

StarWind Virtual SAN: Configuration Guide for VMware vSphere [ESXi], VSAN Deployed as a Controller Virtual Machine (CVM) using Web UI

2024

TECHNICAL PAPERS



StarWind Virtual SAN: Configuration Guide for VMware vSphere [ESXi], VSAN Deployed as a Controller Virtual Machine (CVM) using Web UI



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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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Annotation

Relevant Products

This guide is applicable to StarWind Virtual SAN and StarWind Virtual SAN Free (Version V8 (Build 15260, CVM Version 20231016) and later).

For older versions of StarWind Virtual SAN (Version V8 (Build 15260, OVF Version 20230901) and earlier), please refer to this configuration guide: StarWind Virtual SAN: Configuration Guide for VMware vSphere [ESXi], VSAN Deployed as a Controller VM using PowerShell CLI

Purpose

This guide provides a comprehensive outline on how to deploy and configure StarWind Virtual SAN within the VMware vSphere environment and create StarWind devices using the Web UI. It includes links to the system requirements, RAID settings, best practices, and steps to ensure a seamless setup and integration.

Audience

The guide is created for IT specialists, system administrators, and VMware professionals who are keen on deploying and configuring StarWind Virtual SAN on VMware vSphere.

Expected Result

Users will possess a robust understanding of the steps and best practices for deploying and configuring StarWind Virtual SAN in a VMware vSphere environment.

Starwind Virtual San For Vsphere Vm Requirements

Prior to installing StarWind Virtual SAN Virtual Machines, please make sure that the system meets the requirements, which are available via the following link: https://www.starwindsoftware.com/system-requirements

Storage provisioning

guidelines: https://knowledgebase.starwindsoftware.com/guidance/how-to-provision-phys ical-storage-to-starwind-virtual-san-controller-virtual-machine/

Recommended RAID settings for HDD and SSD disks: https://knowledgebase.starwindsoftware.com/guidance/recommended-raid-settings-for-h



dd-and-ssd-disks/

Please read StarWind Virtual SAN Best Practices document for additional information: https://www.starwindsoftware.com/resource-library/starwind-virtual-san-best-practices

Pre-Configuring The Servers

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



1. ESXi hypervisor should be installed on each host.

2. StarWind Virtual SAN for vSphere VM should be deployed on each ESXi host from an OVF template, downloaded on this page: https://www.starwindsoftware.com/release-notes-build

3. The network interfaces on each node for Synchronization and iSCSI/StarWind



heartbeat interfaces should be in different subnets and connected directly according to the network diagram above. Here, the 172.16.10.x subnet is used for the iSCSI/StarWind heartbeat traffic, while the 172.16.20.x subnet is used for the Synchronization traffic. NOTE: Do not use iSCSI/Heartbeat and Synchronization channels over the same physical link. Synchronization and iSCSI/Heartbeat links and can be connected either via redundant switches or directly between the nodes.

vCenter Server can be deployed separately on another host or as VCSA on StarWind VSAN highly-available storage, created in this guide.

Preparing Environment For Starwind Vsan Deployment

Configuring Networks

Configure network interfaces on each node to make sure that Synchronization and iSCSI/StarWind heartbeat interfaces are in different subnets and connected physically according to the network diagram above. All actions below should be applied to each ESXi server.

NOTE: Virtual Machine Port Group should be created for both iSCSI/ StarWind Heartbeat and the Synchronization vSwitches. VMKernel port should be created only for iSCSI traffic. Static IP addresses should be assigned to VMKernel ports.

NOTE: It is recommended to set MTU to 9000 on vSwitches and VMKernel ports for iSCSI and Synchronization traffic. Additionally, vMotion can be enabled on VMKernel ports.

1. Using the VMware ESXi web console, create two standard vSwitches: one for the iSCSI/ StarWind Heartbeat channel (vSwitch1) and the other one for the Synchronization channel (vSwitch2).



vm ware: ESXi"						
Navigator	Q Networking	2 Networking				
✓ ☐ Host Manage Monitor	Port groups Virtual switches	Physical NICs VMkernel Ni dd uplink 🥒 Edit settings C	Cs TCP/IP stacks Firewall rules Refresh 💮 Actions			
Virtual Machines 0	Name	~	Port groups			
Storage	vSwitch0		2			
Networking 1						
	Add standard virtual switch - v Sw	vitch1				
	🔜 Add uplink					
	vSwitch Name	vSwitch1				
	MTU	9000				
	Uplink 1	vmnic1 - Up, 10000 mbps	•			
	► Link discovery	Click to expand				
	▶ Security	Click to expand				
			Add Cancel			

2. Create a VMKernel port for the iSCSI/ StarWind Heartbeat channel.

<u> sw-mar-pc3.starwind.loca</u>	I - Networking	
Port groups Virtual sw	vitches Physical NICs VMke	rnel NICs TCP/IP stacks Firewall rules
🚘 Add VMkernel NIC	Add VMkernel NIC	
Name	Port group	New port group
	New port group	ISCSI_VMKernel
	Virtual switch	vSwitch1
	VLAN ID	0
	MTU	9000
	IP version	IPv4 only
	✓ IPv4 settings	
	Configuration	O DHCP Static
	Address	172.16.10.251
	Subnet mask	255.255.255.0
	TCP/IP stack	Default TCP/IP stack
	Services	✓ vMotion
		Create Cancel



3. Add a Virtual Machine Port Groups on the vSwitch for iSCSI traffic (vSwtich1) and on the vSwitch for Synchronization traffic (vSwitch2).

Portgroup ISCSI_for_VMs removed - dismiss for_VMs						
▼ 📱 Host	Port groups Virtual switches	s Physical NICs VMkerne	el NICs TCP/IP stacks	Firewall rules		
Manage						
Monitor	Add port group 🥒 Edit set	tings C Refresh 🖶 Actions				
> 🗗 Virtual Machines 🛛 🛛 🛛 🛛	Name	~	Active ports ~	VLAN ID		
→ 📑 Storage 📃 1	Q VM Network		0	0		
🔹 👰 Networking 📃 🚺	Management Network		1	0		
▼ Q ISCSI_for_VMs	Q ISCSI_VMKernel		1	0		
Monitor More networks	2 Add port group - ISCSI_for_VMs	\$				
	Name	ISCSI_for_VMs				
	VLAN ID	0				
	Virtual switch	vSwitch1	¥			
	▶ Security	Click to expand				
				Add Cancel		

4. Repeat steps 1-3 for any other links intended for Synchronization and iSCSI/Heartbeat traffic on ESXi hosts.

Deploying Starwind Virtual San For Vsphere

1. Download zip archive that contains StarWind Virtual SAN for vSphere: https://www.starwindsoftware.com/starwind-virtual-san#download

2. Extract the virtual machine files.

3. Deploy the control virtual machine to the VMware vSphere. Right-click on the Datacenter, cluster, or node menu and select the "Deploy OVF Template..." option from a drop-down menu.



