StarWind Appliances: Quick Start Guide

2026

TECHNICAL PAPERS

Trademarks

Changes

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Technical Support and Services

If you have questions about installing or using this software, check this and other documents first - you will find answers to most of your questions on the Technical Papers webpage or in StarWind Forum. If you need further assistance, please contact us .

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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Annotation

Relevant products

StarWind HCI Appliance (HCA), StarWind Backup Appliance, StarWind VTL Appliance.

Purpose

StarWind appliances are complete turnkey solutions designed to eliminate the unnecessary complexity and high costs of IT infrastructures. These appliances integrate seamlessly into any environment, enhancing application performance and availability. The StarWind support team simplifies the process further by assisting each customer with migration and integration.

In addition, StarWind appliances minimize customer effort in monitoring and supporting the infrastructure. By combining monitoring with proprietary analytics, StarWind ProActive Support ensures exceptional uptime and offers insights for resource planning, along with upgrade recommendations.

A full set of up-to-date technical documentation is always available here.

For any technical inquiries, please visit Frequently Asked Questions page, or use the support form to contact StarWind technical support department.

IMPORTANT: Before following any procedures described in this document, please read the safety instructions provided with the system.

Audience

This document is intended for StarWind customers who wish to learn how to get started with the StarWind appliance.

Expected Result

Upon completing this guide, users will know how to set up and deploy StarWind appliances.

System Diagram And Description

The description and network interconnection diagrams for each type of StarWind Appliance are provided below.

Starwind Hci Appliance (Hca) On Hyper-V

Consists of two or three Dell or SuperMicro servers. Each server runs Windows Server with a Hyper-V role and the Failover Cluster feature installed. Depending on the StarWind HCA configuration, the StarWind Virtual SAN service runs on Windows Server as a Windows-based application or inside a Linux-based storage controller VM (for StarWind HCA with NVMe storage).

The servers form a Microsoft Failover Cluster and are managed with the StarWind Command Center, which is preconfigured for appliance management and monitoring. Once the servers arrive onsite, they are joined to the domain, and the cluster is created.

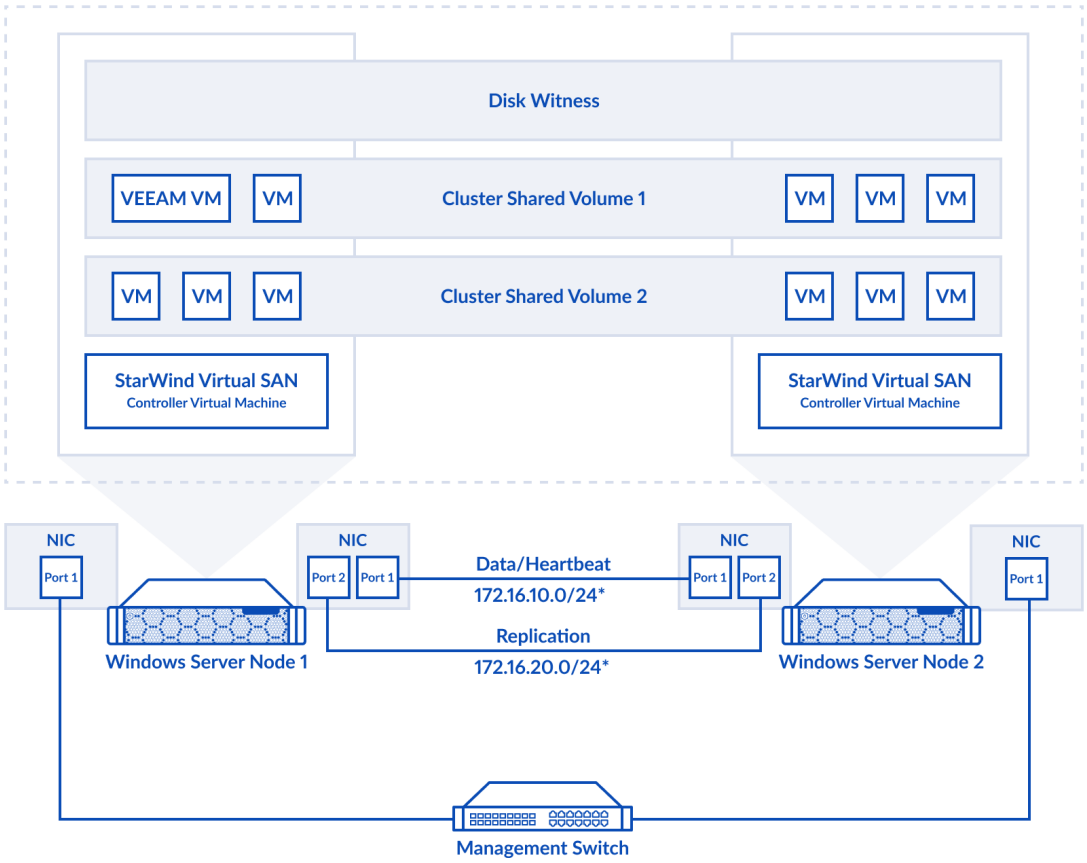
The StarWind VSAN service synchronizes storage between the servers and presents the highly available storage to the cluster as iSCSI or NVMe-oF targets. In order to allow the StarWind VSAN service to replicate storage between the servers, dedicated Mellanox-based network interfaces (25 Gbps each) are used to achieve the best performance. There are also dedicated interfaces for data to discover the iSCSI/NVMe-oF targets and connect StarWind VSAN storage (25 Gbps each). The interfaces for replication and data, by default, should be directly connected between the servers with SFP28 cables to avoid additional points of failure, like switches, and to ensure that no additional factors influence storage performance.

By default, in a 2-node setup, the 172.16.10.x subnet is used for the discovery and connections of the iSCSI/NVMe-oF targets (data connections) as well as StarWind VSAN heartbeat traffic, while the 172.16.20.x subnet is used for replication traffic.

