRM solution?



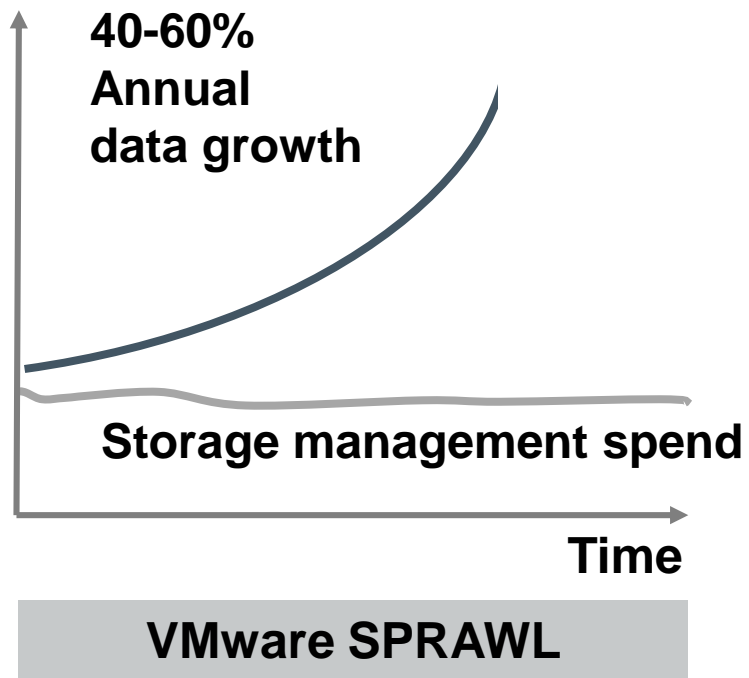
Storage Reclamation Projects Save Money

What benefits were received from the storage reclamation project?

