



HPE (Hewlett Packard Enterprise) Storage Solution Brief

Virtana's HPE integration extends VirtualWisdom data collection to HPE's 3PAR, Primera, and Alletra storage. HPE's 3PAR mid-range storage platform offers a Tier-1 all flash foundation with the flexibility to move data seamlessly between on-premises and public cloud and is ideal for mission-critical workloads that require the highest levels of resiliency. HPE Primera is positioned as the successor to the HPE 3PAR products, offering Tier-0 all-flash storage for mission-critical applications.

The integration provides singular visibility into the health, utilization, performance, and capacity of 3PAR, Primera, and Alletra storage, and correlates HPE storage metrics with data collected from related compute and network components in the infrastructure, and to the applications running on that infrastructure.

Use Cases

Our HPE storage integration supports a wide range of storage monitoring use cases across health, utilization, performance, capacity, and other domains:

- View how much storage an application consumes.
- See which initiator consumes the most resources on an array.
- Show the data path from a host, through a switch, to a storage port, and to volumes associated with the host.
- View latency metrics at the host, volume, and application level.
- Detect whether any replication tasks are causing performance degradation.
- Determine if a host has multiple paths to its storage.
- See when storage capacity will run out.
- Monitor current and historical capacity while considering compression and deduplication.
- View firmware versions on arrays and array components.
- Tag arrays with custom properties.

Value of the Integration

- Ensures optimal performance and availability of HPE storage for business-critical applications and workloads.
- Provides predictive capacity forecasting to forecast time to needed expansion or refresh.
- Optimizes HPE storage resources by monitoring workload metrics and resource usage to arrive at the ideal configuration for your workloads.
- Helps assure a seamless transition to new HPE Primera and Alletra storage solutions by monitoring critical metrics before, during, and after migration.

Discovery and Data Collection

The integration connects to the HPE 3PAR and Primera web services APIs using read only access. Data is collected at specified polling intervals and is imported into VirtualWisdom for use in inventory, topology, alerting, analytics, and reports.

VirtualWisdom discovers and collects data from HPE arrays, storage nodes, CPUs, Fibre Channel, IP, iSCSI, and SAS ports, volumes, initiators, CPGs, disks, and hosts.

Over 280 unique metrics related to HPE storage health, utilization, performance, and capacity are collected from HPE arrays and components, including the following:

- Average, minimum, and maximum read or write byte rate.
- Average, minimum, and maximum read or written IOPS.
- Average bytes read or written per operation.
- Average latency per read or write operations.
- Total cache hits and misses.
- % cache hits and misses.
- % system, user, idle, and total CPU time.
- Average, minimum, and maximum % utilized and free capacity.
- Average, minimum, and maximum used usable, free, and effective capacity.



Capabilities powered by the HPE storage integration

See HPE storage in the context of its relationships to business-critical applications and other infrastructure components. View relationships and easily traverse hierarchies to expose active alarms in a data path. With Virtana topology for HPE storage, you can filter the infrastructure view to show applications using HPE storage and compare trends in resource utilization and performance.

VirtualWisdom's rich alerting capabilities let you monitor HPE storage infrastructure and reveal cyclical trends in workloads over weeks and months. Our Capacity Forecast alerting warns you when HPE storage system, storage processor, and pool entities are approaching capacity, so you can avoid the impact that comes from running out of capacity unexpectedly.

Our flexible alerting also lets you create alerts on any monitored HPE storage component and metric.

Use the Capacity Forecast analytic to predict time-to-zero for capacity based on historical capacity data, and the Event Advisor and Trend Matcher to identify and troubleshoot anomalous events that occur in HPE storage infrastructure.

Standard report templates are provided so you can quickly start using VirtualWisdom to monitor HPE storage utilization, performance, and capacity.

