

How to provision physical storage to StarWind Virtual SAN Controller Virtual Machine

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StarWind Documents



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About StarWind

StarWind is a pioneer in virtualization and a company that participated in the development of this technology from its earliest days. Now the company is among the leading vendors of software and hardware hyper-converged solutions. The company's core product is the years-proven StarWind Virtual SAN, which allows SMB and ROBO to benefit from cost-efficient hyperconverged IT infrastructure. Having earned a reputation of reliability, StarWind created a hardware product line and is actively tapping into hyperconverged and storage appliances market. In 2016, Gartner named StarWind “Cool Vendor for Compute Platforms” following the success and popularity of StarWind HyperConverged Appliance. StarWind partners with world-known companies: Microsoft, VMware, Veeam, Intel, Dell, Mellanox, Citrix, Western Digital, etc.

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Introduction

This article provides a guide on provisioning physical storage to StarWind Virtual SAN Controller Virtual Machine (CVM). It applies to both StarWind Virtual SAN and StarWind Virtual SAN Free versions, specifically:

- Version V8 (build 15260, CVM Version 20231016 and later)
- Version V8 (build 15260, OVF Version 20230901 or earlier)

Recommended Configurations

When provisioning physical storage to StarWind Virtual SAN (VSAN) CVM, adhere to the following best practices:

- Ensure that all physical drives are connected through an HBA or RAID controller.
- Deploy StarWind VSAN CVM on each server that will be used for configuring fault-tolerant standalone or highly available storage.
- Store StarWind VSAN CVM on a separate storage device accessible to the hypervisor host (e.g., SSD, HDD).
- Add HBA, RAID controllers, or NVMe SSD drives to StarWind CVM via a passthrough device.

Platform-Specific Instructions

Microsoft Hyper-V

- Add an HBA or RAID controller via a Discrete Device Assignment (DDA) passthrough device. For detailed instructions, refer to [Microsoft's documentation on DDA](#).

VMware vSphere/ESXi

- Add an HBA or RAID controller via a PCI Device to a Virtual Machine.
- If an HBA card cannot be passed through, physical disks can be added to VSAN CVM as Raw Device Mapping (RDM) disks.
- If a single RAID controller is installed on the server, the storage can be added to VSAN CVM as an RDM disk. For detailed instructions, refer to [VMware's documentation on adding an RDM disk](#).

KVM (Proxmox, oVirt, RHEV)

- Add an HBA, RAID controller, or NVMe SSD drives via a PCI Device to a Virtual

Machine.

- Ensure that the KVM host has IOMMU support enabled in the kernel to use PCIe passthrough for the RAID Controller, HBA, or NVMe drives. Update the GRUB configuration file as follows:
 - For Intel CPUs: Add **intel_iommu=on iommu=pt** to the **GRUB_CMDLINE_LINUX_DEFAULT** line in the **/etc/default/grub** file.
 - For AMD CPUs: Add **iommu=pt** to the **GRUB_CMDLINE_LINUX_DEFAULT** line in the **/etc/default/grub** file.








Useful Links

- **Add a PCI Device to a Hyper-V Virtual Machine:** Follow the instructions from Microsoft on how to add a PCI device to StarWind VSAN CVM: [Microsoft DDA Documentation](#)
- **Add an RDM Disk to a VMware vSphere ESXi Virtual Machine:** Follow the instructions from VMware on how to add an RDM disk to a StarWind VSAN CVM: [VMware RDM Disk Documentation](#)

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