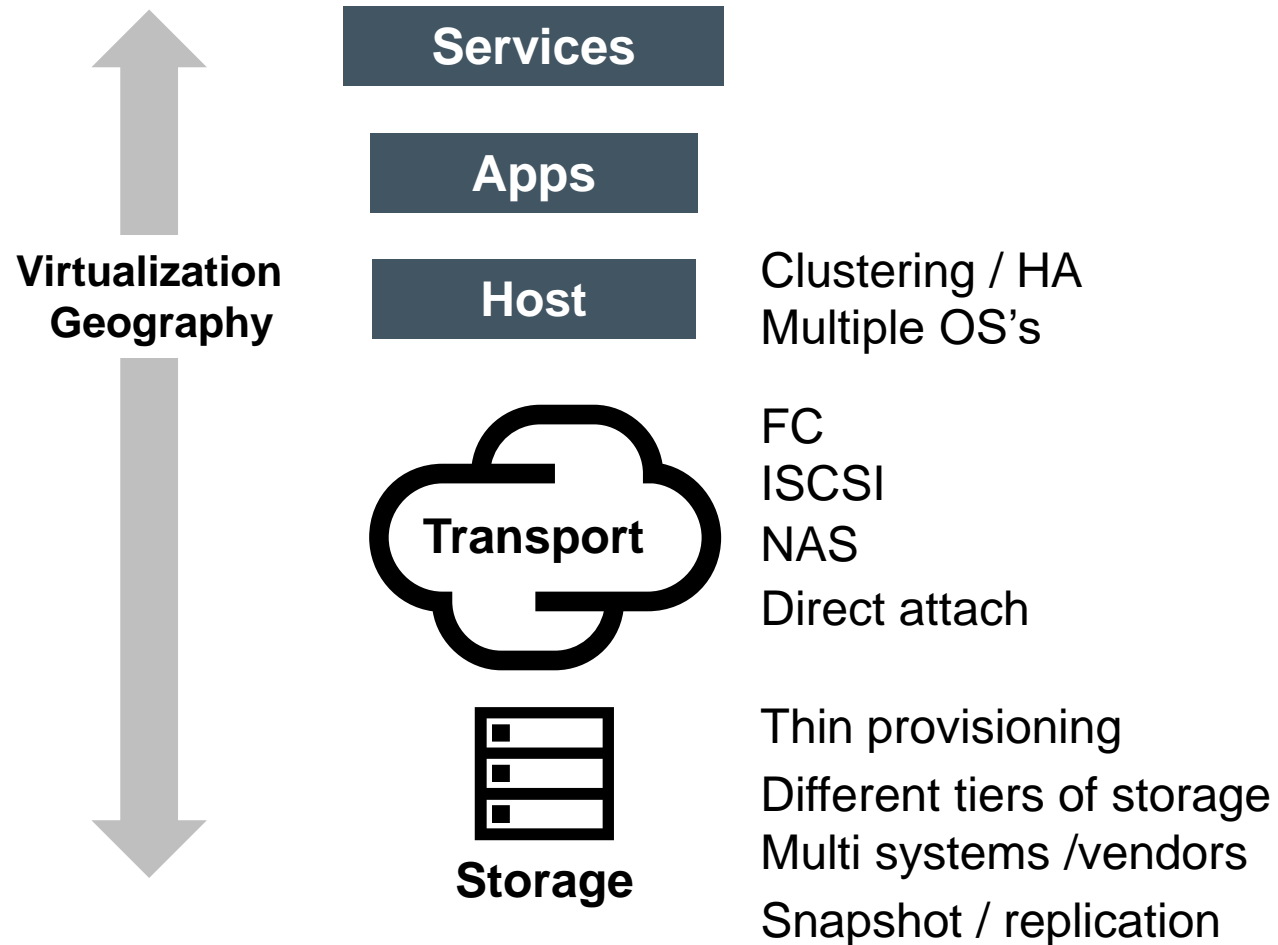


Storage management challenges

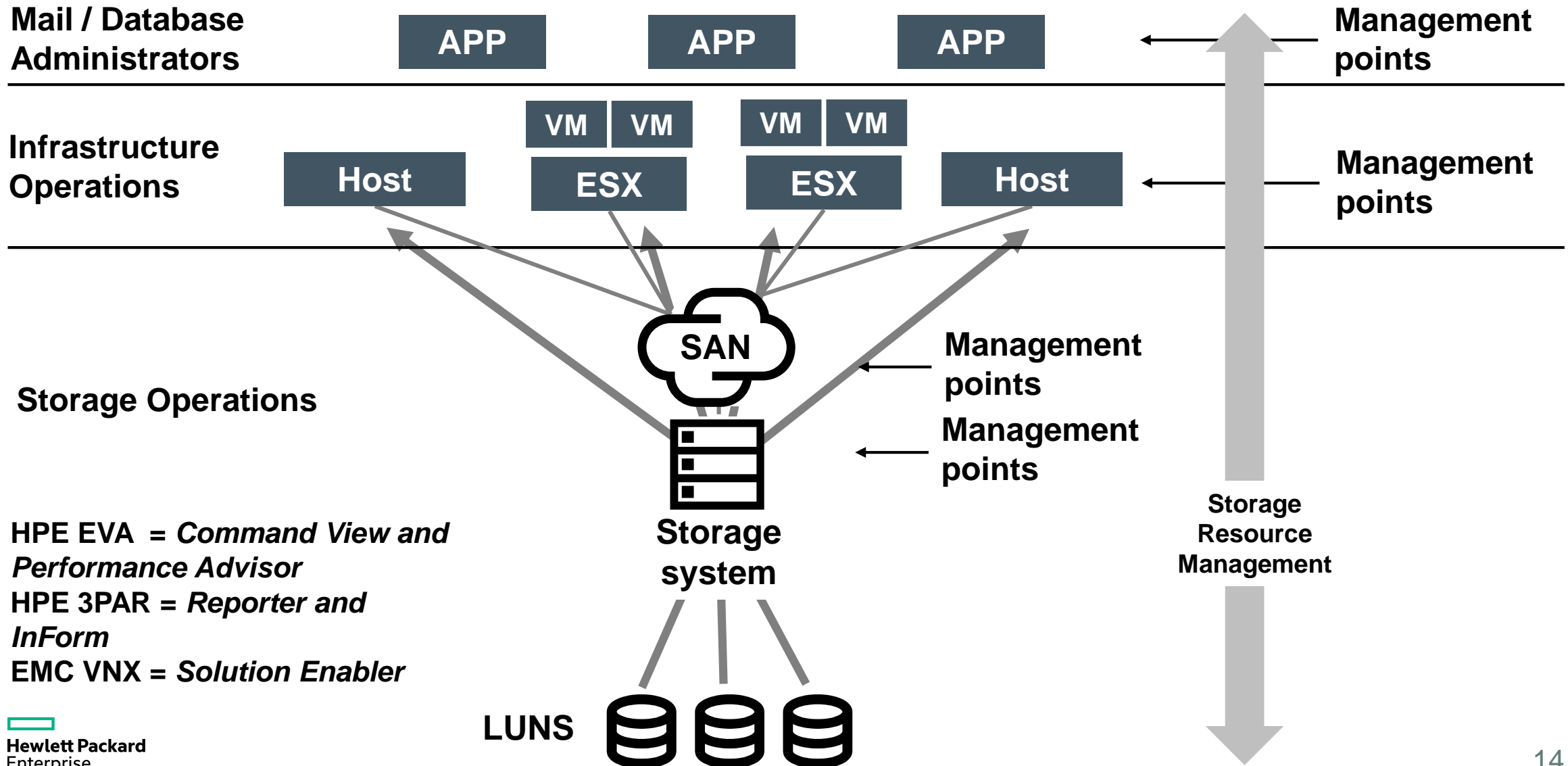
Data growth



Complexity



End-to-end storage management

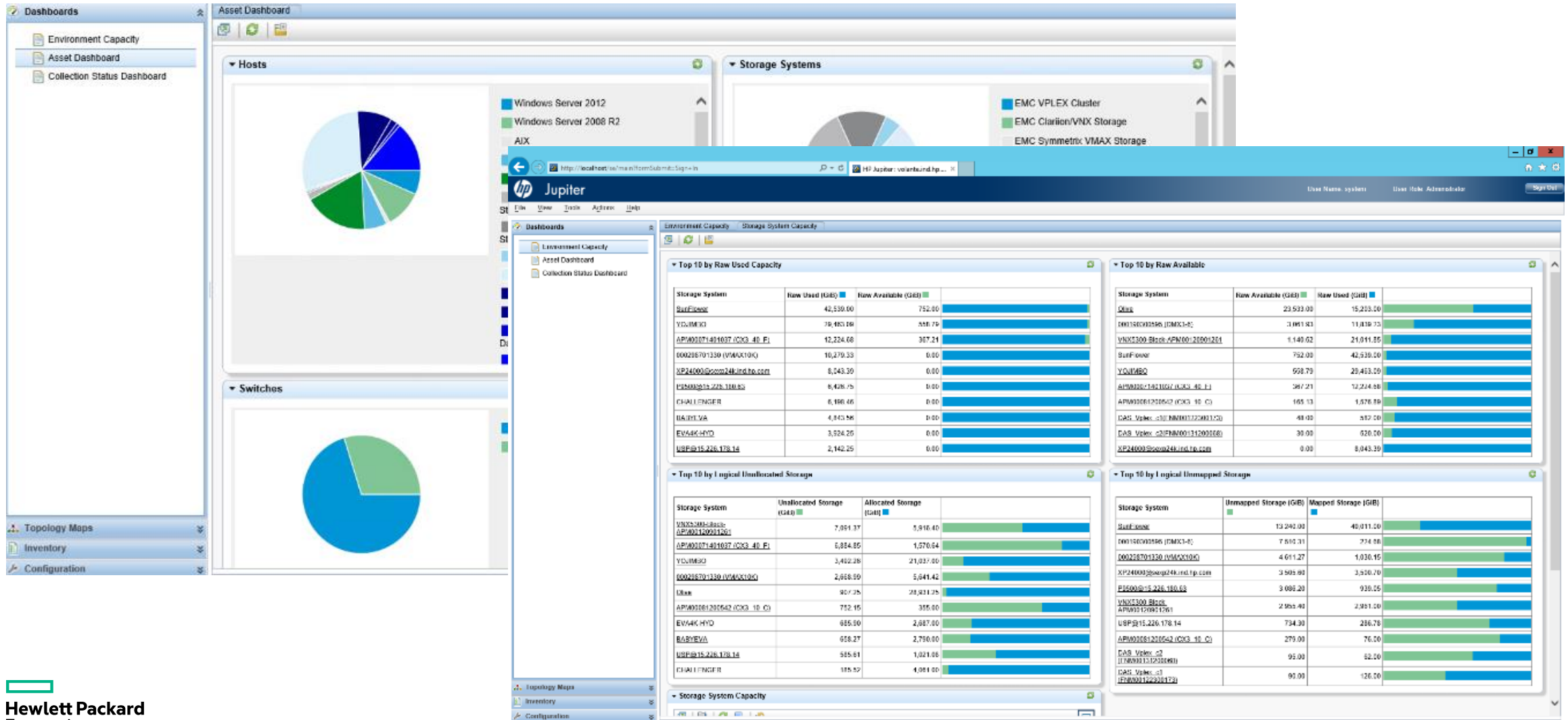