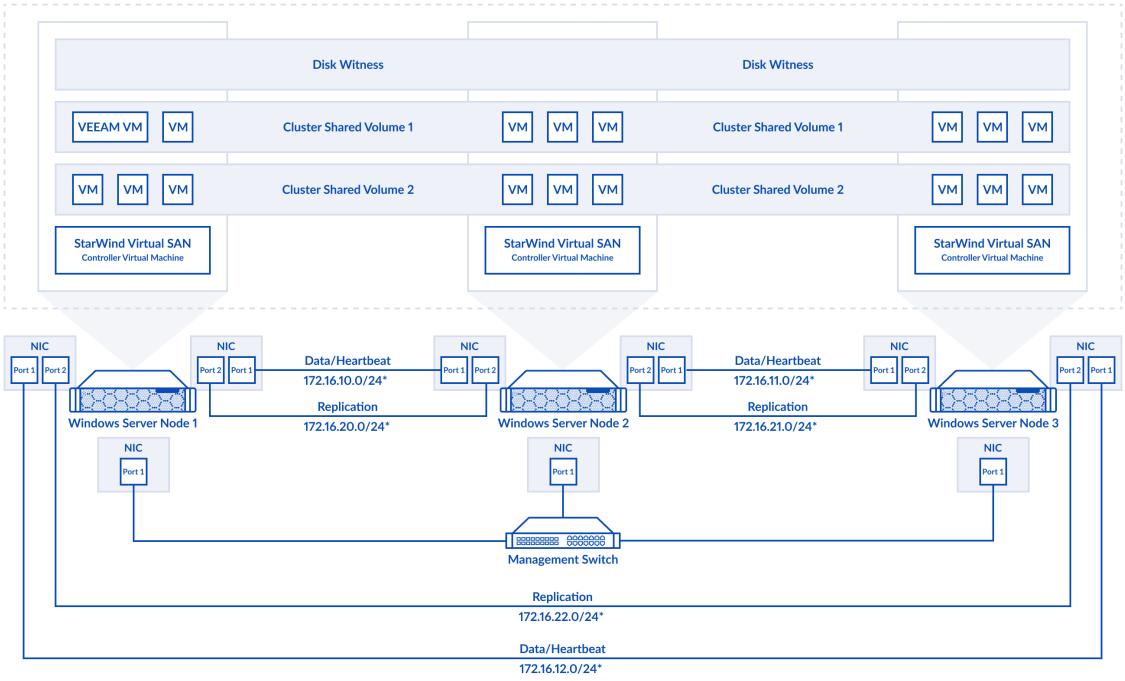
By default, in a 3-node setup, the 172.16.10.x, 172.16.11.x, and 172.16.12.x subnets are used for the discovery and connections of the iSCSI/NVMe-oF targets (data connections) as well as StarWind VSAN heartbeat traffic, while the 172.16.20.x, 172.16.21.x, and 172.16.22.x subnets are used for replication traffic.

StarWind HCA may include Veeam Availability Suite as a backup solution.

The diagrams below illustrate the network and storage configuration of the solution:



2-node StarWind HCI Appliance on Hyper-V configuration diagram



3-node StarWind HCI Appliance on Hyper-V configuration diagram

To review all server technical specifications, please refer to the corresponding Data Sheet

Starwind Hci Appliance (Hca) On Vmware Esxi

Consists of two or three Dell or SuperMicro servers. Each server runs the ESXi hypervisor and a Linux-based storage controller virtual machine with the StarWind VSAN service inside.

The StarWind VSAN service synchronizes storage between the controller VMs on ESXi servers and presents the highly available storage to the ESXi level as iSCSI or NVMe-oF targets.

In order to allow the StarWind VSAN service to replicate storage between the servers, dedicated Mellanox-based network interfaces (25 Gbps each) are used to achieve the best performance. There are also dedicated interfaces for data to discover the iSCSI/NVMe-oF targets and connect StarWind VSAN storage (25 Gbps each). The interfaces for replication and data, by default, should be directly connected between the servers with SFP28 cables to avoid additional points of failure, like switches, and to ensure that there are no additional factors that might influence storage performance.

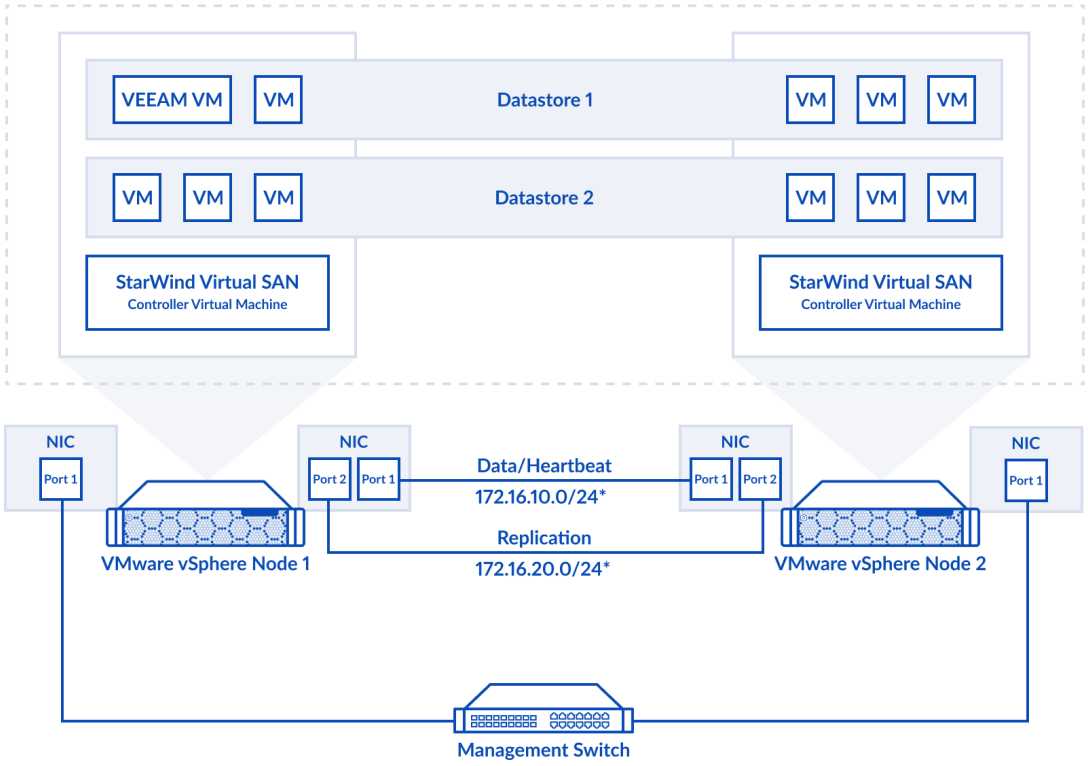
By default, in a 2-node setup, the 172.16.10.x subnet is used for the discovery and connections of the iSCSI/NVMe-oF targets (data connections) as well as StarWind VSAN heartbeat traffic, while the 172.16.20.x subnet is used for the replication traffic.

By default, in a 3-node setup, the 172.16.10.x, 172.16.11.x, and 172.16.12.x subnets are used for the discovery and connections of the iSCSI/NVMe-oF targets (data connections) as well as StarWind VSAN heartbeat traffic, while the 172.16.20.x, 172.16.21.x, and 172.16.22.x subnets are used for the replication traffic.

