QSAN Official Document

Backup Microsoft Hyper-V Using DPM

Application Note

July 2026

ANNOUNCEMENT

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Announcement
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PREFACE

Technical Support

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- Via the Web: https://www.qsan.com/technical_support
- Via Telephone: +886-2-77206355
- (Service hours: 09:30 - 18:00, Monday - Friday, UTC+8)
- Via Skype Chat, Skype ID: qsan.support
- (Service hours: 09:30 - 02:00, Monday - Friday, UTC+8, Summer time: 09:30 - 01:00)
- Via Email: support@qsan.com

Information, Tip, and Caution

This document uses the following symbols to draw attention to important safety and operational information.



INFORMATION

INFORMATION provides useful knowledge, definition, or terminology for reference.



TIP

TIP provides helpful suggestions for performing tasks more effectively.

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CAUTION

CAUTION indicates that failure to take a specified action could result in damage to the system.

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1. INTRODUCTION

This document describes how to use Microsoft System Center DPM (Data Protection Manager) 2025 to back up Hyper-V VMs (Virtual Machines) located on QSAN storage, whether on a standalone Hyper-V server or a Hyper-V cluster using CSV (Cluster Shared Volume).

The QSAN XInsight VSS Hardware Provider integrates QSAN storage systems with the Microsoft VSS (Volume Shadow Copy Service) framework, enabling DPM to trigger storage-based hardware snapshots instead of the slower host-based software snapshots. This document focuses on the integration between DPM 2025 and QSAN storage running the QSAN XInsight VSS Hardware Provider and provides a step-by-step guide to configuring standalone Hyper-V hosts and two-node Hyper-V clusters.

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2. CONFIGURATION SETTINGS

2.1. Environment and Topology

Demonstration Environment

- Server
  - Model: ASUS Server
    OS: Windows Server 2025
    Role: Hyper-V
    DPM: System Center Data Protection Manager 2025
    HW VSS provider: QSAN XInsight 1.6.3
- Storage
  - Model: XCubeNXT 8124D
    Memory: 16 GB per controller
    Disk: 12 x 10 TB SAS HDD
  - Pool: RAID 6
    Volume: 2 TB file volume
    Protocol: CIFS
    IP: 192.168.195.20

Demonstration Topology

Two topologies are covered: a standalone Hyper-V server connected to a QSAN XN8124D over Fibre Channel, and a two-node Hyper-V cluster sharing volumes on the same storage system through CSV.

1. Standalone Hyper-V server topology

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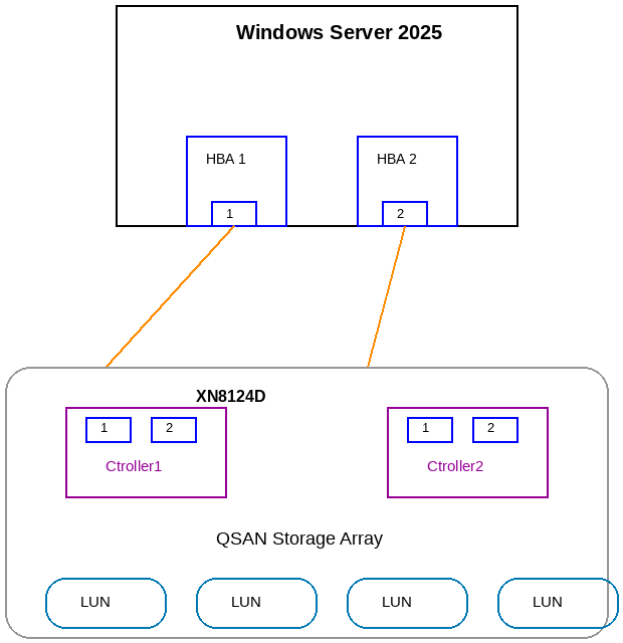


