

# Hyper-converged Infrastructure (HCI) & VirtualWisdom

**Q:** What is meant by Hyper-converged Infrastructure?

**A:** Hyperconverged infrastructure (HCI) is a virtual computing infrastructure solution that seamlessly combines several data center services in an appliance form factor. Hyper-converged infrastructure is characterized by software-centric design that is based on a single “building block” appliance that, when combined with additional building blocks, provides a single, scalable resource pool with a high degree of automation. It combines hypervisor, compute, network, storage and virtualized SAN with other IT services such as data protection. It provides the ability to manage aggregated resources within and across data centers as a single federated system.

**Q:** Are Hyper-converged systems supported by VirtualWisdom and what value does it add?

**A:** VirtualWisdom 5.4 and later releases support:

- Dell EMC ScaleIO uses ProbeSDS and ProbeNetflow to correlate IP traffic across the networks to pinpoint and analyze traffic congestion that impacts the ScaleIO network services. Capabilities include:
  - Detect and resolve ScaleIO slow application response times.
  - Determine if the SDS disks are impacting application performance.
  - Run reports on SCSI disk latency metrics filtered by VM.
  - Detect cache usage inefficiencies.
  - Monitor when rebalancing or rebuilding occurs.

Native ScaleIO monitoring or other 3<sup>rd</sup> party solutions, take 5-second samples every 5 minutes, which is called “sampling”. VirtualWisdom’s ProbeSDS collects ScaleIO band width metrics every 5 seconds. VirtualWisdom creates a half-dozen virtual metrics based on the ingested data to make the data available more robust and easier to understand. For example, rather than just show Max Storage Capacity, and Used Capacity, VirtualWisdom creates a metric that shows % Capacity Available.

- VMware vSAN support is offered by VirtualWisdom via integration with VMware. Capabilities include:
  - Improve vSAN application response times.
  - Determine impact of SDS disks on application performance.
  - Report on SCSI disk latency metrics filtered by VM.
  - Detect cache usage inefficiencies.
  - Comprehensive reporting and remediation on a vSAN system-wide basis.

- Nutanix systems running Hyper-V with NetFlow, or vSphere hypervisors are supported via the VirtualWisdom ProbeVM. There is no current support for systems running the Acropolis hypervisor. Capabilities include:
  - Detect and resolve slow application response times.
  - Determine if the disks are impacting application performance.
  - Run reports on SCSI disk latency metrics filtered by VM.
  - Detect cache usage inefficiencies.
  - Application discovery using ServiceNow or NetFlow (in cases where the Nutanix cluster is used as iSCSI block storage by bare metal hosts external to Nutanix)

VirtualWisdom can also support Nutanix external storage services via NFS or SMB with the ProbeNAS.

- HPE SimpliVity systems running Hyper-V or vSphere (and not KVM) hypervisors are supported by the VirtualWisdom vSphere (ProbeVM), vSAN (ProbeSDS for vSAN), and NetFlow (ProbeNetFlow) integrations. Capabilities include:
  - Detect and resolve slow application response times.
  - Determine if the disks are impacting application performance.
  - Run reports on SCSI disk latency metrics filtered by VM.
  - Detect cache usage inefficiencies.
- VxRail / VxRack are Dell/EMC/VMware's HCI appliances and rack systems "powered by vSAN" are supported by VirtualWisdom. The VxRail solution is supported by the vSphere (ProbeVM), vSAN (ProbeSDS for vSAN), and NetFlow (ProbeNetFlow) integrations. The VxRack offering combines VMWare and ScaleIO to create a hyperscale platform, and supporting that solution are the vSphere, ScaleIO & NetFlow integrations/probes. Capabilities include:
  - Detect and resolve slow application response times.
  - Determine if the SDS disks are impacting application performance.
  - Run reports on SCSI disk latency metrics filtered by VM.
  - Detect cache usage inefficiencies.
  - Application discovery using ServiceNow or NetFlow in cases where the VxRail system is used as an iSCSI target by external hosts
  - Maintain full control of the health of vSAN systems with comprehensive reporting and remediation.

VirtualWisdom ProbeSDS for vSAN requires that the customer be using VxRail 4.5 or above (which includes vCenter 6.5 and vSAN 6.6).

- Cisco HyperFlex is supported via the ProbeVM for vSphere. It helps identify application latency, and enhances the application discovery process.

**Q:** What additional value can be derived from the ProbeNetFlow integration?

**A:** ProbeNetFlow supports the collection of NetFlow/IPFIX data from the VMWare vSphere Distributed switch for enhanced monitoring and troubleshooting capabilities.



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