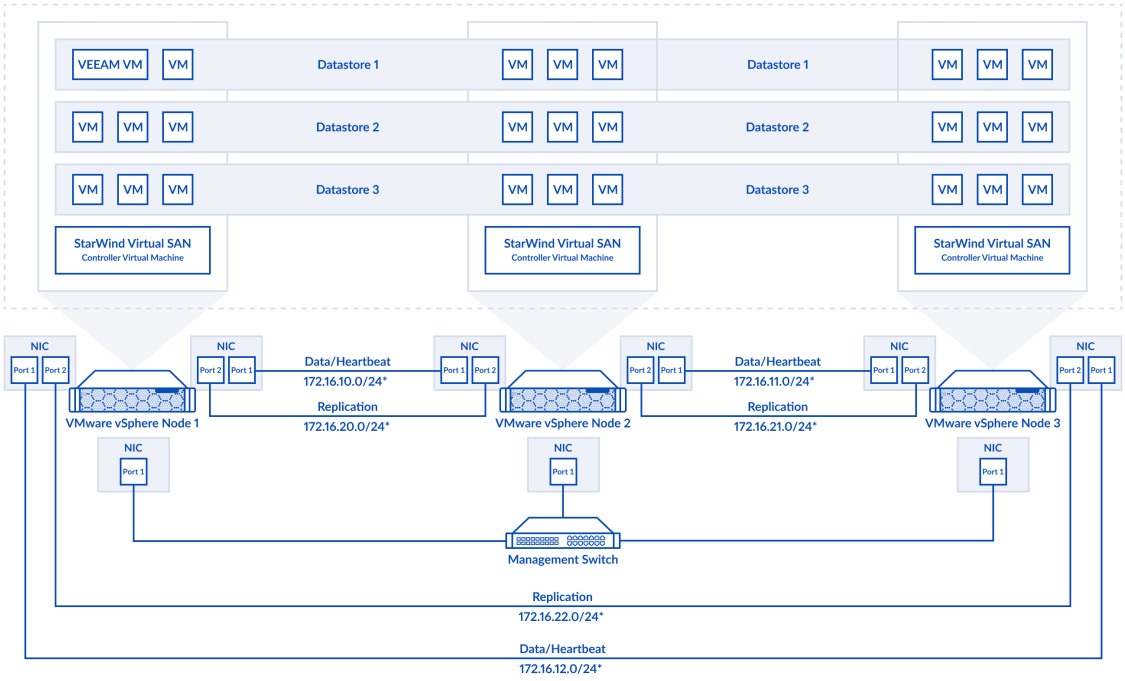
Additionally, the vCenter Server Appliance and StarWind vCenter plugin can be configured during the final cluster configuration.

StarWind HCA may include Veeam Availability Suite as a backup solution.

The diagrams below illustrate the network and storage configuration of the solution:



2-node StarWind HCI Appliance (HCA) on VMware ESXi configuration diagram.



3-node StarWind HCI Appliance (HCA) on VMware ESXi configuration diagram.

To review all server technical specifications, please refer to the corresponding Data Sheet.

Starwind Hci Appliance (Hca) On Proxmox Virtual Environment

Consists of two or three Dell or SuperMicro servers. Each server runs Proxmox VE and a Linux-based storage controller virtual machine with the StarWind VSAN service inside.

The StarWind VSAN service synchronizes storage between the controller VMs on Proxmox servers and presents the highly available storage to the Proxmox level as iSCSI or NVMe-oF targets.

In order to allow the StarWind VSAN service to replicate storage between the servers, dedicated Mellanox-based network interfaces (25 Gbps each) are used to achieve the best performance. There are also dedicated interfaces for data to discover the iSCSI/NVMe-oF targets and connect StarWind VSAN storage (25 Gbps each). The interfaces for replication and data, by default, should be directly connected between the servers with SFP28 cables to avoid additional points of failure, like switches, and to

ensure that no additional factors influence storage performance.

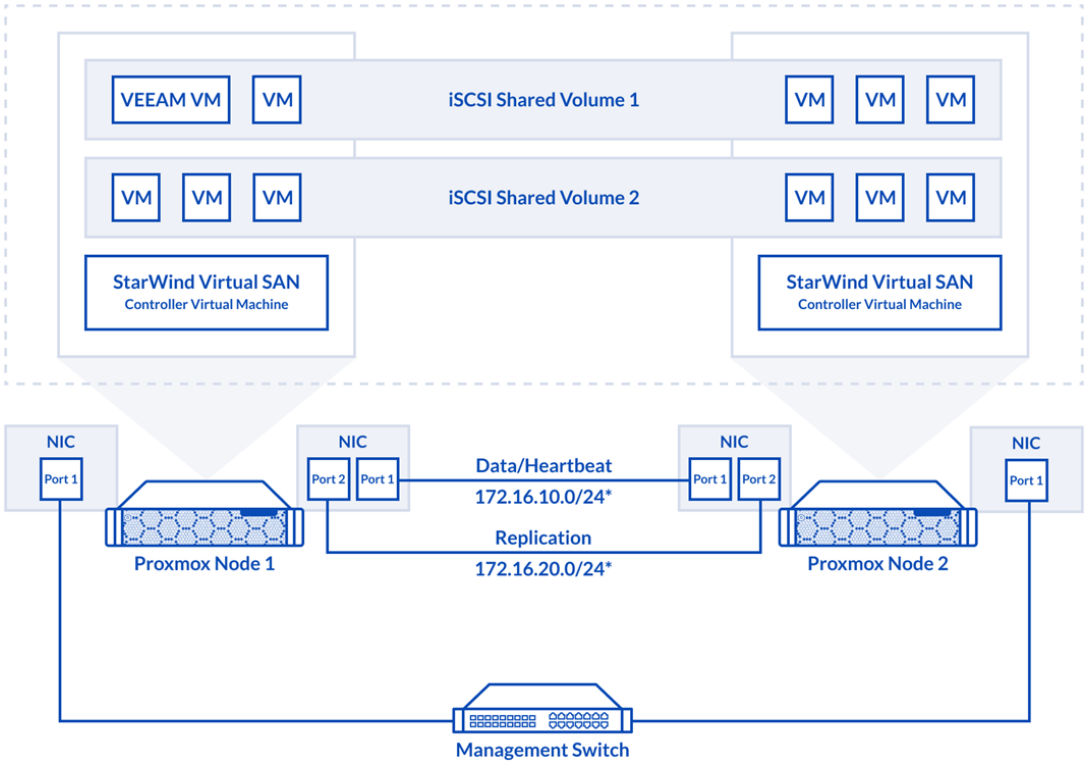
By default, in a 2-node setup, the 172.16.10.x subnet is used for the discovery and connections of the iSCSI/NVMe-oF targets (data connections) as well as StarWind VSAN heartbeat traffic, while the 172.16.20.x subnet is used for replication traffic.

By default, in a 3-node setup, the 172.16.10.x, 172.16.11.x, and 172.16.12.x subnets are used for the discovery and connections of the iSCSI/NVMe-oF targets (data connections) as well as StarWind VSAN heartbeat traffic, while the 172.16.20.x, 172.16.21.x, and 172.16.22.x subnets are used for replication traffic.