Figure 2-1 Demonstration Topology-1

2. Two-Node Hyper-V Cluster Topology

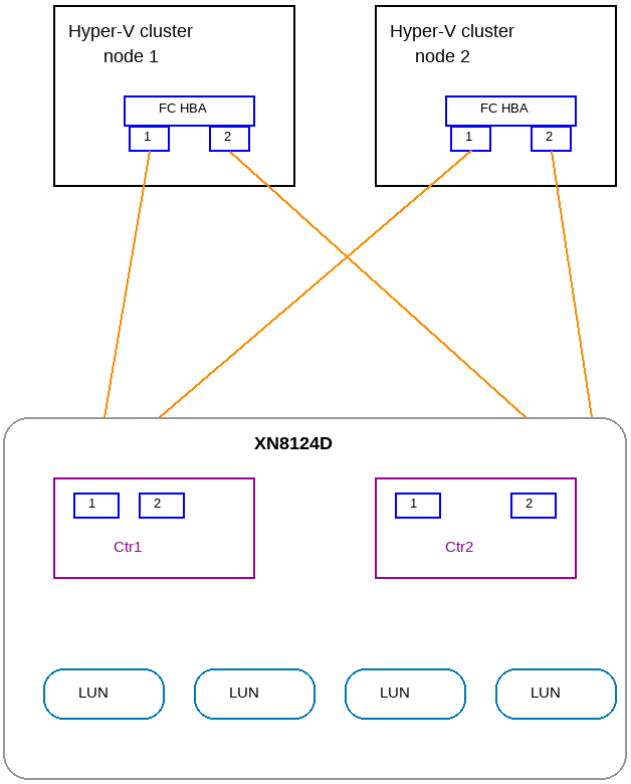


Figure 2-2 Demonstration Topology-2

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2.2. Deployment and Configuration Steps

Install Microsoft System Center DMP 2025

1. Install Microsoft System Center DMP 2025 on the backup server. VMs stored on the QSAN XN8124D can be backed up without directly connecting the backup server to QSAN storage.
2. Windows Server 2025 natively supports MPIO (MultiPath I/O) and is recommended for high availability.

Install QSAN XInsight VSS Hardware Provider

3. Install VSS hardware provider which is included in XInsight on each Hyper-V host that DPM will back up. Simply select the VSS component.

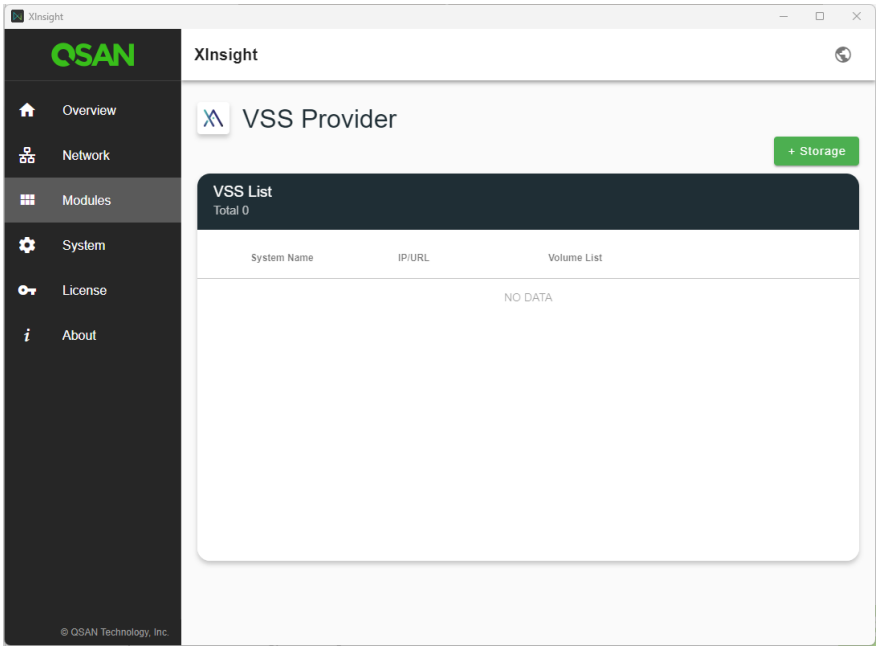


Figure 2-3 XInsight VSS Provider

Backing Up VMs on a Standalone Hyper-V Server

4. Mount drive E:\ as a partition on the QSAN XN8124D. A VM will be created on this partition so that backups can be performed via DPM using XInsight VSS.

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5. In the Hyper-V administrator, create a new VM named VMonXN8124D and store it under E:\Hyper-V\.