Storage Operations Manager overview

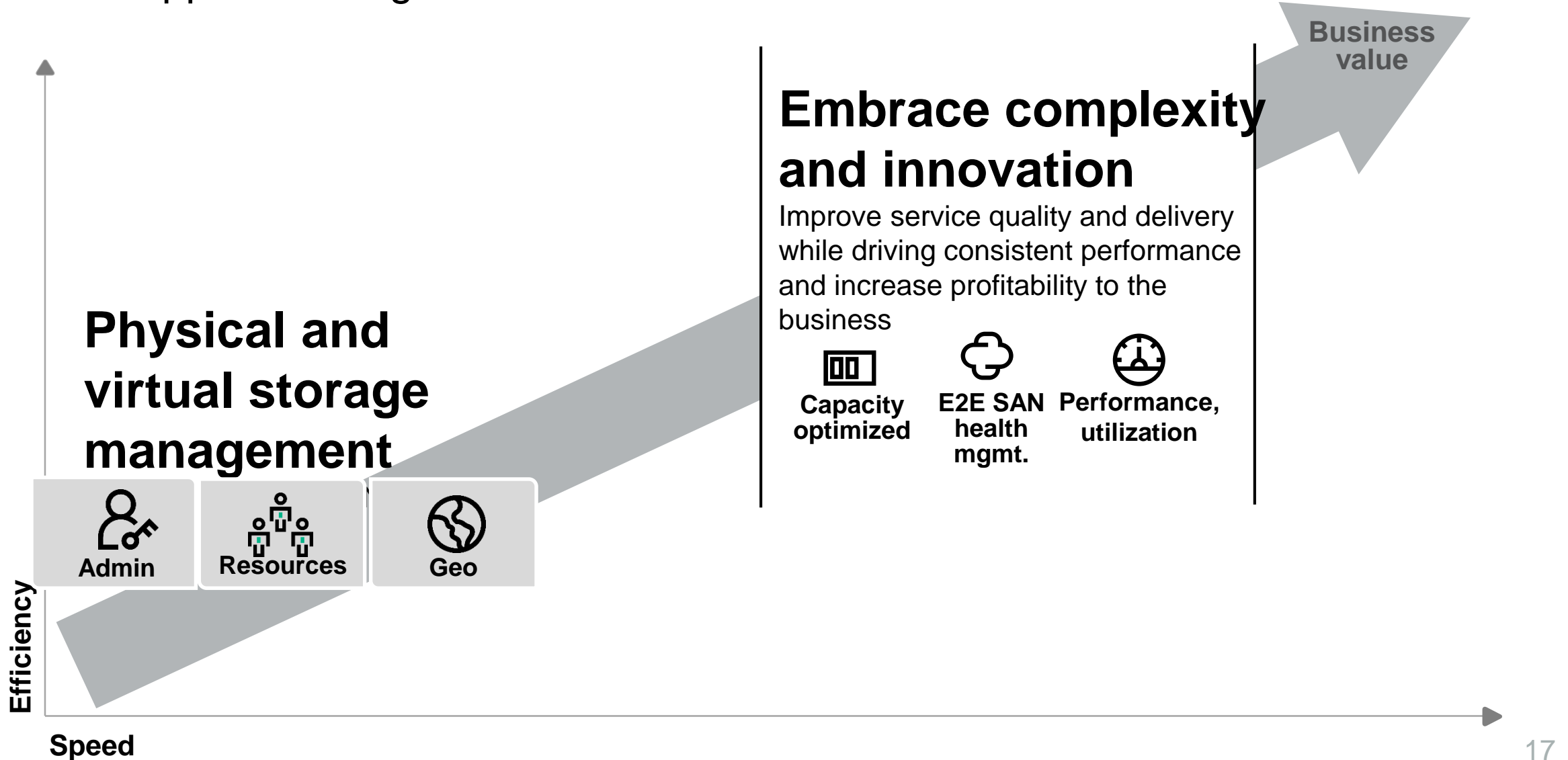
Storage Operations Manager

Built on highly scalable NNMi Architecture



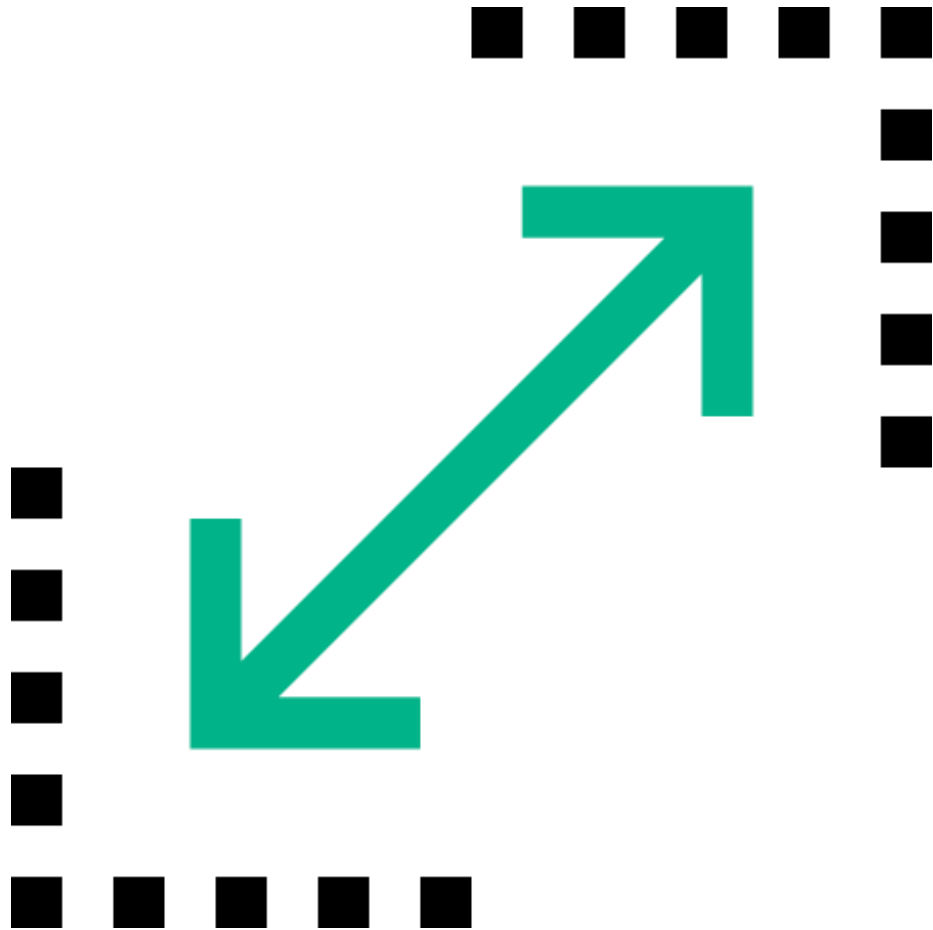
Unified resource optimization