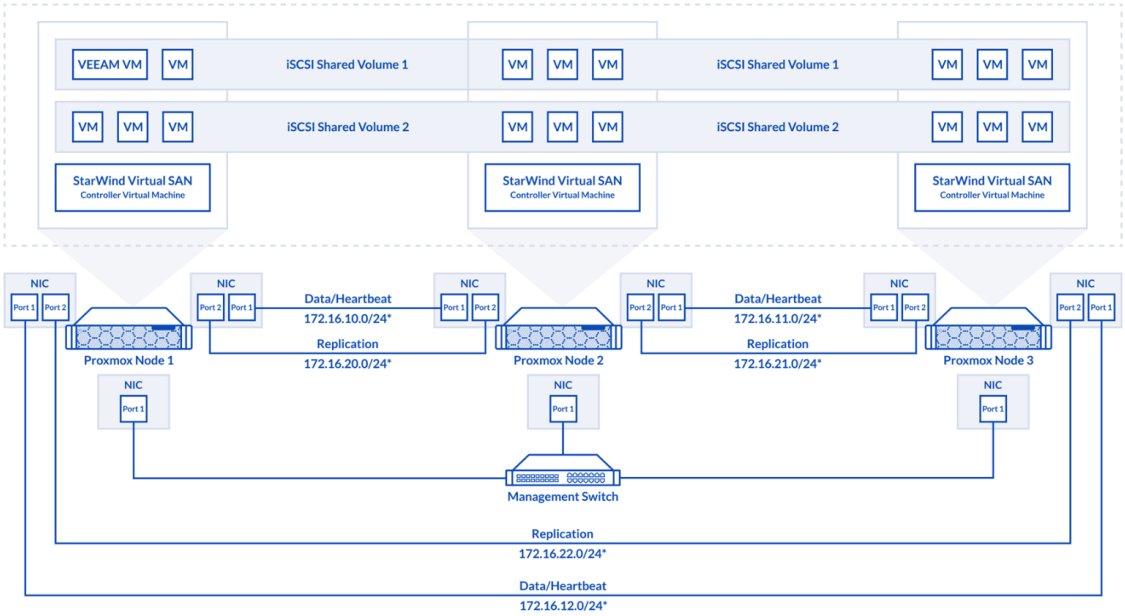
Since the 2-node Proxmox cluster requires a quorum device, it can be configured during the final cluster setup on the backup server or any computer connected to the cluster.

StarWind HCA may include Veeam Backup and Replication as backup software.

The diagrams below illustrate the network and storage configuration of the solution:



2-node StarWind HCI Appliance (HCA) on Proxmox VE configuration diagram.



3-node StarWind HCI Appliance (HCA) on Proxmox VE configuration diagram.

Starwind Hci Appliance (Hca) For Video Surveillance And Analytics

Consists of two or three Dell servers. Each server runs either Windows Server or ESXi. Depending on the StarWind HCA configuration, the StarWind Virtual SAN service runs on Windows Server as a Windows application or inside a Linux-based storage controller VM.

The servers form either a Microsoft Failover Cluster or a VMware Cluster that can run VMS (Video Management Software) and other generic VMs. Once the servers are onsite, they can be joined to the domain, and the cluster is created.

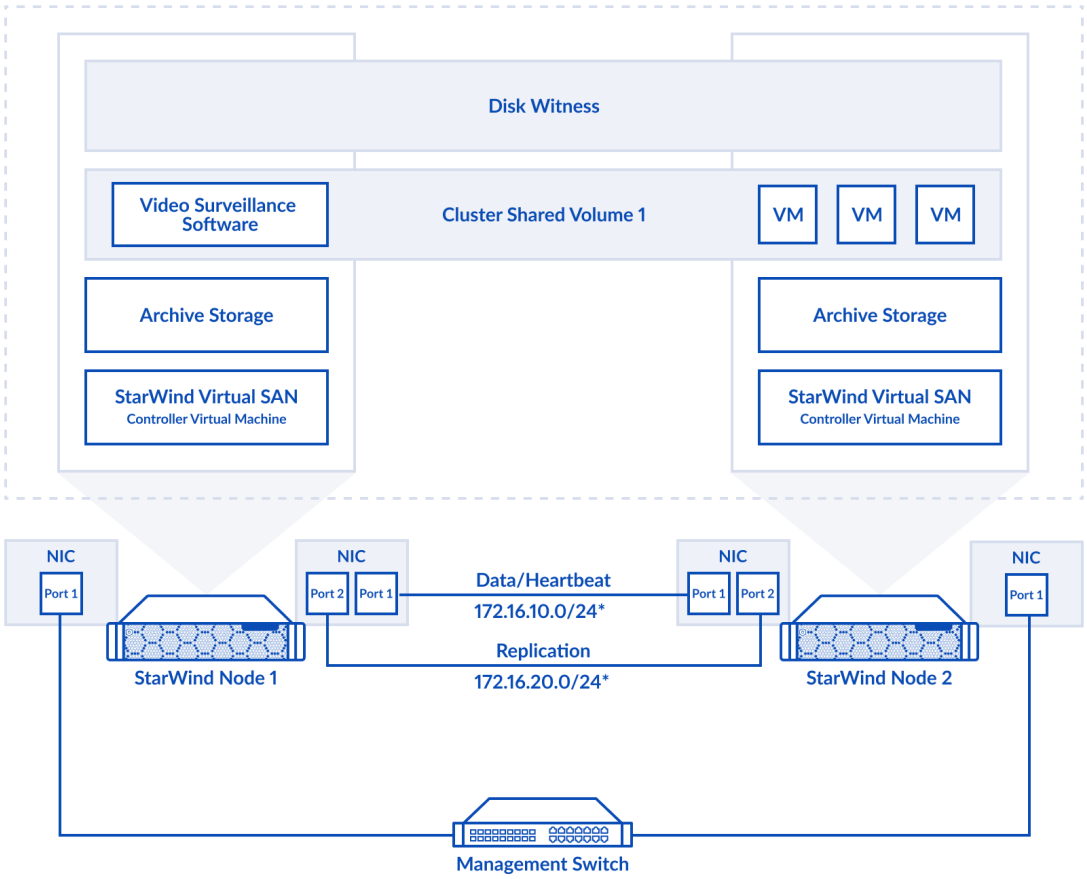
The StarWind VSAN service synchronizes storage between the servers and presents the highly available storage to the cluster as iSCSI or NVMe-oF targets. In order to allow the StarWind VSAN service to replicate storage between the servers, dedicated Mellanox-based network interfaces (25 Gbps each) are used to achieve the best performance. There are also dedicated interfaces for data to discover the iSCSI/NVMe-oF targets and connect StarWind VSAN storage (25 Gbps each). The interfaces for replication and data, by default, should be directly connected between the servers with SFP28 cables to avoid additional points of failure, such as switches, and to ensure that no external factors impact storage performance.

By default, in a 2-node setup, the 172.16.10.x subnet is used for the discovery and connections of the iSCSI/NVMe-oF targets (data connections), as well as StarWind VSAN heartbeat traffic, while the 172.16.20.x subnet is used for replication traffic.

Storage is designed and configured for video surveillance needs. StarWind VSAN-based highly available storage is used for the video surveillance application VM (with hot and archive capacity separated).

Separate StarWind HA storage is connected inside the video surveillance application VM for hot data, while dedicated standalone StarWind storage is connected inside a VM for archive video recordings.