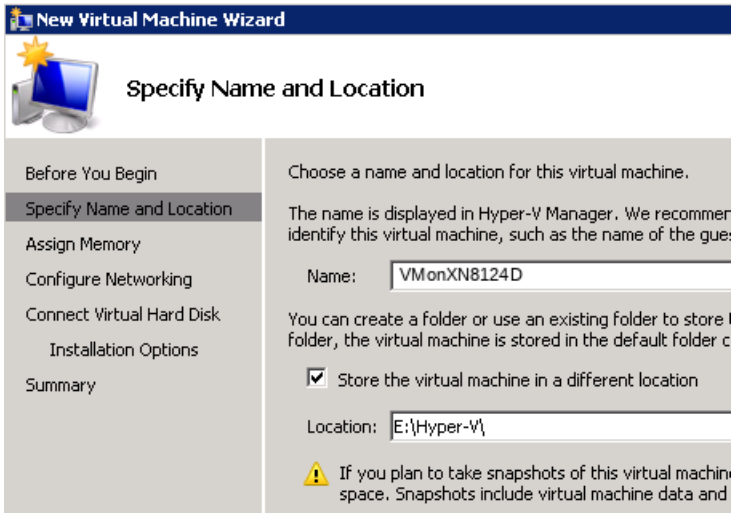


Figure 2-4 Create a VM

6. Go to **Home** -> **Jobs** -> **Backup**, and then select Windows computer.
7. Attach the virtual hard drive to the new VM.

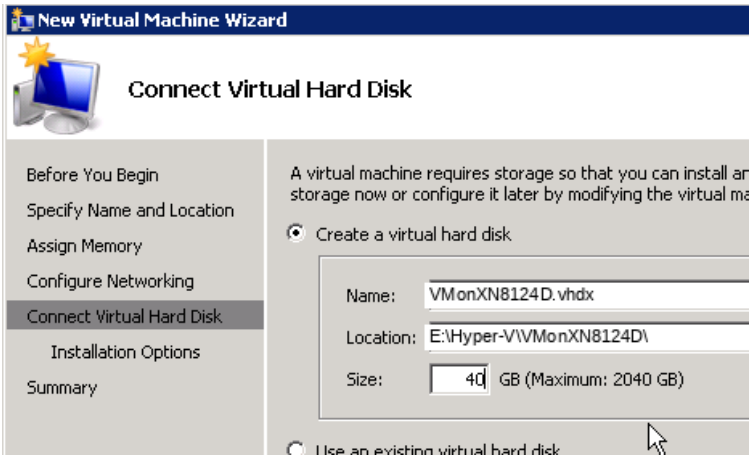


Figure 2-5 Create a VMDK

8. On the DPM server, create a new protection group to back up VMs on a standalone Hyper-V server by selecting the VM in the **Available members** list.

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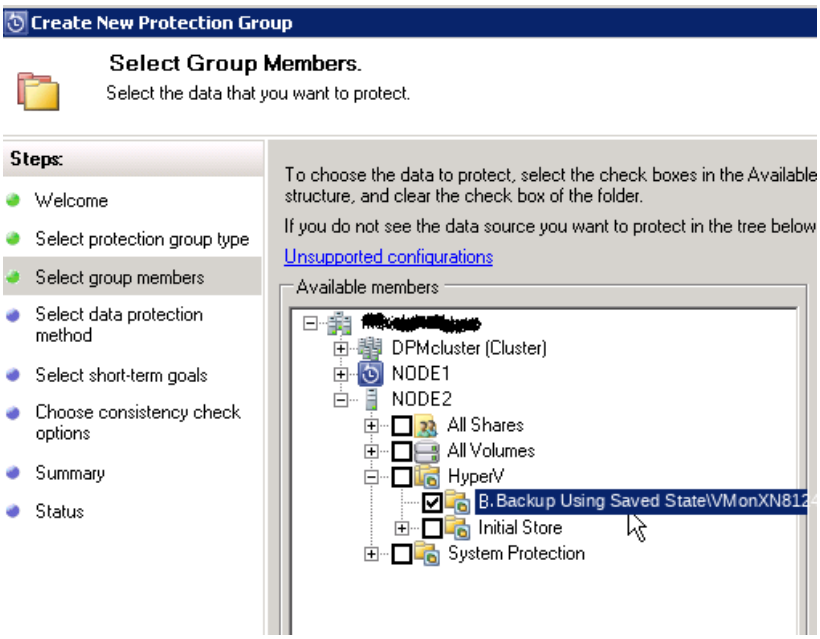