🕑 vSphere - Datace	nter - Summary × +												-		×
$\leftarrow \rightarrow $ C	A Not secure	https://192.168	8.12.242/	ui/app/datao	enter;nav=v/ur	n:vmomi:Datao	enter:da	tacenter-	-3:00850be0-4	c08-4437-97a	a9 to	₹)≡	5 6		
vm vSphere	Client Menu	✓ Q s	earch in a	II environment	s				C	? ~ Ad	Iministrator@	/SPHER	E.LOCAL	~	٢
D D	9	<u>n</u> Datace	nter	ACTIONS	~										
∨ 🗗 vcenter01.star	wind.local	Summary	Monitor	Configure	Permissions	Hosts & Cl	usters	VMs	Datastores	Networks	Updates				
> 📑 Datacenter	Actions - Datacenter		osts:	1							CPU			Free: 14.18 C	3Hz
	🚹 Add Host		irtual Iuster	Machines: 4 s: 0							Used: 6.62 GHz		Ca	pacity: 20.8 C	3Hz
	🗊 New Cluster		etwor	ks: 2							Memory			Free: 16.25	GB
	New Folder		► ataste	xes: 2							Used: 15.75 GE Storage			Capacity: 32 Free: 213.2	GB
	Distributed Switc	h	•								Used: 686.3 GE		Ca	pacity: 899.5	GB
	🚹 New Virtual Mach	nine													
	1 Deploy OVF Tem	njate	s				^	Tags						^	
	Storage	0	•		Value			Assig	ned Tag	Category		Descrip	otion		
	Edit Default VM C	Compatibility													
	A Migrate VMs to A	nother Network													
	Move To		_												
	Bename														
	Tage & Custom A	ttributes													
Recent Tasks	Add Devela	attriodtes	-												≈
Task Name	Add Permission		~	Details	 ✓ Initiate 	r v	Queued	For	✓ Start Time	↓ ~	Completion Tin	ie v	Server		~
	Alarms		•												
All 🗸	X Delete													More	Tasks

4. In the first step of the wizard, point to the location of the OVF template. Select the VM files and click Next.

Deploy OVF Template	Select an OVF template ×
1 Select an OVF template	Select an OVE template from remote ORL or local file system Enter a URL to download and install the OVF package from the Internet, or browse to a location accessible from your computer, such as a local hard drive, a network share, or a CD/DVD drive.
2 Select a name and folder	Ourl
3 Select a compute resource	http https://remoteserver-address/filetodeploy.ovf .ova
4 Review details	Local file
5 Select storage	UPLOAD FILES 4 files
6 Ready to complete	
	CANCEL

5. Specify the VM name and target location.



Deploy OVF Template	Select a name and folder Specify a unique name and target location	×
1 Select an OVF template	Virtual machine name: SW1	
2 Select a name and folder	Select a location for the virtual machine.	
3 Select a compute resource	✓	
4 Review details		
5 Select storage		
6 Ready to complete		
	CANC	EL BACK NEXT

6. Select a compute resource intended to run the StarWind vSAN CVM

Deploy OVF Template	Select a compute resource ×
	Select the destination compute resource for this operation
1 Select an OVF template	
2 Select a name and folder	> [[a] Production Cluster
3 Select a compute resource	
4 Review details	
5 Select storage	
6 Ready to complete	
	Compatibility
	Compatibility checks succeeded.
	CANCEL BACK NEXT

7. Review the template details. Click Next.

Deploy OVF Template	Review details Verify the template details.		×
1 Select an OVF template	▲ The OVF package contains advanced configuration options, which might pose a security risk. Review the advanced configuration options below. Click next to accept the advanced configuration options.		
2 Select a name and folder			
3 Select a compute resource	Publisher	No certificate present	
	Product	StarWind Appliance	
4 Review details	Vendor	StarWind Software Inc.	
5 Select storage	Download size	Unknown	
6 Select networks	Size on disk	Unknown (thin provisioned) 30.0 GB (thick provisioned)	
7 Customize template	Extra configuration	disk.EnableUUID = true nvram = ovf:/file/file2	
8 Ready to complete		CANCEL BACK NEX	IT

8. In the second step of the wizard, specify the virtual machine provisioning type, VM Storage Policy, and select the direct-attached storage for the appliance system drive. Click Next.

Deploy OVF Template	Select storage	onfiguration and o	disk files				×
1 Select an OVF template	Select virtual disk format VM Storage Policy	Thick Provis	ion Lazy Zeroed	×	~]	Δ	
2 Select a name and folder	Disable Storage DRS for	r this virtual machi	ine				
3 Select a compute resource	Name Y	Storage T Compatibility	Capacity T	Provisioned T	Free T	Туре Т	Cluster T
4 Review details	• 億 Datastore		10 TB	3.38 TB	6.61 TB		
5 Select storage							
6 Select networks							4 items
7 Customize template	Compatibility						
8 Ready to complete	✓ Compatibility checks s	ucceeded.					
					CAN	CEL BACK	NEXT

9. Select the destination network for each network adapter assigned to the VM.

The default naming for virtual switches:

- the Management virtual switch is "Management vSwitch",
- the iSCSI virtual switch is "Data/iSCSI vSwitch",
- the Synchronization virtual switch is "Replication/Sync vSwitch ".



Specify corresponding network connections according to your virtual network naming. Click Next.

Deploy OVF Template	Select networks Select a destination network for each source network.				×
1 Select an OVF template	Source Network	Destination Network			
2 Select a name and folder	Management Network	Management	~		
3 Select a compute resource	Data Network	Data network	~		
4 Review details	Replication Network	Replica network	~		
5 Select storage					3 items
6 Select networks	IP Allocation Settings				
7 Customize template	IP allocation: IP protocol:	Static - Manual IPv4			
8 Ready to complete					
			CANCEL	ВАСК	NEXT

10. Specify the hostname, static IPv4 address, gateway, DNS, and additional network settings for Management and iSCSI/Data network interfaces:

Deploy OVF Template	Customize template Customize the deployment properties of this software solution.			
1 Select an OVF template	All properties have valid values	X		
2 Select a name and folder	✓ Management interface network settings	5 settings		
3 Select a compute resource	Hostname	Hostname of StarWind Appliance		
4 Review details	IPv4 address for Management interface	IPv4 address for Management interface (example 192.168.1.100)		
5 Select storage	IDv/1 netmask for Management interface	192168.12.206		
6 Select networks	IF V+ nethask for Management interface	23		
7 Customize template	IPv4 gateway for Management interface	IPv4 gateway for Management interface (example 192.168.1.1) 192.168.12.1		
8 Ready to complete	DNS Server for Management interface	DNS Server for Data interface (example 8.8.8.8) 192.168.12.17		
		CANCEL BACK NEXT		

NOTE: To manage the StarWind appliances via the StarWind vCenter plugin, the static IPv4 address must be assigned.



Deploy OVF Template	Customize template	192.168.12.1
1 Select an OVF template	DNS Server for Management interface	DNS Server for Data interface (example 8.8.8.8)
2 Select a name and folder	✓ Data Interface network settings	3 settings
3 Select a compute resource	IPv4 address for Data interface	IPv4 address for Data interface (example 172.16.10.10)
4 Review details		172.16.10.100
5 Select storage	IPv4 netmask for Data interface	IPv4 netmask for Data interface (example 24)
6 Select networks	MTU for Data interface	MTU for Data interface (example 9000)
7 Customize template		9000
	 Enable additional services 	1 settings
8 Ready to complete	Enable SSH	SSH is disabled by default. Select the checkbox to enable it
		CANCEL BACK NEXT

NOTE: if a DHCP server is available on the given network, you can skip setting the additional parameters for that interface.