The diagram below illustrate the network and storage configuration of the solution:



2-node StarWind HCI Appliance (HCA) for Video Surveillance and Analytics configuration diagram

To review all server technical specifications, please refer to the corresponding Data

Sheet.

Starwind Backup And Starwind Vtl Appliance

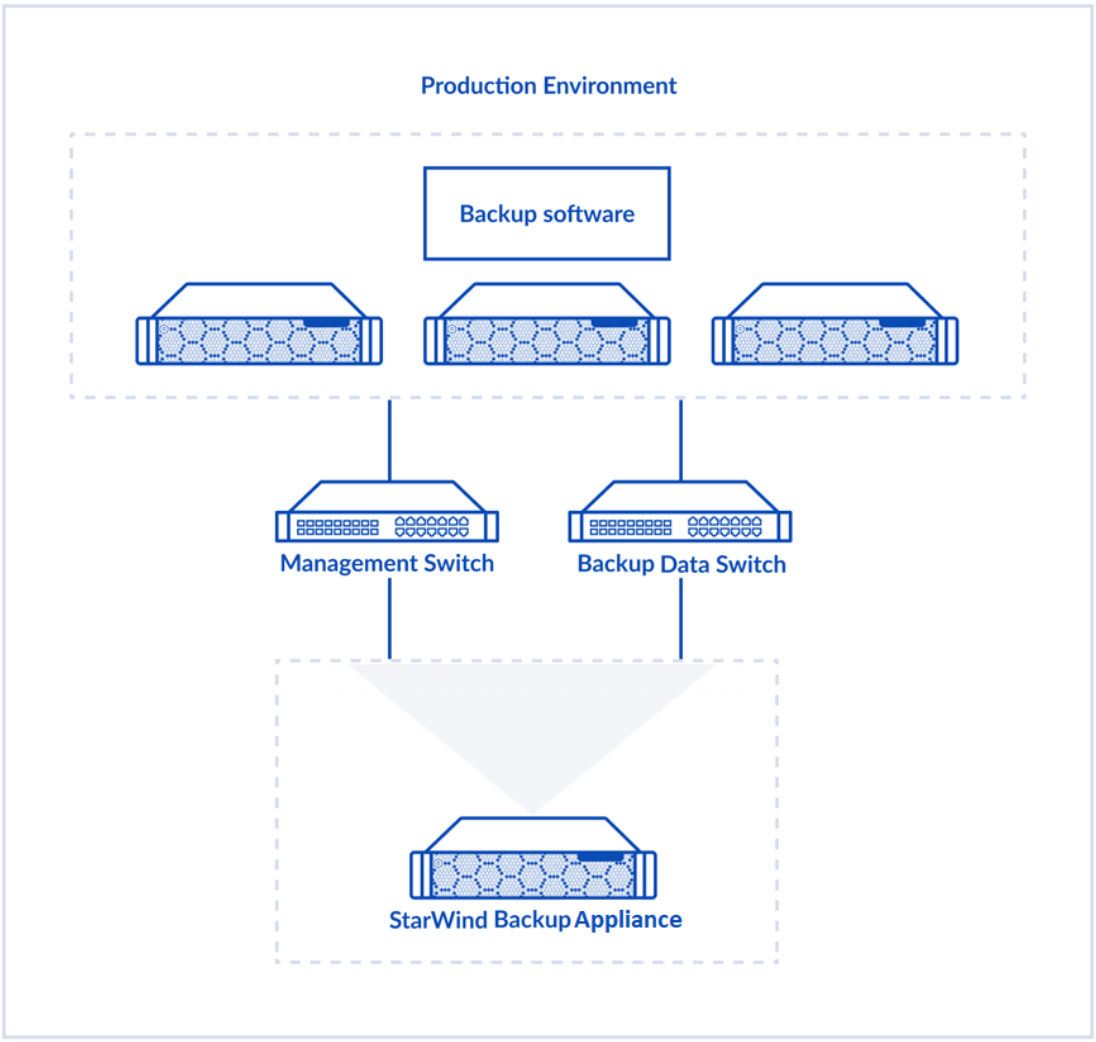
Consists of a single Dell or SuperMicro server with a hypervisor of choice installed, hosting a Linux-based storage controller virtual machine. The controller VM is used to aggregate the host's storage and create a storage repository for the backup software. If Veeam B&R is used, a Linux Hardened Repository can be preconfigured.

Veeam B&R can be deployed either on the virtual machine running on the StarWind Backup Appliance or on a separate computer or on the production cluster. It is recommended to place a separate Veeam proxy machine in Virtual Appliance (HotAdd) mode within the production cluster if Veeam B&R is running on the StarWind Backup Appliance.

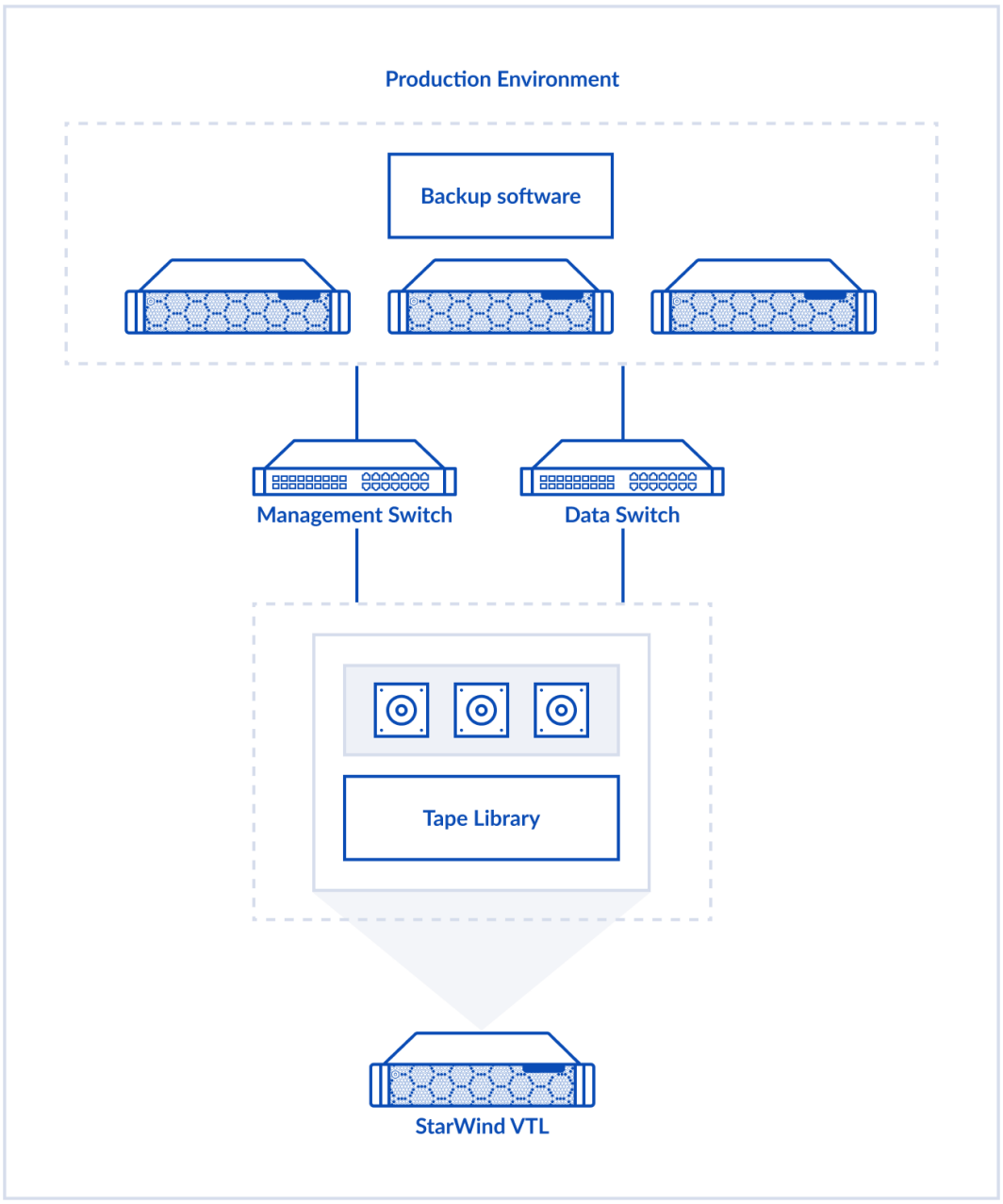
To achieve optimal performance, dedicated Mellanox-based network interfaces (25 Gbps each) can be preconfigured for the backup data connection. These interfaces can be directly connected to the production servers using SFP28 cables, minimizing additional points of failure, such as switches, and ensuring that no external factors impact storage performance.