Figure 2-6 Select the VM in DPM

9. Once the protection group is established, DPM will automatically start the backup job.

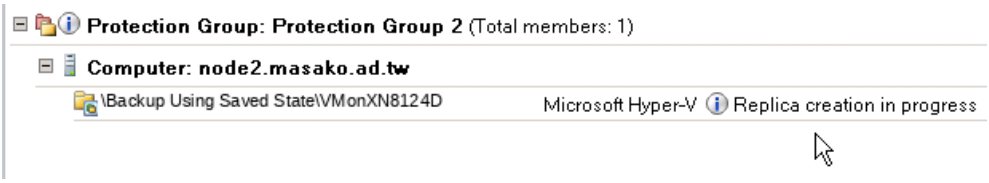


Figure 2-7 Start Backup Job-1

10. When a backup job is executed, a snapshot is automatically created on the QSAN XN8124D and then automatically mounted to a separate Hyper-V server. The snapshot is automatically deleted after the backup job is completed.

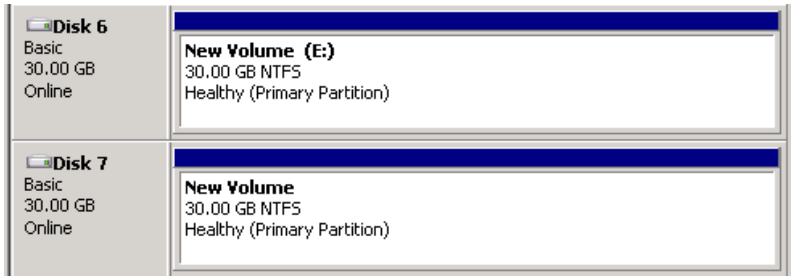


Figure 2-8 Start Backup Job-2

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Backing Up VMs in CSV on Hyper-V Cluster

11. In this configuration, the two volumes on the QSAN XN8124D are individually mounted as CSV (Cluster Shared Volume).

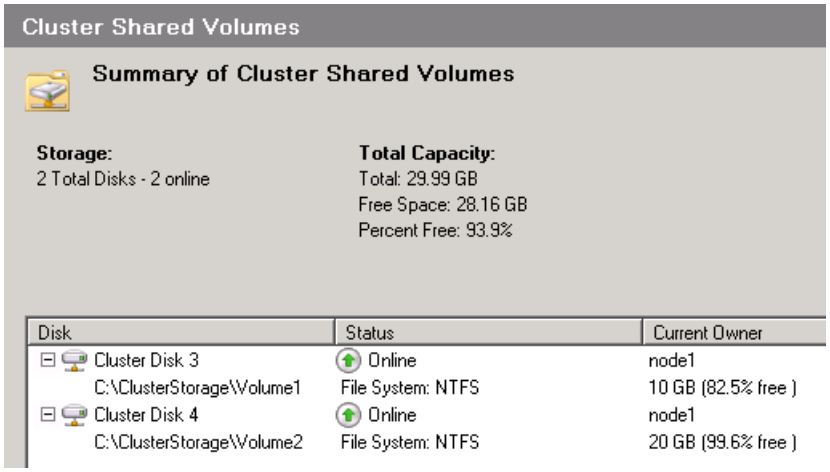


Figure 2-9 Mount as CSV

12. Create a new virtual machine named VM1 on the Hyper-V cluster and set its storage location to the first CSV.

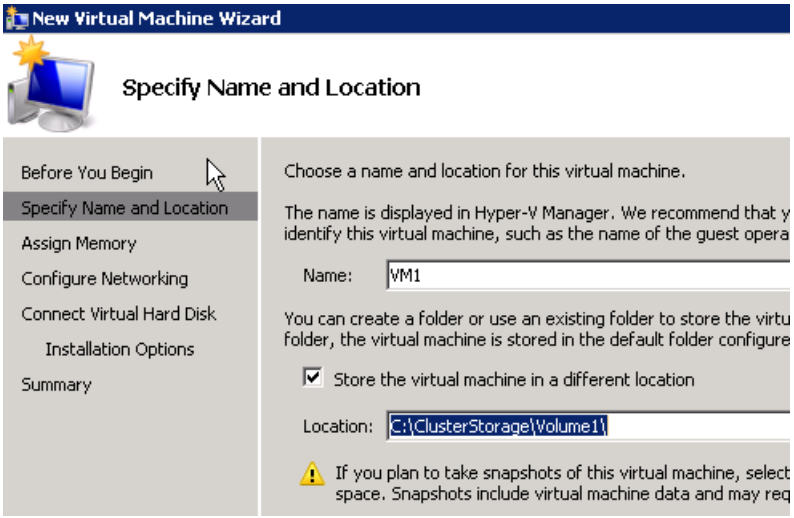


Figure 2-10 Create VM1 in CSV

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13. Connect a virtual hard disk to VM1.