11. Review the deployment summary information and click to start the VM creation.

Deploy OVF Template	Ready to comp	ete			×
	✓ Select networks				
1 Select an OVF template	Network mapping	3			
	Management	Management			
2 Select a name and folder	Data Network	Data network			
3 Select a compute resource	Replication Network	Replica network			
4. Daview details	IP allocation settings				
4 Review details	IP protocol	IPV4			
5 Select storage	IP allocation	Static - Manual			
6 Select networks	✓ Customize template	Hostname = SW1			
7 Customize template	Flopentes	IPv4 address for Management interface = 192.168.12.206 IPv4 netmask for Management interface = 23 IPv4 gateway for Management interface = 192.168.12.1 DNS Server for Management interface = 192.168.12.17			
8 Ready to complete		IPv4 address for Data interface = 172.16.10.100 IPv4 netmask for Data interface = 24 MTU for Data interface = 9000 Enable SSH = True			
			CANCEL	ВАСК	FINISH

12. Repeat the VM deployment on each other ESXi hosts.

NOTE: In some cases, it's recommended to reserve memory for StarWind VSAN VM.

NOTE: When using StarWind with the synchronous replication feature inside of a Virtual Machine, it is recommended not to make backups and/or snapshots of the Virtual Machine with the StarWind VSAN service installed, as this could pause the StarWind



Virtual Machine. Pausing the Virtual Machines while the StarWind VSAN service is under load may lead to split-brain issues in synchronous replication devices, thus to data corruption.

Initial Configuration Wizard

1. Start StarWind Virtual SAN CVM.

2. Launch VM console to see the VM boot process and get the IPv4 address of the Management network interface.

NOTE: in case VM has no IPv4 address obtained from a DHCP server, use the Text-based User Interface (TUI) to set up a Management network. Default credentials for TUI: user/rds123RDS

3. Using the web browser, open a new tab and enter the VM IPv4 address to open StarWind VSAN Web Interface. Click "Advanced" and then "Continue to..."



4. StarWind VSAN web UI welcomes you, and the "Initial Configuration" wizard will guide you through the deployment process.



	Welcome to StarWind Appliance		
	Follow the Initial configuration wizard and complete the required steps of the ap	pliance setup	
	Start		

5. In the following step, upload the license file.

StarWind Appliance Initial config	guration	
• License	Lizanse	
	Provide StarWind license file to continue	
	i If you cannot find the license file, please contact your StarWind Sales Representative or send the request to: sales@starwind.com	
	Upload file StarWind license file (.swk)	
	Back Next	

6. Read and accept the End User License Agreement to proceed.



StarWind Appliance Initial configu	ation	
✓ License	Review end-user license agreement	
• EULA	Paview and accent the following license agreement to continue	
	review and accept the following incluse agreement of continue	
	STARWIND LICENSE AGREEMENT FOR COMMERCIAL PRODUCTS	
	This StarWind License Agreement (the "Agreement") is a legal agreement between the entity indicated on the signature page as "Licenses" or the license entity on whose behalf this Agreement is electronically executed by the authorized user (the "License" and StarWind Softwane, Inc., a State Obsume, USA coporation ("StarWind") and Collectively with	
	Licensee, the "Parties" and each, (a "Party")), that is entered into as of the date of acceptance hereof by both Parties hereto (the "Effective Date").	
	Licensee is subject to the terms and conditions of this Agreement whether Licensee accesses or obtains StatWind Product, directly from Weath, or through any other sources by Jung; Installing, and/or Operating the StarWind Product, Licensee agrees to be bound by the terms of this Agreement if Licensee the source weath, and conditions of this Agreement, StarWind is unnilling to license StatWind Product to Licensee in source vent, License en any not Lice, insult, and the source of the source statWind is unnilling to license StatWind Product to Licensee is under the source of the Agreement, Exactlines, personal digital lassians; immediate one source of the source of the Agreement. Licensee may also receive a copy of this Agreement by contacting StatWind # Licensee access to the met action the source of the source of the Agreement. Licensee may also receive as copy of this Agreement by contacting StatWind #: Indiplated access the terms of this Agreement. Licensee may also receive as copy of this Agreement by contacting StatWind #: Indiplated access to the action the source of the terms of the terms Stat Footh Heelen, Provoet Divid Licensee Licensee (Stat Agreed That The Source of the Agreement Licensee Agreement by contacting StatWind #: Indiplated access to Agreed That The Source of the Terms Stat Footh Heelen, Provoet Divid Licensee Heelen Divide Stat Agreed That The Source of the ULENSEE WILL Have. The performance of the Agreement Divide Stat Agreement Divide Stat Agreed That THEOMENT AGREES TO AGREES THAT THROUGH A CLICK-THROUGH PROCEDURE; IF LICENSEE DOES NOT WISH TO ACCEPT THE TERMS OF THE SAGREEMENT THROUGH A CLICK-THROUGH PROCEDURE; IF LICENSEE DOES NOT WISH TO ACCEPT THE TERMS OF THE SAGREEMENT	
	I accept the terms of the license agreement	
	Back Next	

7. Review or edit the Network settings and click Next.

NOTE: Static network settings are recommended for the configuration.

StarWind Appliance Initial configu	ation	
 ✓ License ✓ EULA Management network Static hostname Administrator account Summary Configuration 	Configure management network Specify the unique IP address (static is recommended) and configure other network settings. The kanagement network is used to communicate with services such as DNS and HTP and to access the appliance web U from external clients. IP mode Static NIC Model Bandwidth MAC address IP address Netmask O Gateway ens160 82574L Gigabit Ne 1 Gbit 00:50:56:9C:E 192:168:12:206 255:255:254.0 192:168:12:1 DNS 2 IP address Netmask O Gateway Fine settings (optional): Imm come Imm come NTP server Imm come Imm come Separate servers with commas, maulmund 3 servers Imm come Imm come	
	Back	

8. Specify the hostname for the virtual machine and click Next.



StarWind Appliance Initial confi	guration	
 License EULA Management network Static hostname Administrator account Summary Configuration 	Verify hostname Eack the current appliance hostname and modify it if required It is taith letters, numbers, and dash Matter But	

9. Create an administrator account. Click Next.

Constitutional Associations and initial association				
Starwind Appliance Initial config	guration			
ed Lineanen				
✓ License	Croate administrator account			
- A 1711 A	create administrator account			
V EULA	Specify new credentials for the appliance administrate	praccount		
 Management network 				
 Static hostname 	admin			
Administrator account				
	Additional Information (optional)			
	Full name			
			Back Next	

10. Review your settings selection before setting up StarWind VSAN.



StarWind Appliance Initial config	uration		
			• • • • • • • • • • • • • • • • • • •
✓ License			
	Review summary		
✓ EULA			
 Management network 	License type		
	License	Paid 3 Nodes	
 Static hostname 			
✓ Administrator account	Matura di antitia na		
	Network settings		
 Summary 	Interface	ens160 (82574L Gigabit Network Connection)	
	Pandwidth		
	bulldwidth		
	MTU		
	IP address		
	Appliance hostname		
	Credentials		
	Administrator username		
		Back Configure	

11. Please standby until the Initial Configuration Wizard configures StarWind VSAN for you.

StarWind Appliance Initial config	uration		
✓ License	Configuring settings		
✓ EULA	Please wait until all specified settings are applied		
 Management network 			
✓ Static hostname	Progress: 0%	👌 Time remaining: – 3 sec	
 Administrator account 			
 Summary 	Applying license		
Configuration	Creating administrator account		
		h	

12. The appliance is set and ready. Click on the Done button to install the StarWind vCenter Plugin right now or uncheck the checkbox to skip this step and proceed to the Login page.



1		
and the second		
	StarWind Appliance Initial configuration	
	Initial configuration completed	
	The essential settings were successfully configured. Press "Finish" to close the wizard and navigate to the login page.	
	You can also install the StarWind vSphere plug-in if you want to access the StarWind Appliance web UI from your vSphere	
	console.	
	Launch the StarWind vCenter plug-in installation wizard.	
	Finish	

13. Repeat the initial configuration on other StarWind CVMs that will be used to create 2node or 3-node HA shared storage.