StarWind Virtual Tape Library can be installed if required in the questionnaire.

The diagrams below illustrate the network and storage configuration of the solution:



StarWind Backup Appliance configuration diagram



StarWind VTL Appliance configuration diagram

To review all server technical specifications, please refer to the corresponding Data Sheet.

Physical Setup

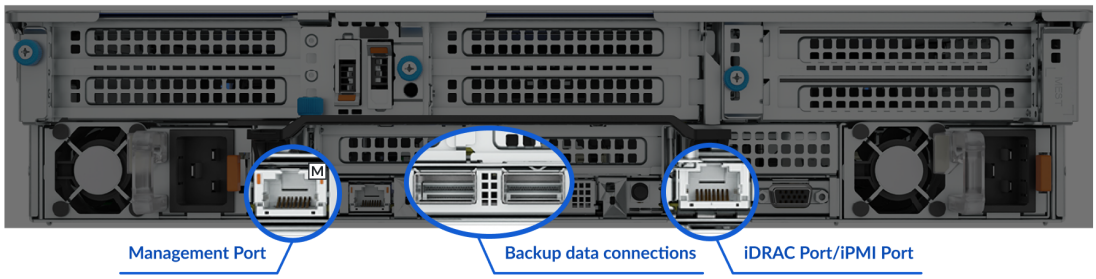
Each server has a label on the luggage tag on the front of the system that identifies its number. The management port that should be connected to the switch is labeled as “M”. IDRAC/IPMI port should be connected to the switch as well. Please keep in mind that the servers should be placed in the rack in a proper sequence according to their numbers from top to bottom.

For StarWind Backup Appliance or StarWind VTL Appliance:

Management (1 Gbps) and iDRAC/IPMI interface should be connected to the network switch.

10 Gbps/25 Gbps network interfaces are used for the server connection (direct or via switch) to the infrastructure for a dedicated backup traffic.

NOTE: Server view and ports location can be different depending on servers model and configuration.



For StarWind HCI Appliance (HCA):

The servers should be placed in the rack in a proper sequence according to their numbers from top to bottom.

The network interfaces for the StarWind Data and Replication are labeled with numbers for convenience.

When racked, the labeled 25 Gbps network interfaces that are intended to be used for StarWind Data and Replication should be connected directly between the servers using SFP28 cables in the following way:

2-nodes setup:

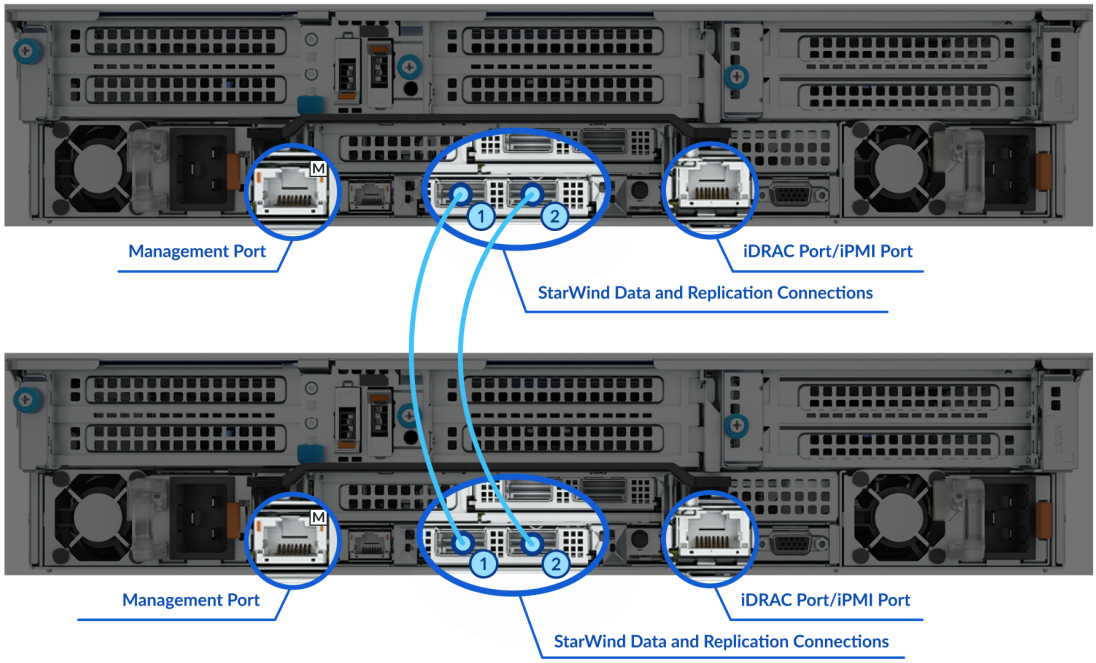
Port 1 on the first server → Port 1 on the second server

Port 2 on the first server → Port 2 on the second server

Management (1 Gbps) and iDRAC (IPMI) interfaces should be connected to the network switch.

NOTE: Other not used network interfaces can be used for iSCSI/NVMe-OF targets connection.

NOTE: Servers view and ports location can be different depending on servers model and configuration.



3-nodes setup:

Port 1 on the first server → Port 1 on the second server.

Port 2 on the first server → Port 2 on the second server.

Port 3 on the first server → Port 3 on the third server.

Port 4 on the first server → Port 4 on the third server.