HPE's approach to global SRM



Massive scalability

Scalable architecture, NAT support, element-based discovery



Features

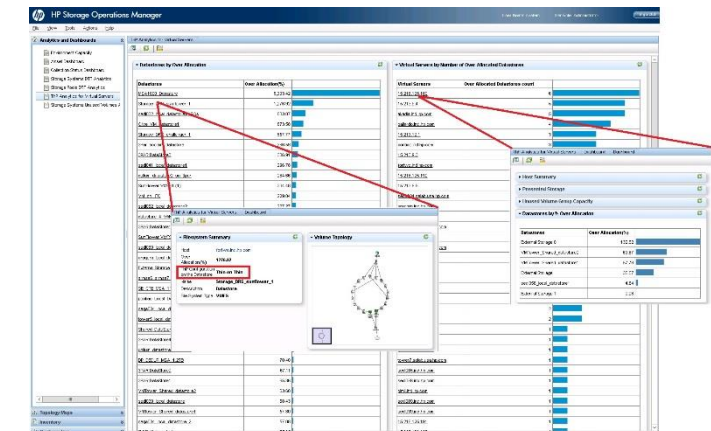
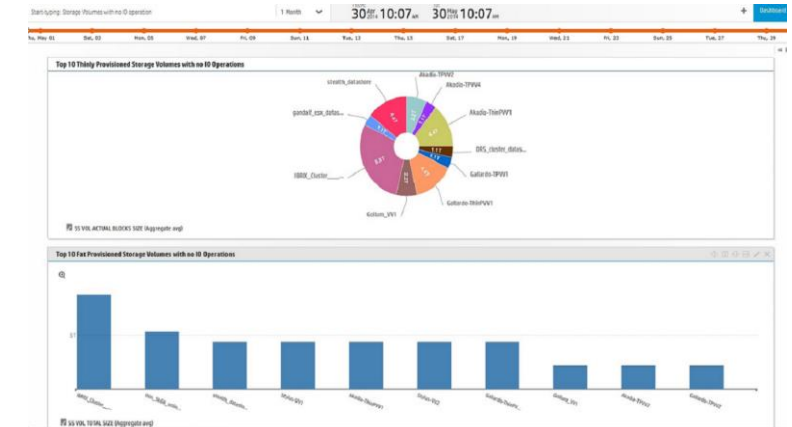
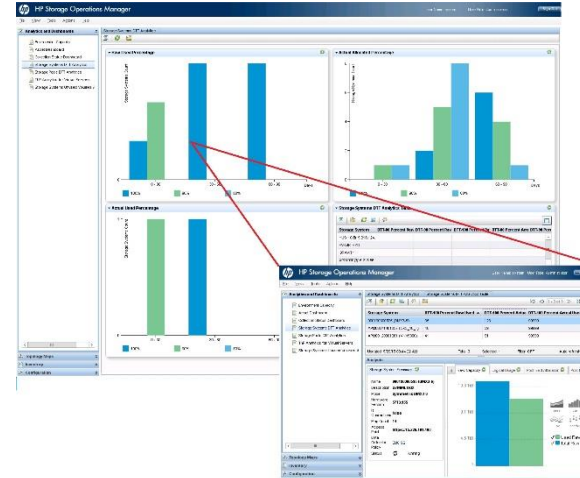
- Time-tested NNMi platform
- Massive horizontal scalability
- Support for NAT and Cloud environments
- Path and dependency resolution at the global reporting level - OBR
- Continuous element-based discovery