Add Appliance

To create 2-way or 3-way synchronously replicated highly available storage, add partner appliances that use the same license key.

1. Add StarWind appliance(s) in the web console, on the Appliances page. NOTE: The newly added appliance will be linked to already connected partners.



StarWind			🗉 🌲 🏠 admin 💌
	App Add appliance		
	Credentials	Credentials	
		Specify the appliance IP address and its administrator credentials The newly added appliance will be linked to already connected partners.	
		IP address	
		Auministrator Oseniane	
		Administrator password	
		Cancel	
▲ Minimize			

2. Provide credentials of partner appliance.

Star Wind		
bashboard bashboard	App Add appliance × • Credentials Summary Specify the appliance IP address and its administrator oredentials • The newly added appliance will be linked to already connected partners. IP address	
Tasks and events *	192.168.12.166 Administrator username admin Administrator password	
	Cancel	
< Minimize		

3. Wait for connection and validation of settings.



StarWind hyperconvergence		🗉 🌲 🔅 admin 👻
		α =
		Raw capacity © 0 Bytes
	192.168.12.166 Adminutration summaries admin Adminutration password Connecting to appliance	
	Caricel	
4 Minimize		

4. Review the summary and click "Add appliance".

StarWind Hyperconvergence			
👜 Dashboard	App Add appliance		
Storage 👻	Credentials	Summary	
Appliances Users Tasks and events	•	Appliance name SW2 Storage capacity 0.68 Storage pools 0. Volumes 0.	
		Back Add appliance	
< Minimize			



Configure Ha Networking

1. Launch the "Configure HA Networking" wizard.

StarWind							Ē	🌲 🏟 admin -
🗳 Dashboard	Network							
🛢 Storage 🔻		Configure HA networking						
A Network	🗌 Interface 🗘	Adapter model 🗢	Link status 💲	Bandwidth 💠	MAC address 🗢	Role ≑	IP address 🗢	Appliance ≑
Appliances	🔲 🗖 ens160	82574L Gigabit Net	Up		00:50:56:9C:E5:A5	Management		
Tasks and events	🔲 🛄 ens160	82574L Gigabit Net				Management		
	🗌 📜 ens224	VMXNET3 Ethernet	Up			Unassigned		
	🗌 🔚 ens224	VMXNET3 Ethernet				Unassigned		
	🔲 🛄 ens256	VMXNET3 Ethernet	Down			Unassigned		
	🔲 📜 ens256	VMXNET3 Ethernet				Unassigned		
 Minimize 								

2. Select appliances for network configuration.

NOTE: the number of appliances to select is limited by your license, so can be either two or three appliances at a time.

Star Wind					🗐 🌲 🏟 admin 🔻
Dashboard	Configure HA networking				
Appliances	Appliances Data network Replication network	Appliances Select appliances for network configuration. You can conf	igure up to three appliances at a time		
💄 Users		Appliance 🗢	Status ≑	Adapters 🗢	
📋 Tasks and events 🛛 🔻		🔽 🗟 SW1	Online		
		🗹 🗟 SW2	Online		
				Close Next	
< Minimize					



3. Configure the "Data" network. Select interfaces to carry storage traffic, configure them with static IP addresses in unique networks, and specify subnet masks:

- assign and configure at least one interface on each node
- for redundant configuration, select two interfaces on each node
- ensure interfaces are connected to client hosts directly or through redundant switches

4. Assign MTU value to all selected network adapters, e.g. 1500 or 9000. Ensure the switches have the same MTU value set.

Star Wind										8	🏟 admin	Ţ
😂 Dashboard	Configure HA networking											
Storage 👻	Appliances O Show sample network diagram											
Appliances			▲ Interface	Model	Bandwidth	MAC address	IP address	Netmask 0	Link status			
Tasks and events				VMXNET3 Ethernet	10 Gbit	00:50:56:9C:21:E1			Up	SI		
		SW2	ens256	VMXNET3 Ethernet	10 Gbit	00:50:56:9C:C4:73	172.16.20.10		Down	SI SI		
		=	Interface	Model	Bandwidth	MAC address	IP address	Netmask 0	Link status	SI		
				VMXNET3 Ethernet	10 Gbit	00:50:56:9C:D8:13			Up	SI		
				VMXNET3 Ethernet					Down			
		Cluster M MTU 9000	ITU size:									
								Back	Next			
 Minimize 												

5. Click Next to validate Data network settings.



A Non-redundant configuration × ^{72,16,10,10} 24 ¹⁰ ¹⁰	
Only 1 Data network is configured. Configure more Data SW2 networks to eliminate a single point of failure SW2	
Int: We recommended assigning at least two data network P address Netmask ① Link status SW1	
interfaces to eliminate a single point of failure. ✓ ens: 72.16.10.20 24 Up SW2	
Acknowledge and communer ens 72.16.20.20 24 Down	
Cluster MTU si	

6. Configure the "Replication" network. Select interfaces to carry storage traffic, configure them with static IP addresses in unique networks, and specify subnet masks:

- assign and configure at least one interface on each node
- for redundant configuration, select two interfaces on each node
- ensure interfaces are connected to client hosts directly or through redundant switches

7. Assign MTU value to all selected network adapters, e.g. 1500 or 9000. Ensure the switches have the same MTU value set.



StarWind									🗄 🌲 🏠 admin 🔻
	Configure HA networking								
	Appliances Select interfaces to carry data replication traffic, configure them with unique IP addresses, and specify subnet masks. Assign and configure at least one interface on each node • Ensure interfaces are connected to client hosts directly or through redundant switches Summary								Q ≢ ··· Appliance ¢ SW1
		SW1 ▲ Interface ens256	e Model VMXNET3 Ethernet	Bandwidth 10 Gbit	MAC address 00:50:56:9C:C4:73	IP address	Netmask 0 24	Link status Down	SW2 SW1 SW2
		is SW2 ▲	e Model	Bandwidth 10 Gbit	MAC address 00:50:56:9C:91:2C	IP address	Netmask 🛈	Link status	SW1 SW2
		Cluster MTU size: MTU 9000							
							Back	Next	
4 Minimize									

8. Click Next to validate the Replication network settings completion.



StarWind Hyperconvergence		🗐 🌲 🏟 admin 🔻
		Q ≞ … Appliance ≑
		SW1
		SW2 SW1
	em256 VAXXET3 Ethemet 10 Gbit 00:50:56:9C:C4:73 172:16:20:10 24 Down	SW2
		SW2
	Back	
4 Minimize		

9. Review the summary and click Configure.

StarWind						
Dashboard	Configure HA networking					
E Storage	✓ Appliances ✓ Data network	Summary				
 Appliances Users 	 Replication network Summary 	Appliance name Data networks Replication networks	SW1 172.16.10.10 172.16.20.10			
Tasks and events		Appliance name Data networks	₩2 172.16.10.20			
		Replication networks	172.16.20.20			
				Back	Configure	
∢ Minimize						



Add Physical Disks

Attach physical storage to StarWind Virtual SAN Controller VM:

- Ensure that all physical drives are connected through an HBA or RAID controller.
- Deploy StarWind VSAN CVM on each server that will be used to configure faulttolerant 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.

Learn more about storage provisioning guidelines in the KB article.