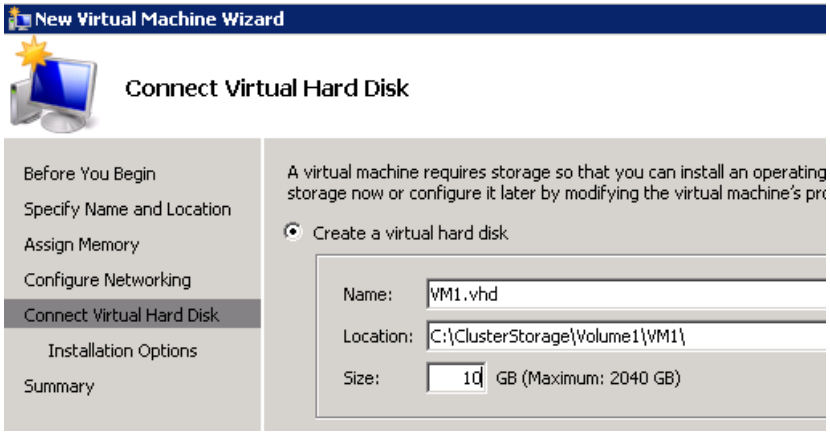


Figure 2-11 Connect a Virtual Hard Disk

14. Create a second virtual machine named VM2 on the Hyper-V cluster and set its storage location to a second CSV. Then, create a new protection group on the DPM server to back up both VMs.

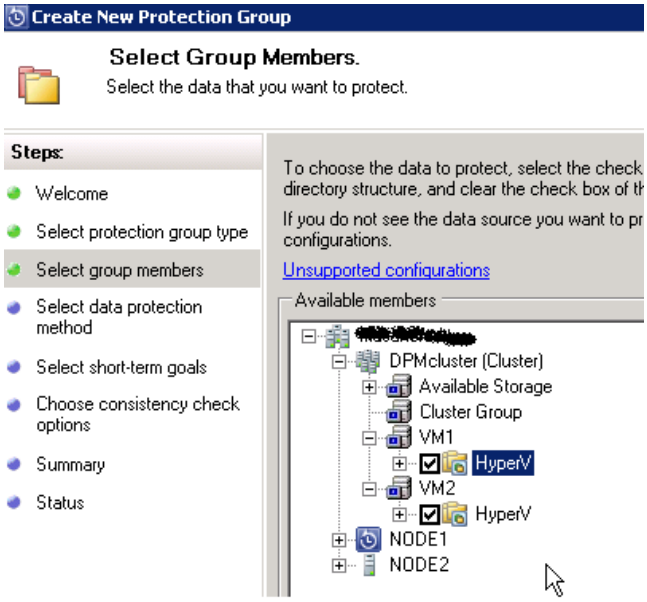


Figure 2-12 Create VM2

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15. Like standalone scenarios, whenever a backup job is executed, DPM triggers a snapshot on the QSAN XN8124D, and the snapshot is mounted to the cluster node that currently owns the VM.

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3. CONCLUSION

Using the QSAN XInsight VSS hardware provider prevents VMs from entering "redirected I/O mode" when DPM backups are performed on VMs on different Hyper-V cluster nodes within the same CSV. This ensures that I/O always resides on the node owning the disk partition throughout the backup window, thus guaranteeing backup and application performance.

The combination of System Center DPM 2025, Windows Server 2025, and the QSAN XInsight VSS hardware provider provide system validation for hardware VSS-based systems on both standalone hosts and Hyper-V clusters using CSV.

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4. APPENDIX

4.1. Apply To

- QSM firmware 4.2.3 and later
- XInsight version 1.6.3 or later

4.2. Reference

Product Page

- XCubeNXT 8100 Series

Document

- QSM 4 Software Manual
- XInsight Software Manual

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