NVMeoF Resources

VMware Storage

Table of contents

NVMeoF Resources

NVMeoF vSphere 8

vVols NVMeoF

With vSphere 8, we announced support for vVols with NVMeoF FC. Working to keep vVols on the leading edge of storage technology, adding NVMe support allows customers to get the benefits of both vVols granular management and NVMeoF Performance.

For more details, see the announcement article here.

vSphere 8 NVMeoF Enhancements

- Support for 256 Namespace and 4k paths.
- Extend reservation Support for NVMe device
- Auto-discovery of NVMe Discovery Service support in ESXi

More in-depth technical details are available here.

vSphere 8 U1

- End-to-End NVMe
- Max Paths per NVMe-OF Namespace from 8 to 32
- Increase WSFC clusters per ESXi host from 3 to 16

More in-depth technical details are available here.

Feature support Details

Added Support:

- vVols
- Clustered VMDK (NVMe reservation)
- Boot with SAN (FC only)
- E2E NVM (8 U1)

Unsupported:

- Pt-RDM and virtual-RDM
- VAAI Plugins (nothing identified so far)
- NVMe-oF namespace for core-dump
- 3rd party plugin support (with HPP)
- XCOPY support
- Scale differences (with 8.0, we would get 256 NS and 2k paths whereas SCSI is currently at 1K LUNs and 4K paths)
- Metro cluster support
- SRM support

NVMeoF Support added in vSphere 7

What's New in vSphere 7 Core Storage

With the release of vSphere 7, we added support for NVMe over Fabrics or NVMeoF. VMware continues to enhance connectivity with external storage. As NVMe devices and arrays continue to become the norm, the need to use the NVMe protocol for connectivity was an obvious progression. With the initial release, we are support FC and RoCE v2. (RDMA over Converged Ethernet)

See the announcement and details here: What's New in vSphere 7 Core Storage | VMware

Currently unsupported features with NVMeoF

- Pt-RDM and virtual-RDM
- Shared VMDK (NVMe reservation)
- vVols
- VAAI Plugins (nothing identified so far)
- NVMe-oF namespace for core-dump (not sure about this)
- 3rd party plugin support (with HPP)
- XCOPY support
- Scale differences (with 8.0, we would get 256 NS and 2k paths whereas SCSI is currently at 1K LUNs and 4K paths)
- Metro cluster support
- SRM support
- E2E NVMe
- Boot with SAN

NVMeoF Resources

Docs and KB articles on NVMeoF

NVMeoF Articles from VMware.com

NVMe Docs

- About VMware NVMe Storage
- VMware NVMe Concepts
- Basic VMware NVMe Architecture and Components
- Requirements and Limitations of VMware NVMe Storage
- VMware High Performance Plug-In and Path Selection Schemes
- Enable the High-Performance Plug-In and the Path Selection Schemes
- Enable NVMe over RDMA or NVMe over TCP Software Adapters
- Configure NVMe-oF-vVols

NVMeoF RoCE (NVMe-RDMA)

- Install and View an RDMA Capable Network Adapter
- Configuring Lossless Ethernet for NVMe over RDMA
- Configure Adapters for NVMe over RDMA (RoCE v2) Storage
- Add Controller for the NVMe over RDMA (RoCE v2) or FC-NVMe Adapter
- Enable NVMe over RDMA or NVMe over TCP Software Adapters
- Add Controller for NVMe over Fabrics

NVMeoF TCP (NVMe-TCP)

- Configuring NVMeoF TCP | VMware How-To article
- Configure Adapters for NVMe over TCP Storage Doc
- Configure VMkernel Binding for the TCP Adapter
- Example of Network Topology with NVMe over TCP
- Configure VMkernel Binding for the TCP Adapter with a vSphere Standard Switch
- Configure VMkernel Binding for the TCP Adapter with a vSphere Distributed Switch
- Add Controller for NVMe over Fabrics
- Infinidat adds NVMe-TCP Certification for VMware | VMware

NVMeoF FC (NMVe-FC)

- Add Controller for NVMe over Fabrics

NVMeoF vVols

- vVols with NVMe - A Perfect Match | VMware

Storage Guides

- vSphere 8 Storage

- vSphere 7 Storage

VMware Storage Partners

Blog with a list of Storage Partner announcements:

vSphere 7 with VMware's Storage Partners