Create Storage Pool

1. Click the "Add" button to create a storage pool.

2. Select two storage nodes to create a storage pool on them simultaneously.

StarWind		🗉 🌲 🏠 admin 🕶
🔹 Dashboard	Storage pools	
🛢 Storage 🔺	Selected 0 of 0 + Create a new pool pool	
🚊 File shares		
🖳 LUNS	There are no storage pools yet	
🔮 Volumes	Start building your storage infrastructure by creating a new one	
III Storage pools		
📕 Physical disks		
🏥 Network		
Appliances		
💄 Users		
🖹 Tasks and events 🔻		
 Minimize 		



						a disting an
StarWind hyperconvergence						
	Stol Create storage pool					
	Selecter Appliance	Appliance				
		Select one or more storage nodes	o create a storage pool 📀			
		😑 Node name 🗘	Status 🗢	Available disks 🗢	Available capa 🗢	
		🔽 🖼 SW1	Online			
		🗹 🖼 SW2	Online			
				Cancel	Next	
				Cuncer		
∢ Minimize						

3. Select physical disks to include in the storage pool name and click the "Next" button. NOTE: Select identical type and number of disks on each storage node to create identical storage pools.

StorWend			🗐 🌲 🏠 admin 🕶
HYPERCONVERGENCE			
🙆 Dashboard	Stol Create storage pool		
🗧 Storage 🔺	Selecter of Appliance		
🚊 File shares	Physical disks	Physical disks	
💆 LUNs		Select physical disks to include in storage pools on each node 💿	
🕒 Volumes			
III Storage pools		Disk name	
Physical disks		MDD SAS 5 GB 32:0:1:0 SAS1068 PC	
📮 Network		🗹 📥 sdc HDD SAS 5 GB 32:0:2:0 SAS1068 PC	
Appliances		Z 🔤 sdd HDD SAS 5 GB 32:0:3:0 SAS1068 PC	
🚊 Users		Total raw capacity of selected disks: 15 GB	
🗂 Tacke and ovente 🛛 🔻		₫ 5W2 ▲	
		■ Disk name	
		🗹 🚔 sdb HDD SAS 5 GB 32:0:1:0 SAS1068 PC	
		🗹 🚔 sdc HDD SAS 5 GB 32:0:2:0 SAS1068 PC	
		Selected number of disks is equal Back Next	
∢ Minimize			

4. Select one of the preconfigured storage profiles or create a redundancy layout for the new storage pool manually according to your redundancy, capacity, and performance requirements.



StarWind							L 🛟 admin	•
	Create storage pool							
	 ✓ Appliance ✓ Physical disks ● Profile 	Profile Choose an optimal storage pool profile. Selected disks lef	t unused will be assi	gned to hot spares.				
		Storage pool profile	Usable capacity	Fault tolerance 🚱	Hot spares			
		 High capacity (recommended) Maximize redundancy while maintaining high storage capacity (Software RAID\RAID-5) 	9.9 GB					
		 High performance Maximize storage performance while maintaining redundancy (Software RAID(RAID-1) 	4.95 GB					
		Manual Allows you to configure the storage pool layout manually.						
				Back	Next			

Hardware RAID, Linux Software RAID, and ZFS storage pools are supported and integrated into the StarWind CVM web interface. To make easier the storage pool configuration, the preconfigured storage profiles are provided to configure the recommended pool type and layout according to the direct-attached storage:

- hardware RAID configures Hardware RAID's virtual disk as a storage pool. It is available only if a hardware RAID controller is passed through to the CVM
- high performance creates Linux Software RAID-10 to maximize storage performance while maintaining redundancy
- high capacity creates Linux Software RAID-5 to maximize storage capacity while maintaining redundancy
- better redundancy creates ZFS Stripped RAID-Z2 (RAID 60)) to maximize redundancy while maintaining high storage capacity
- manual allows users to configure any storage pool type and layout with attached storage

5. Review "Summary" and click the "Create" button to create the pools on storage servers simultaneously.



StarWind Hyperconvergence						E .	admin 💌
	Stor	Create storage pool					
		✓ Appliance ✓ Physical disks ✓ Profile	Summary Review specified settings an	nd create storage pools.			
		• Summary	Storage pool layout Raw capacity Usable capacity				
			Storage pool layout Raw capacity Usable capacity				
					Back Create		

Create Volume

- 1. To create volumes, click the "Add" button.
- 2. Select two identical storage pools to create a volume simultaneously.

Star Wind		₿ ♠	🔅 admin 🔻	
🗳 Dashboard	Volumes			
🛢 Storage 🔺	Selected 0 of 0 + Create a new volume name VHR user			
🚊 File shares				
🖳 LUNS	There are no volumes yet			
🕑 Volumes	O start sharing your storage resources to clients by creating a new one			
III Storage pools				
💻 Physical disks				
A Network				
Appliances				
Lusers				
🖹 Tasks and events 🛛 🔻				
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Voli Create volume						
Selecter • Storage pool Settings	Select storage pool					
	Select one or more (in HA configuration	ns) storage pools to c	reate a volume	0		
	😑 Name 🗢	Туре 🖨	State 🗘	Resiliency 🖨	Free 💠	
	🔽 🔟 SW1:md0	Software RAID	Online	RAID-5	9.98 GB	
	🗹 🏢 SW2:md0	Software RAID	Online	RAID-5	9.98 GB	
				Cancel	Next	

3. Specify volume name and capacity.

StarWind Hyperconvergence			🗎 🌲 💠 admin 🛪
Dashboard	Volt Create volume		
 Storage File shares Uhs Volumes Storage pools Physical disks Physical disks Network Applances Users Tasks and events 	Selector Storage pool • Settings Filesystem type Summary	Specify settings Later the volume name and size Name volume volume Volume Volume Set Set Set Set Set Set Set Se	
		Back	Next
< Minimize			

4. Select the Standard volume type.



StarWind			🗉 🌲 🏠 admin 👻
	Voli Create volume		
	Selecter Storage pool Settings Filesystem type Summary	Choose filesystem settings Choose the preferred filesystem settings for the new volume	
		Sublicture The XFS volume is created with standard settings. Recommended for general use and the highest performance. Backup repository The XFS volume is created with additional reflink (data block sharing) and CRC check flags.	
		Back	
< Minimize			

5. Review "Summary" and click the "Create" button to create the pool.

StarWind			
😂 Dashboard	Volt Create volume		
Storage File shares ELUNs Volumes	Selectre Storage pool Settings Filesystem type	Review summary Review your settings before creating a volume s sw1	
Storage pools Physical disks	• summary	Storage pool SVII:md0 Volume name volume0 Size 5 G8 Filesystem settings Standard	
Appliances		📑 SW2 Storage pool 💿 SW2:md0	
🚊 Users		Volume name volume0 Size 5 GB Filesystem settings Standard	
		Back Create	
∢ Minimize			



Create Ha Lun

The LUN availability for StarWind LUN can be Standalone and High availability (2-way or 3-way replication) and is narrowed by your license.

1. To create a virtual disk, click the Add button.

StarWind		🛑 🌲 🏟 admin 🕶
🔮 Dashboard	LUNs	
Storage	Selected 0 of 0 + Create anew LUN > LUN	
 File shares LUNs 	-	
Uolumes	There are no LUNs yet Start sharing your storage resources to clients by creating a new one	
III Storage pools		
📕 Physical disks		
🚓 Network		
Appliances		
💄 Users		
📋 Tasks and events 🛛 👻		
 Minimize 		

2. Select the protocol.



StarWind			🗐 🌲 🏠 admin 🝷
	LUN Create LUN		
	Protocol LUN availability Appliances Volumes Failover strategy	Protocol Select the required Protocol NVMe-oF Whe over Fabrics (WMe-oF) is a recommended option for high-performance 550 or WMe satups.	
	LUN settings Summary	Before you proceed, make sure that your clients are HVMe-oF compatible. Soft is a recommended protocol for most HDD based setups or medium performance SSD based setups. This option offers broader compatibility for storage clients.	
		Close	
< Minimize			

3. Choose the "High availability" LUN availability type.

StarWind hypergonvergence			
👛 Dashboard	LUN Create LUN		
 Storage File shares Uits Volumes Storage pools Physical disks Network Appliances Users Tasks and events 	Create LUN Celector V Protocol LUN availability Appliances Volumes Failover strategy LUN settings Summary	<text><text><text><text><text><text><text><text><text></text></text></text></text></text></text></text></text></text>	
< Minimize			

4. Select the appliances that will host the LUN. Partner appliances must have identical hardware configurations, including CPU, RAM, storage, and networking.