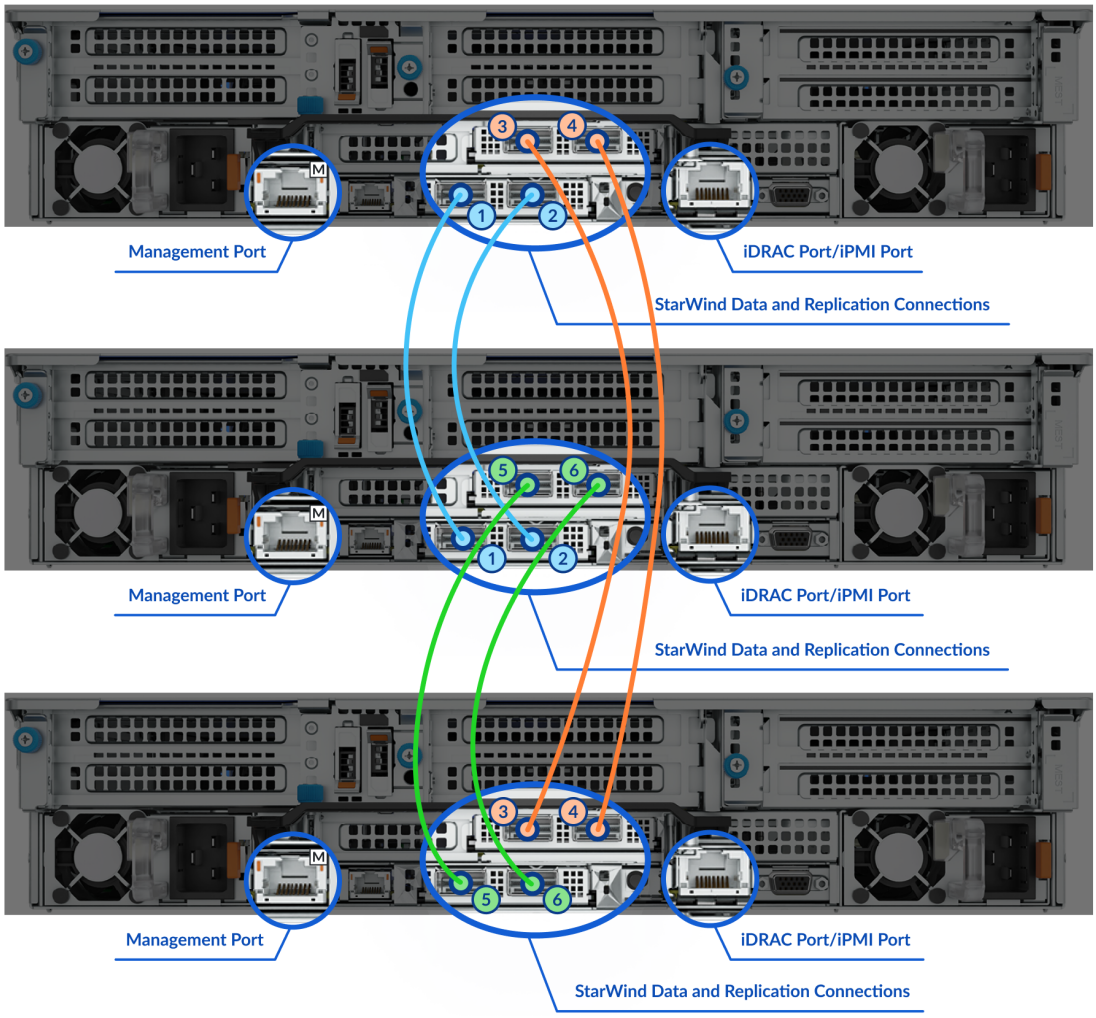
Port 5 on the second server → Port 5 on the third server.

Port 6 on the second server → Port 6 on the third server.

Management (1 Gbps) and iDRAC (IPMI) interfaces should be connected to the network switch.

NOTE: Other not used network interfaces can be used for iSCSI/NVMe-OF targets connection.

NOTE: Servers view and ports location can be different depending on servers model and configuration.



Plug all the servers and the switch into an AC power grid using the enclosed power cables.

Turn on the equipment.

Servers Naming And Credentials

Servers for StarWind HCI Appliance on Hyper-V and StarWind HCI Appliance for Video Surveillance and Analytics by default are configured with the following names:

Windows server name	StarWind storage controller VM name
SW-HCA-01	SW-HCA-CVM-01
SW-HCA-02	SW-HCA-CVM-02
SW-HCA-03	SW-HCA-CVM-03

Servers for StarWind HCI Appliance on VMware ESXi or Proxmox VE by default are configured with the following names:

ESXi server name	StarWind storage controller VM name
SW-HCA-01	SW-HCA-CVM-01
SW-HCA-02	SW-HCA-CVM-02
SW-HCA-03	SW-HCA-CVM-03

The server for StarWind Backup Appliance by default is configured with the following name:

Windows server name	StarWind storage controller VM name
SW-BA-01	SW-BA-CVM-01

The server for StarWind VTL Appliance by default is configured with the following name:

Windows server name
SW-VTLA-01

The default credentials are:

Instance	Login	Password
iDRAC (Dell server)	root	calvin
IPMI (SuperMicro server)	ADMIN	ADMIN
Windows Server	administrator	StarWind2015
VMware ESXi server	root	StarWind2015

VMware vCenter	administrator@vsphere.local	StarWind2015!
Proxmox VE	root	StarWind2015!
StarWind Linux-based storage controller VM	user	StarWind2015!

NOTE: The credentials might be different and could be provided separately by StarWind support.

NOTE: Since this is a public document, it is highly recommended to change default passwords after the first login to minimize security risks!

Starting The Environment

Starwind Hci Appliance (Hca) On Hyper-V And Starwind Starwind Hci Appliance For Video Surveillance And Analytics

- Once the servers are racked and powered on, log in to each server using the credentials from the previous section. The servers were preconfigured according to the information provided by the customer in the StarWind Preconfiguration Questionnaire. Please use it to retrieve the names and IP addresses.
  NOTE: It is highly recommended to change the default passwords after the first login!
- Ensure that the StarWind Storage Controller VMs are started and running. Open the StarWind Management Console from the Start menu, then from the system tray.
  The Management Console is the Graphical User Interface (GUI) that is part of the StarWind Virtual SAN Windows application. It allows you to connect to the StarWind service on each host and perform storage-related operations (such as creating or reconfiguring storage devices on the available target servers) from a single location.
  If required, the StarWind Management Console can be installed on any Windows-based machine in the same network. There is no need to apply a license file to install the StarWind Management Console. The latest version of StarWind VSAN as a Windows application, which includes the StarWind Management Console, can be downloaded via the following link:
  https://www.starwindsoftware.com/release-notes-build
- In the StarWind Management Console, click the “Add Server” button and add each StarWind server (host or VM) by its IP address (refer to the StarWind Preconfiguration Questionnaire for details). Ensure that all servers are accessible

by clicking the “Connect” button in the StarWind Management Console.
- When all servers are connected, expand each target to access the HAImage device properties, and press the “Exit Maintenance Mode” button on each HAImage device. This will bring the devices and targets online.
- Join the servers to the existing domain using these instructions: Join a Computer to a Domain.