Storage Analytics

Prepare, predict and pinpoint IT issues to defend against complex system failure

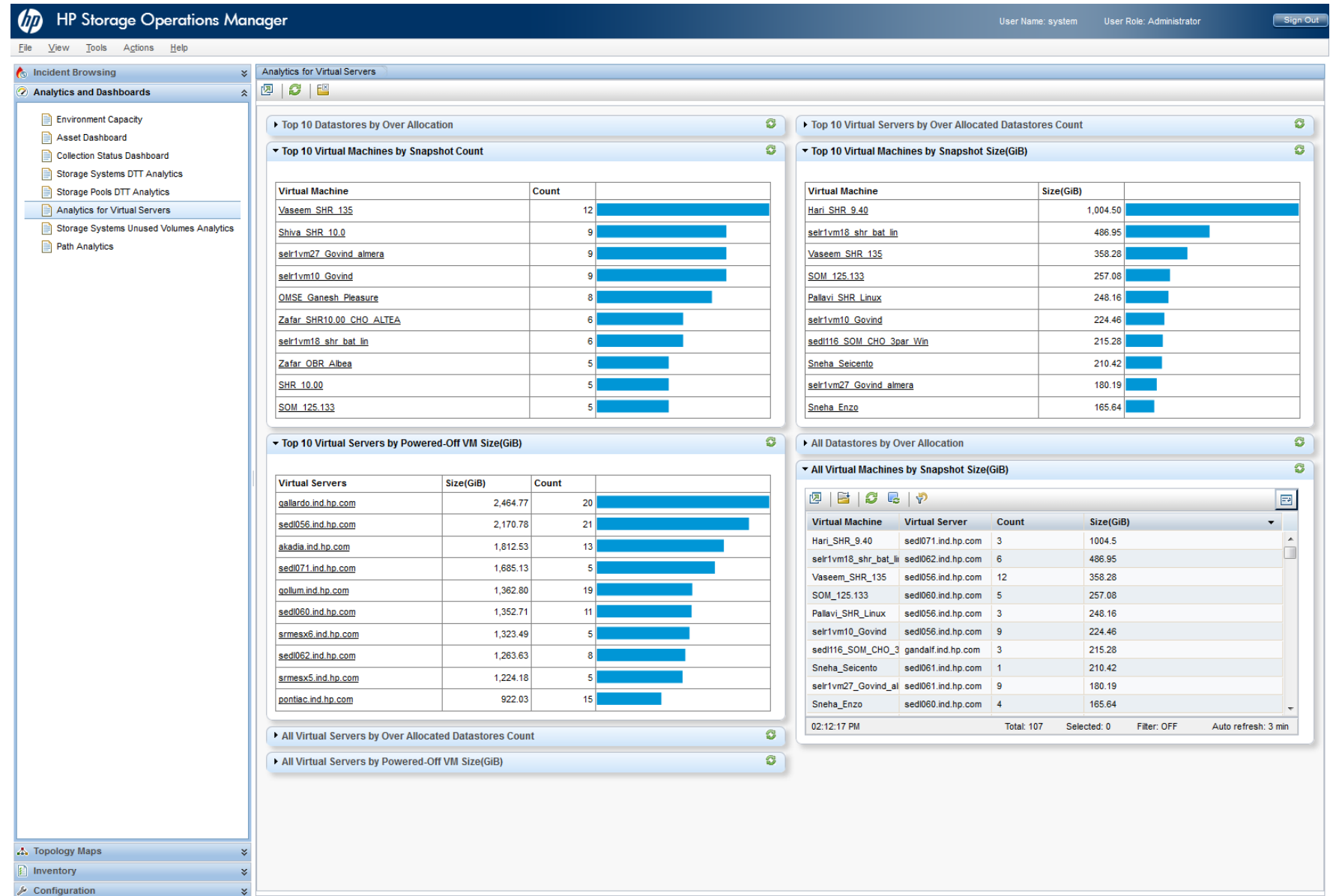
SRM Analytics Use Cases

- Analytics of Thin Provisioning in a virtual environment
- Advanced Analytics in the Virtual Infrastructure
- DTT analytics for physical array capacity
- Storage Path Performance Analytics



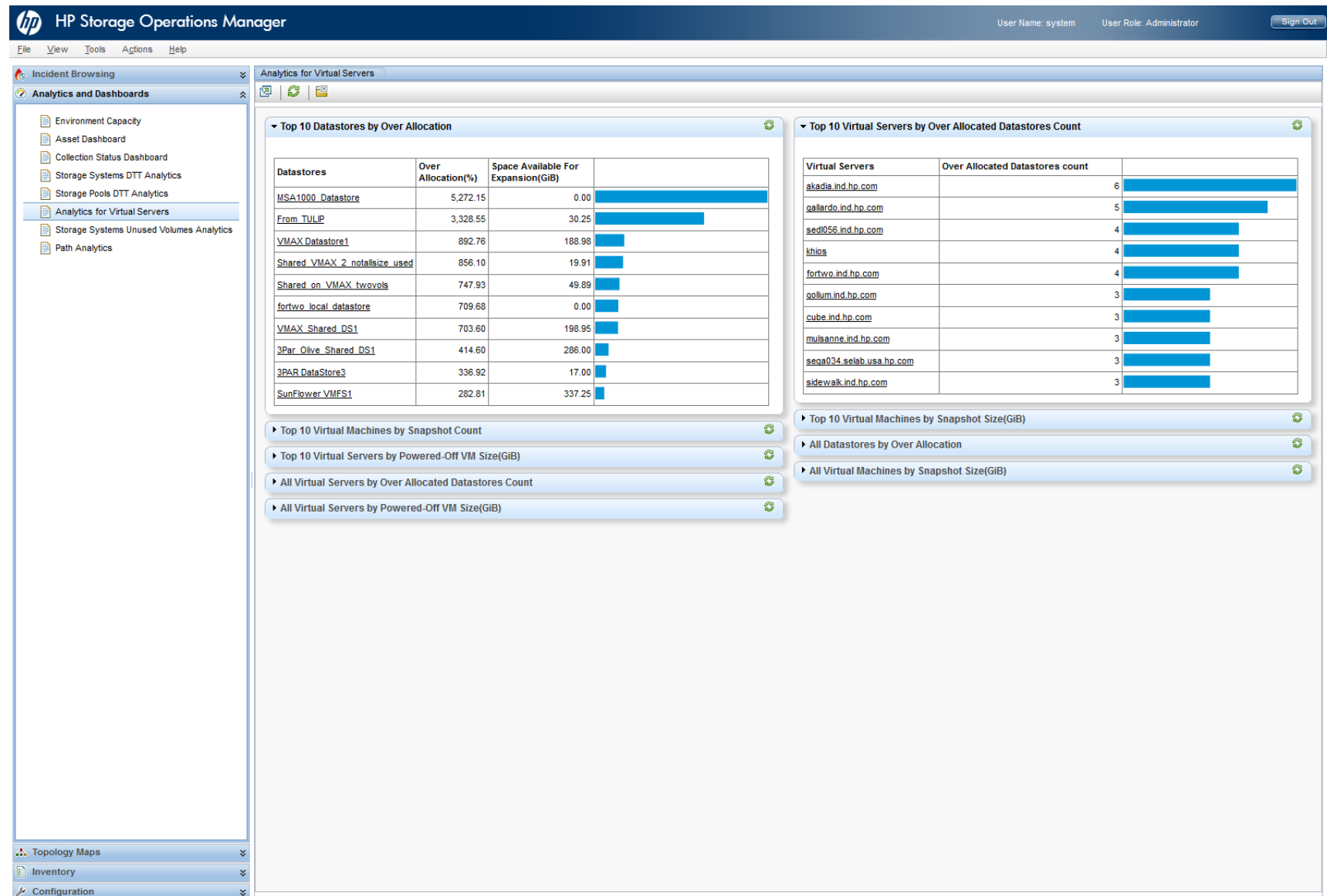
Virtual Server Analytics dashboard: Capacity Management

- Monitor storage availability on virtual servers
- Snapshot management
- Powered-off VM management



Virtual Server Analytics dashboard: Thin Provisioning (ThP)

- Enhanced ThP Analytics
- Track physical storage available for expansion



Virtual Server Analytics dashboard: Host Level

- Monitor storage availability at each virtual server
- Over-allocated datastores
- Powered off VMs

The screenshot displays the HP Storage Operations Manager interface. The top navigation bar includes the HP logo, the title 'HP Storage Operations Manager', and user information: 'User Name: system' and 'User Role: Administrator'. A 'Sign Out' button is located in the top right corner. The main interface is divided into several sections:

- Left Sidebar:** Contains a list of navigation options under 'Incident Browsing' and 'Analytics and Dashboards'. The 'Analytics for Virtual Servers' option is selected.
- Host Summary:** Displays key information about the host 'akadia.ind.hp.com', including its DNS name, description, model (ProLiant DL580 G5), operating system (ESX Server), vendor (HP), OS version (5.5.0), map count (4), last data collection time, access point, data collection policy, and status (Running).
- Host Capacity:** A section for monitoring storage capacity.
- Unused Storage:** A section for monitoring unused storage.
- Datastores by % Over Allocation:** A table showing the over-allocation percentage and space available for expansion for various datastores.
- Powered-Off VM by Size:** A table showing the size and last powered-off time for various virtual machines.
- Storage Volumes with Single Point of Failure Ports:** A section for monitoring storage volumes.
- CPU:** A section for monitoring CPU usage.
- Memory Percent:** A section for monitoring memory usage.

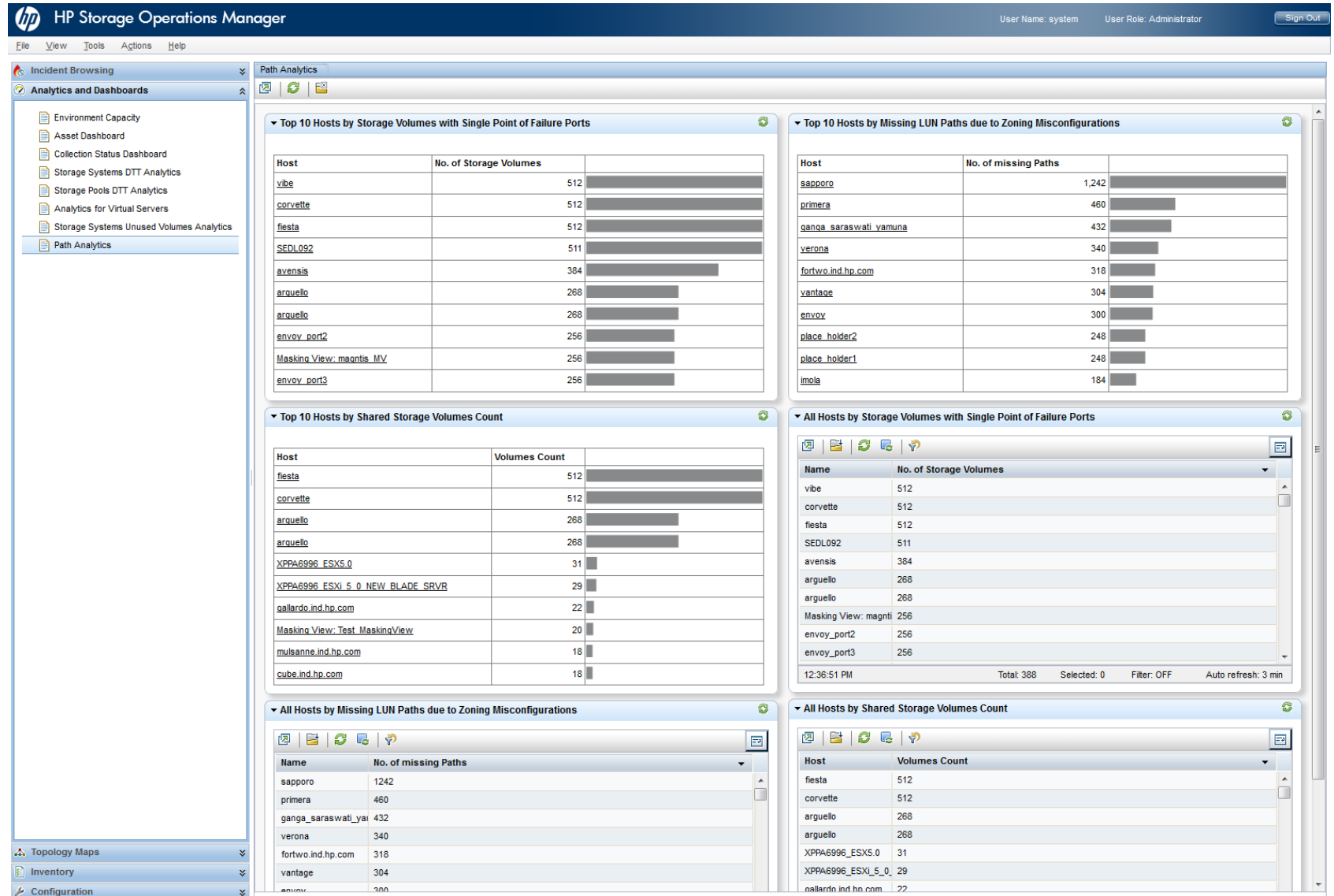
The bottom of the interface features a 'Topology Maps' section with options for 'Inventory' and 'Configuration'.