StarWind						🗉 🌲 🏠 admin 💌
	LUN Create LUN					
	Settern Protocol UN availability Appliances Volumes Failover strategy LUN settings Summary	Appliances Select two or three replication parts All appliances must have identical Appliance M B SW1	ers that should host the hardware configuration Status Online	HA LUN s, including CPU, RAM, storage, and Software version 1.5.460.5331+76fc51b	Capacity 15 GB	
		₽ E SW2	Online	1.5.460.5391+76(c51b		
				Back	Next	
∢ Minimize						

5. Select a volume to store the LUN data. Selected volumes must have identical storage configurations.

StarWind										
Dashboard	Create LUN									
E Storage Storage Storage Storage Storage pools	Protocol LUN availability Appliances Volumes Failover strategy	Volum Select on configura Volume	i es e volume on each itions. es have identical c	appliance to store	the HA LUN data. S	elected volumes r	nust have identical	storage		
Physical disks Appliances	LUN settings Summary	≣ SW1 ⊙	Volume 🗢	State 🗢 Mounted	RAID le \$ RAID-5	Capacity 🖨 5 GB	Free Sp ¢ 4.92 GB	Type ≑ Standard		
▲ Users ■ Tasks and events ♥		≣ SW2	Volume 🗢	State 🗘	RAID le \$	Capacity 🗢 5 GB	Free Sp \$	Type 🗢 Standard		
							Back	Next		
< Minimize										

6. Select the "Heartbeat" failover strategy.

NOTE: To use the Node witness or the File share witness failover strategies, the appliances should have these features licensed.



StarWind			🗐 🌲 🏟 admin 🔻
	LUN Create LUN Selector	X Failover strategy Select the preferred failover strategy. The default is "Heartbeat". However, you can choose another method if you do not have a UPS unit at your disposal.	
	 ✓ Volumes Failover strategy LUN settings Summary 	"Heartbeat" (Recommended) Applances constantly communicate via "Heartbeat" networks. To minimise the Advances of "split-brain" during blackouts, configure UPS to prevent the simultaneous shutdown of both appliance Node witchess A third appliance acts as a "moute" for replication partners. The working interess node excludes the possibility of a "split-brain" condition.	
		File share witness SNB file share acts as an independent entity that provides a quorum majority in case of connection loss between appliance. The working SNB share witness excludes the possibility of a "split-brain" condition. Back Next	
< Minimize			

7. Specify the HA LUN settings, e.g. name, size, and block size. Click Next.

StarWind hyperconvergence			
💭 Dashboard	LUN Create LUN		
 Fileshares UNs Volumes Storage pools Physical disks Network Appliances Users Tasks and events 	Selector V Protocol LUN availability Appliances Volumes Failover strategy LUN settings Summary	LUN settings Lun mare Lun Lun </th <th></th>	
< Minimize			

8. Review "Summary" and click the "Create" button to create the LUN.



StarWind hyperconvergence					
🙆 Dashboard	LUN	Create LUN			
 Storage File shares Uhis Volumes Storage pools Physical disks Appliances Cores Tasks and events 		 Protocol LUN availability Appliances Volumes Failover strategy LUN settings Summary 	Summary Potocol UN availability Appliance 1 Volume names Volume sizes Failover strategy UN name UN size MPIO Create VMFSG datastore IQNS	ISCSI High suilability (two-way replication) ■ SVI ■ S	
< Minimize					

Connecting Starwind Luns To Vmware Vsphere Servers

1. Log in to VMware vSphere Client.

2. Select the ESXi server in the sidebar-menu, then navigate to the "Configure" tab and open the "Storage Adapters" submenu page.

3. Click the "+Add Software Adapter" button to launch the corresponding wizard.



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vm vSphere Client Menu v	Q Search in all environments							
<u>ii</u> d e <u>o</u>	🔁 192.168.12.154 Астю	ons ↓						
∨ 🗗 192.168.12.242	Summary Monitor Configure	Permissions VMs Datastores Networks Updates						
✓ III Datacenter ✓ III Cluster	Storage 🗸	Storage Adapters						
192.168.12.154	Storage Adapters	+ Add Software Adapter 🗟 Refresh 🖏 Rescan Storage 🛛 🗠 Rescan Adapter 🗙 Remove						
192.168.12.172	Storage Devices	Adapter V Type Y Status Y Identifier Y Tar Y Dev Y P						
192.168.12.205	Host Cache Configuration	 Model: PIIX4 for 430TX/440BX/MX IDE Controller 						
₿ sw1	Protocol Endpoints	G vmhba1 Block S Unknown 1 1 1						
VMware vCenter Server	I/O Filters	C vmhba64 Block S Unknown 0 0 C						
	Networking 🗸	Model: PVSCSI SCSI Controller						
	Virtual switches	Copy All 3 items						
	VMkernel adapters							
	Physical adapters							
	TCP/IP configuration							
	Virtual Machines							
		No items selected						
Recent Tasks Alarms		¥						
Task Name V Target V St	tatus v Details v	Initiator V Queued For V Start Time V Completion Time V Server V						
Deploy OVF template	✓ Completed	VSPHERELOCALLVp 24 ms 03/04/2021, 7:09:19 03/04/2021, 7:24:35 192168.12.242 AM AM AM						
Import OVF package 192.168.12.205	✓ Completed	vsphere.local/Admin 102 ms 03/04/2021, 7:07:39 03/04/2021, 7:24:36 192:168:12:242 192:168:12:242						
https://192.168.12.242/ui/		More Tasks						

4. Mark the "Add software iSCSI adapter" option and click OK.

vSphere - 192.168.12.154 - Stora 🗙	P vSphere - 192.168.12.205 - Virtu: × ↓ +						-		×
\leftarrow \rightarrow C $ begin{tabular}{ll} & \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ $	92.168.12.242/ui/app/host;nav=h/urn:vmc	mi:HostSystem:host-26:dd29676	e6-1d51-41bf-92a0-c7a0362479bf/c	:o P	τô	€= (9 @		
vm vSphere Client M	enu 🗸 🔍 Search in all environments		C (? ~	Admini	strator@V	SPHERE	e.local 🗸		٢
	Add Software Adapter	192.168.12.154		\times					
 ✓ ^[1] ^[1] ^[2] ^[2]	Add software iSCSI adapter								
✓ ☐ Cluster ▲ 192.168.12.154	A new software iSCSI adapter will be a Details section to complete the config	added to the list. After it has been ac uration.	ided, select the adapter and use the Ada	apter	× Re				
192.168.12.172	O Add software NVMe over RDMA adapte		Y	Tar T	Dev y	Pat.			
日 192.188.12.205	Discover software NVMe adapters associated with the following RMDA devices.					1	1	1	
VMware vCenter Server	O Add Software FCoE Adapter								
	Discover software FCoE adapters associated with the following physical network adapter.						Copy All	3 items	
	Physical Network Adapter:	vmnicO	~						
	VLAN ID:	0	Range: 0 - 4094						
	Priority Class:	3	Range: 0 - 7						
Recent Tasks Alarms	Controller MAC Address:	00:50:56:9c:7a:06							
Task Name V Target					on Time	e v	Server		~
Deploy OVF template 🛛 🗗 SW1			CANCEL	ок	021, 7:2	4:35	192.168.12.2	242	
Import OVF package 192.168.12.2	05 V Completed	vsphere.local\Admin 10	03/04/2021, 7:07:39 2 ms	 	+rz021, 7:2	4:36	192.168.12.2	242	
All 🗸								More 1	