The Microsoft Failover Cluster will be created during the final configuration remote session. Please contact StarWind support to schedule it: support@starwind.com.

Starwind Hci Appliance (Hca) On Vmware Esxi

- Once the servers are racked and the StarWind Management Console is installed, please power on the servers.
- Open the web browser on the computer that is connected to the same network as the ESXi servers and log in to ESXi on each server using the credentials from the previous section. The servers were preconfigured according to the information provided by the customer in the StarWind Preconfiguration Questionnaire. Please use it to retrieve the names and IP addresses.
  NOTE: It is highly recommended to change the default passwords after the first login!
- Make sure that the StarWind Storage Controller VMs are started and running.
- Using the web browser, please connect to the StarWind Storage Controller VMs. Please use the IP addresses from the StarWind Preconfiguration Questionnaire and the default credentials from the previous section.
- Once logged into the StarWind Web Console, navigate to the Storage section and open LUNs to see information about the StarWind HA device. Select the LUN and press the Manage LUN button. In the appeared window, go to Settings and press the Disable Maintenance Mode button. Perform this operation for each LUN (StarWind device) to bring the targets online.
- Open the ESXi web console and check the availability of StarWind datastores. Do a storage rescan if required.

As mentioned before, each StarWind Storage Controller VM has the StarWind VSAN service running, which synchronizes storage between StarWind Storage Controller VMs on other ESXi hosts and shares it over the data networks. StarWind HA storage is presented as iSCSI/NVMe-oF targets via dedicated interfaces configured on each VM and ESXi host. Each Storage Controller VM has a storage rescan script that is executed when the StarWind iSCSI target changes its state and becomes available. The script runs the storage rescan command on the ESXi server and sets the Round Robin MPIO policy for the StarWind device there. To execute the script without using the root user, a separate user “Health” with the role “StarWind” is created on each ESXi host.Optionally, the

Windows-based StarWind Management Console can be used to manage StarWind HA devices. It can be installed on any Windows-based machine that is on the same network and has access to the StarWind Storage Controller virtual machines.

The Management Console is the Graphical User Interface (GUI) that is part of the StarWind Virtual SAN Windows application. It allows you to connect to the StarWind service on each host and perform storage-related operations (for example, reconfiguration of storage devices on the available target servers) from a single location.

The latest version of StarWind VSAN as a Windows application, which contains the StarWind Management Console, can be downloaded via the following link: https://www.starwindsoftware.com/release-notes-build.

The vCenter Appliance can be deployed on demand during the final configuration remote session. Please contact StarWind support to schedule it: support@starwind.com

Starwind Hci Appliance (Hca) On Proxmox Ve

- Once the servers are racked and the StarWind Management Console is installed, please power on the servers.
- Open the web browser on the computer that is connected to the same network as the Proxmox servers and log in to Proxmox on each server using the credentials from the previous section. The servers were preconfigured according to the information provided by the customer in the StarWind Preconfiguration Questionnaire. Please use it to retrieve the names and IP addresses.
  NOTE: It is highly recommended to change the default passwords after the first login!
- Make sure that the StarWind Storage Controller VMs are started and running.
- Using the web browser, please connect to the StarWind Storage Controller VMs. Please use the IP addresses from the StarWind Preconfiguration Questionnaire and the default credentials from the previous section.
- Once logged into the StarWind Web Console, navigate to the Storage section and open LUNs to see information about the StarWind HA device. Select the LUN and press the Manage LUN button. In the window that appears, go to Settings and press the Disable Maintenance Mode button. Perform this operation for each LUN (StarWind device) to bring the targets online.
- Open the Proxmox console and check the availability of the StarWind shared volumes.

Optionally, the Windows-based StarWind Management Console can be used to manage StarWind HA devices. It can be installed on any Windows-based machine that is on the same network and has access to the StarWind Storage Controller virtual machines.

The Management Console is the Graphical User Interface (GUI) that is part of the StarWind Virtual SAN Windows application. It allows you to connect to the StarWind service on each host and perform storage-related operations (for example, reconfiguration of storage devices on the available target servers) from a single location.

The latest version of StarWind VSAN as a Windows application, which contains the StarWind Management Console, can be downloaded via the following link: https://www.starwindsoftware.com/release-notes-build.

A quorum device for the 2-node Proxmox cluster can be configured during the final configuration remote session. Please contact StarWind support to schedule it: support@starwind.com

Starwind Backup And Starwind Vtl Appliances

- Once the server is racked and powered on, log in to the server using the credentials from the previous section. The server was preconfigured according to the information provided by the customer in the StarWind Preconfiguration Questionnaire. Please use it to retrieve the names and IP addresses.
  NOTE: It is highly recommended to change the default passwords after the first login!
  The integration of the backup repository with the backup software can be done during the configuration remote session. Please contact StarWind support to schedule it: support@starwind.com

Servers Restart, Maintenance, And Updates Installation

Steps on how to restart servers with StarWind VSAN installed: https://knowledgebase.starwindsoftware.com/maintenance/how-to-restartshutdown-servers-with-starwind-vsan-installed/

Updating Firmware and Drivers on Dell EMC PowerEdge Servers: https://www.dell.com/support/kbdoc/en-us/000128194/updating-firmware-and-drivers-on-dell-emc-poweredge-servers

StarWind VSAN update steps are described in the KB below:

StarWind VSAN Windows application:
https://knowledgebase.starwindsoftware.com/guidance/upgrading-from-any-starwind-version-to-any-starwind-version/

StarWind Controller Virtual Machine:
https://knowledgebase.starwindsoftware.com/guidance/how-to-update-starwind-virtual-san-deployed-as-a-controller-virtual-machine-cvm/

Warranty And Support

StarWind Support is a single point of contact for resolving all software and hardware issues related to StarWind appliances.

Each appliance is covered by ProActive Premium Support Support Plan that is described at the following link: https://www.starwindsoftware.com/support

For any technical inquiries to contact StarWind technical support department please use the support form at https://www.starwindsoftware.com/support-form, send an email at support@starwind.com or call StarWind Support line on +1 617 829 4499 (365/24/7).

Conclusion

StarWind appliances are robust solutions designed to enhance application performance and availability. By following this guide, system administrators can confidently set up, deploy, and maintain their StarWind appliance and prepare them for the final configuration with StarWind support.

StarWind Appliances are robust solutions designed to enhance application performance and availability. By following this guide, system administrators can confidently set up, deploy, and maintain their StarWind Appliances.

For any technical inquiries, please use the support form to contact StarWind technical support department.

Contacts

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Customer Support Portal: https://www.starwind.com/support

Support Forum: https://www.starwind.com/forums

Sales: sales@starwind.com

General Information: info@starwind.com

StarWind

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