Datastores	Over Allocation(%)	Space Available For Expansion(GiB)
3PAR DataStore3	336.92	17.00
3PAR DataStore4	82.80	337.25
SunFlower VMFS1	81.56	337.25
3PAR DataStore5	46.45	0.00
3PAR DataStore1 (1)	45.11	337.25
3PAR DataStore2 (1)	30.26	17.00

Virtual Machine	Size(GiB)	Last Powered-Off
DataONTAP8.3	258.18	January 7, 2016 9:23:49 AM IST
DataONTAP	258.18	January 7, 2016 9:23:49 AM IST
Kayano (Phani)	256.01	January 7, 2016 9:23:53 AM IST
cappuccino	181.00	January 7, 2016 9:23:45 AM IST
Vanquish [Naresh]	144.00	January 7, 2016 9:23:49 AM IST
Catalyst	128.01	January 7, 2016 9:23:53 AM IST
Oracle RAC 2 (shashi)	128.00	January 7, 2016 9:23:45 AM IST
Oracle RAC 1 (shashi)	128.00	January 7, 2016 9:23:45 AM IST
Neha_CMS	120.03	January 7, 2016 9:23:49 AM IST
Pratheep(CMS)	100.00	January 13, 2016 10:28:32 AM IST
StoreOnceVSA (shashi)	61.37	January 7, 2016 9:23:45 AM IST
ganesh(pumaa SOM)	41.11	January 7, 2016 9:23:49 AM IST
Zatoichi	8.63	January 7, 2016 9:23:45 AM IST

Path Analytics dashboard

- Storage volumes with single points of failure
- Hosts with missing LUN paths
- Hosts with shared storage volumes



Path Analytics dashboard: Host level

- Storage paths that lack redundancy
- Zoning misconfigurations
- Volumes shared with other hosts

The screenshot displays the HP Storage Operations Manager interface, specifically the Path Analytics dashboard for a host. The dashboard is organized into several sections:

- Host Summary:** Provides key information about the host, including Name (akadia.ind.hp.com), DNS Name (akadia.ind.hp.com), Description (VMware ESXi 5.5.0 build-1746018), Model (ProLiant DL580 G5), Operating System (ESX Server), Vendor (HP), OS Version (5.5.0), Map Count (4), Last Data Collection Time (January 20, 2016 9:12:54 AM IST), Access Point (srmsesx9-vm7.ind.hp.com), Data Collection Policy (Default Data Collection Policy), and Status (Running).
- Presented Storage Summary:** A section for summarizing presented storage.
- Volumes by % Used:** A section for monitoring storage volume usage.
- Missing LUN Paths due to Zoning Misconfigurations:** A table listing hosts, HBA ports, HBA port states, storage volumes, and storage system ports. The table shows 8 entries for the host akadia.ind.hp.com, with HBA ports vmhba5 and vmhba4, and storage volumes 00208 (thin), 00209 (thin), and Akadia-TPVV4.
- Shared Storage Volumes:** A table listing hosts, storage volumes, storage pools, storage systems, and shared hosts. The table shows 2 entries for the host akadia.ind.hp.com, with storage volumes Akadia-TPVV4 and Gallardo-ThinPVV1, storage pool Shashi-RAID6-8, storage system SunFlower, and shared host gallardo.ind.hp.com.
- Host Capacity:** A section for monitoring host capacity.
- Unused Storage:** A section for monitoring unused storage.
- Datastores by % Over Allocation:** A section for monitoring datastore over-allocation.
- Powered-Off VM by Size:** A section for monitoring powered-off VMs by size.
- Storage Volumes with Single Point of Failure Ports:** A table listing hosts, HBA ports, HBA port states, HBA ports count, storage volumes, and storage systems. The table shows 4 entries for the host akadia.ind.hp.com, with HBA port vmhba5, HBA port state Online, HBA ports count 1, and storage volumes 00209 (thin), 00208 (thin), LDEV 00:12 D, and LDEV 00:13 D.
- CPU:** A section for monitoring CPU usage.
- Memory Percent:** A section for monitoring memory usage.

The interface includes a navigation pane on the left with options like Incident Browsing, Analytics and Dashboards, Environment Capacity, Asset Dashboard, Collection Status Dashboard, Storage Systems DTT Analytics, Storage Pools DTT Analytics, Analytics for Virtual Servers, Storage Systems Unused Volumes Analytics, and Path Analytics. The top right shows the user name (system) and role (Administrator).



Storage Operations Manager 10.10

New feature demo



Storage Operations Manager 10.10

Call to action

Where can I learn more?

SOM 60-day Free Trial - hpe.com/software/som

SOM Documentation - <https://softwaresupport.hp.com/group/softwaresupport/search-result/-facetsearch/document/KM01435209>

SOM Blogs

- <http://www.techazine.com/2015/06/03/evaluating-hp-storage-operations-manager-from-the-customer-perspective/>
- <http://www.techazine.com/2015/06/03/installing-off-cycle-device-bundles-for-hp-storage-operations-manager/>
- <http://www.techazine.com/2015/06/10/installation-walkthrough-of-hp-storage-operations-manager/>
- <http://h30499.www3.hp.com/t5/Business-Service-Management-BAC/How-to-reclaim-your-storage-from-unused-VMs-in-2-easy-steps/ba-p/6741757#.VUprRPIVhBc>
- <http://h30499.www3.hp.com/t5/Business-Service-Management-BAC/How-the-new-Storage-Operations-Manager-finally-gets/ba-p/6745111#.VVaNafIViko>
- <http://h30499.www3.hp.com/t5/Business-Service-Management-BAC/Storage-Operations-Manager-the-next-evolution-of-storage/ba-p/6746364>
- <http://community.hpe.com/t5/Business-Service-Management/Announcing-Storage-Operations-Manager-version-10-10/ba-p/6830467#.VrOmqa2Wuo>



Thank you

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