5. Add the IPv4 address of StarWind CVM Data\iSCSI network interface to the "Dynamic Discovery". Save the configuration



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In 192.168.12.154 In 192.168.12.172 In 192.168.12.205 In SW1 In Wware vCenter Server	Storage Adapters Indext Fig. Hexter Adapter Indext Fig. Hexter Adapter Indext Fig. Hexter Adapter Notice Endpoints VO Filters Model: SCSI Software Adapter Indext Fig. Software Adapter Networking Model: FILX4 for 430TX/440BX/MX IDE Controller Indext Fig. Software Adapter Virtual switches Winhold Block S Unknown 1 1 Virtual switches Immbade Plock C Unknown 0 0 Virtual switches Immbade Plock C Unknown 1 1 Virtual switches Immbade Plock C Unknown 0 0 Virtual switches Virtual switches Immbade Propertil. Devic Paths Dynamic Discove Static Discove Network Port Bindi Advanced Optio TCP/IP configuration + Add X Remove Authentication Advanced Immbade Immbade Immbade Svap File Location Svap File Location Svap File Location Immbade Immbade Svap File Location Virtual Sviter Immbade Immbade Immbade	
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6. Click on the "Rescan" button to discover StarWind virtual disk.

			-
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	№ 192.168.12.154 AC	TIONS ✓	
∨ 🗗 192.168.12.242	Summary Monitor Config	Permissions VMs Datastores Networks Opdates	
Datacenter	Storage V	Storage Adapters	
✓ [] Cluster	Storage Adapters	🕂 Add Software Adapter 🛛 🗟 Refresh 📙 Rescan Storage 🛛 🗟 Rescan Adapter 🛛 🗙 Remove	
A 192.168.12.154	Storage Devices	Adapter y Type y Status y Identifier y Tar y Dev y	Pat
192.168.12.205	Host Cache Configuration	Model: ISCSI Software Adapter	
品 SW1	Protocol Endpoints	Vmhba65 ISCSI Online Iqn.1998-01.com.vmware:6040 0 0	0
🕞 VMware vCenter Server	I/O Filters	 Model: PIIX4 for 430TX/440BX/MX IDE Controller 	
	Networking 🗸	🚱 vmhba1 Block S Unknown 1 1	1
	Virtual switches	🖉 umbha64 Dlock 9 Linknown 0 0	0
	VMkernel adapters	Copy All	4 items
	Physical adapters	Properti Devic Paths Dynamic Discove Static Discove Network Port Bindi Advanced	Optio
	TCP/IP configuration		
	Virtual Machines	+ Add X Remove Authentication Advanced	
	V/A Startup (Shutdown	ISCSI server	~
	Agont VM Sottings	1/2.16.10.110.3260	
	Default VM Compatibility		
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Image: Constraint of the state of the	Instruction Actions > Summary Monitor Configure Permissions VMs Datastores Networks Updates Storage Storage Adapters Stor Rescan Atopter × Remove Stor Can for new Storage Devices Protion Scan for new Storage Devices Rescan all host bus adapters for new storage devices. Rescanning all adapters can be slow. 1 Network Scan for new VMFS Volumes Rescan all known storage devices for new VMFS volumes that have been added since the last scan. Rescanning known storage for new file systems is faster than rescanning for new storage. Turue CANCEL Witt Agent VM Settings Default VM Compatibility Swap File Location	Dev y 0 1 0 y All udvancec	Pat 0 1 4 Items d Optic	
	System V Licensing		1 items	
Recent Tasks Alarms				*

7. Once scanned, the created StarWind LUNs appear on the "Storage Devices" submenu page.

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☐ ☐ ☐ ④ ④	☐ 192.168.12.154 ACTIONS ✓ Summary Monitor Configure Permissions VMs Datastores Networks U	Updates					
 Datacenter Duster 192.168.12.154 192.168.12.205 SWI VMware vCenter Server 	Storage Storage Devices Storage Adapters Refresh Attach Detach Mit as Local Turn On L Storage Devices Mark as Flash Disk Mark as Local Mark as Flash Disk Mark as Local Mark as Local Local Usk Usk Usk	Storage Devices Befresh Befr					
	I/O Filters Local NECVMWar CD-ROM (mpx/mhbat:C0:10 0 cdrom Networking Virtual switches Virtual switches Virkernel adapters Physical adapters Properties Partition Details	n 20.00 GB	Not Cons	Attached Attached y All 4 ite	ns		
	General Virtual Machines General VM Startup/Shutdown Identifier Agent VM Settings Location Default VM Compatibility Drive Type Swap File Location Hardware Acceleration System Owner Licensing Sector Format	59bbd42796a3) bbd42796a3					
Recent Tasks Alarms					*		

8. Right-click on the ESXi server to open the "Actions" menu, click on "Storage" and click the "New datastore" button.



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vm vSphere Clier	Actions - 192.168.12.154	ich in all environments C (?) v Administrator@VSPHERELC	
 ♥ ● 192.168.12.242 ♥ ● Datacenter ♥ Cluster ■ 192.168.12.17 ■ 192.168.12.77 ■ 192.168.12.20 ⊕ SWI 	 Deploy OVF Template New Resource Pool 	2.168.12.154 ACTIONS V Monitor Configure Permissions VMs Datastores Networks Updates	
	Maintenance Mode	Storage Devices Previews Previ	itions
	Power Power	Devices Name V L. Type Capacity Datasto V col Endpoints Local VMware Disk (mpx.vmhba0.C0/T0L0) 0 usk 10000 GB Net Cons	Operational N Attached
🕞 VMware vCe	Storage	Local NECVMWar CD-ROM (mpx/mhbat/C0.T0 0 cdrom Not Cons B New Datastore STARWIND ISCSI Disk (eul/7/2659bbd42796a3) 0 disk 20.00 GB Star	Attached Attached
	Host Profiles	al adapters Properties Paths Partition Details	oy All 4 items
-	Export System Logs Reconfigure for vSpher	Configuration General Aachines V Name STARWIND ISCSI Disk (eut.717e59bbd42796a3) Identifier eut.717e59bbd42796a3 artup/Shutdown Type disk	
	Settings Move To	VM Settings Location /vmfs/devices/disks/eui.717e59bbd42796a3 t VM Compatibility Capacity 20.00 GB t VM Compatibility Drive Type HDD File Location Hardware Acceleration Supported	
	Tags & Custom Attribut	ing Transport ISCSI Owner NMP Sector Format 512n	_
Recent Tasks Alarm	Add Permission		*

9. The Datastore creation wizard appears. Specify the Datastore type as VMFS.

VSphere - 192.168.12.154 - Store × +		-		×
← → C 🖻 https://192.168.12.242/ui/app/host;nav=h/urn:vmo	mi:HostSystem:host-26:dd2967e6-1d51-41bf-92a0-c7a0362479bf/co 🖉 🏠 📬	9 @		
vm vSphere Client Menu v Q Search in all environments	C () v Administrator@VSPHER	e.local 🗸		;;; ;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
 ▶ 192.166.12.242 ▶ Datacenter ■ 192.166.12.154 ■ 192.166.12.154 ■ 192.166.12.154 ■ 192.166.12.255 >> SWI >> VMware vCenter Servi A Wer Datastore > 1 New Datastore > 1 New Datastore<!--</td--><td>e a VMFS datastore on a disk/LUN. e an NFS datastore on an NFS share over the network. e a Virtual Volumes datastore on a storage container connected to a storage for, CANCEL BACK NEXT</td><td>Partitions</td><td>al × 4 items</td><td></td>	e a VMFS datastore on a disk/LUN. e an NFS datastore on an NFS share over the network. e a Virtual Volumes datastore on a storage container connected to a storage for, CANCEL BACK NEXT	Partitions	al × 4 items	
Recent Tasks Alarms				~

10. Specify the datastore name. Select the StarWind virtual disk.





11. Specify the VMFS6 version for the datastore.

							_	~
P vSphere - 192.168.12.154 - Stora × +						_		^
← → C 🏝 https://192.168.12.2	242/ui/app/host;nav=l	n/urn:vmomi:HostSystem:host-26:dd2967e6-1d51-41bf-92a0-c7a0362479bf/co	P to	₹^≡	9	Ē		
vm vSphere Client Menu 🗸	Q Search in all env	rironments C ⁴ (2) ~ Adi	ministrato	r@VSPHE	RE.LOC	CAL \vee		() ()
Image: Second state st	Datastore e and device selection 's version titon configuration dy to complete	VMFS version Specify the VMFS version for the datastore. VMFS 6 VMFS 6 enables advanced format (512e) and automatic space reclamation support. VMFS 5 VMFS 5 enables 2+TB LUN support. 	Off LEC GB GB	Datasto Not Con Not Con Not Con	se Partit	Ions Operation Attached Attached Attached (All	al × 4 items	
		CANCEL BACK NEXT	3)					
Recent rasks Alarms								

12. Specify the datastore size using the entire disk capacity.



C vSphere - 192.168.12.154 - Stora × +							-		×
\leftrightarrow \rightarrow C $ heta$ https://192.168.12.242/ui/app/host;nav=	h/urn:vmomi:HostSystem:host	-26:dd2967e6-1d51-41bf-92a0-c7a03624	79bf/co 6	to	ל=	9	Ē		
vm vSphere Client Menu ∨ Q. Search in all en	vironments	C	?) v Admi	nistrato	or@VSPHE	RE.LOC	AL 🗸		<u>.</u>
New Datastore									
 ✓ 1 Type ✓ Datacenter ✓ 2 Name and device selection 	Partition configuration Review the disk layout and spec	ify partition configuration details.							
192.168.12.154 192.168.12.172 192.168.12.172 4 Partition configuration 5 Particle according to the second	Partition Configuration	Use all available partitions	~	Off LED	D 🧔 Eras	e Partitio	ons		
[] 192.168.12.205 S Ready to complete	Datastore Size	20	GB	66	Datasto	~ OI	nocrieu	al 丶	
🖓 VMware vCenter Serv	Block size	1MB ~		GB	Not Cons Not Cons	At	ttached		
	Cross Declamation Drianity		=0	GB	Not Cons	A:	ttached		
	Space Reclamation Priority	Low: Deleted or unmapped blocks are reclain on the LUN at Low priority	ned				All	4 items	
			_						
				5)					
		CANCEL BACK	NEXT						
Recent Tasks Alarms									*

13. Review the configuration summary and click "Finish" to create the datastore.

♥ vSphere - 192.168.12.154 - Stora × +						-		×
\leftarrow \rightarrow C $ heta$ https://192.168.12.242/ui/app/host;nav=1	h/urn:vmomi:HostSystem:host-	26:dd2967e6-1d51-41bf-92a0-c7a0362479bf/co	P to	לֳ≡	9	Ē		
vm vSphere Client Menu v Q Search in all env								
 New Datastore Datacenter Custer 192:168:12:154 192:168:12:172 192:168:12:205 Svit VMware vCenter Serv 	Ready to complete Review your settings selections I Name: Type: Datastore size: Device and Formatting Disk/LUN: Partition Format: VMF5 Version: Block Size: Space Reclamation Granularity: Space Reclamation Priority	Defore finishing the wizard. StarWindDatastore VMFS 20.00 GB STARWIND ISCSI Disk (eui.717e59bbd42796a3) GPT VMFS 6 1 MB 1 MB Low: Deleted or unmapped blocks are reclaimed on the LUN at low priority CANCEL BACK FINISH	Drf LED GB GB	C Eres Datasto Not Cons Not Cons Not Cons	e Partit	Jons Dperation www.aneu Attached Attached Attached	al ×	
Recent Tasks Alarms								^

14. Check the StarWind datastore in the Datastores tab.



vSphere - Datacenter - Datastore x +		-		ţ
← → C 🖻 https://192.168.1	2.242/ui/app/datacenter;nav=s/urn:vmomi:Datacenter:datacenter-10:dd2967e6-1d51-41bf-92a0-c7a03 🖉 🏠 🛟	9 @	• ••	
vm vSphere Client Menu ∨	Q Search in all environments C (?) v Administrator@VSPHERE	Local V	\odot	
	Datacenter Actions Summary Monitor Configure Permissions Hosts & Clusters VMs Datastores Networks Updates			
Datacenter Datacenter Datastore StarWindDatastore	Datastores Datastore Clusters Datastore Folders	Filter		
	Name ↑ ✓ Status ✓ Type ✓ Datastore Clu ✓ Capacity ✓	Free	~	
	Datastore VMFS 6 499.75 GB	3.11 GB		
	StarWindDatastore ✓ Normal VMFS 6 19.75 GB	18.34 GB		
		Export	2 items	
Recent Tasks Alarms			(*
Task Name v Target v	Status	Server	~	
Process VMFS I 192.168.12.172	✓ Completed System 9 ms 03/04/2021,7:42:53 03/04/2021,7:42:54 AM AM	192.168.12.24	12	
Create VMFS 192.168.12.154	✓ Completed VSPHERE.LOCAL\A 5 ms 03/04/2021,7:42:45 03/04/2021,7:42:53 ∧ M	192.168.12.2	12	
All			More Tasks	

15. Repeat the configuration steps 6-13 to add newly created StarWind LUNs as datastores on your VMware vSphere cluster.

Configuring Starwind Vms Startup/shutdown

1. Setup the VMs startup policy on both ESXi hosts from Manage -> System tab in the ESXi web console. In the appeared window, check Yes to enable the option and choose the stop action as Shut down. Click Save to proceed.

vm ware" Esxi"			root@
Navigator	esxi01.starwind.local - Manage		
✓ ☐ Host Manage	System Hardware Licer	nsing Packages Services	Security & users
Wormor Wirtual Machines 1 El Storage	Autostart Swap	Enabled	No
 ✓ <u>●</u> Networking 3 ✓ ■ vSwitch2 	Time & date	Enabled	⊙Yes ONo
Switch0 More networks		Start delay	120 🗊 seconds
		Stop delay	120 😂 seconds
		Stop action	Shut down ~
		Wait for heartbeat	O Yes 💿 No
			Save Cancel



2. To configure a VM autostart, right-click on the VM, navigate to Autostart and click Enable.

vm ware° ESXi [∞]				root@
Ravigator	sxi01.starwind.local - Manage		🛐 SW1	
▼ 🖥 Host	System Hardware Licen	ising Packages	Power)	
Manage Monitor Virtual Machines Storage Networking Virtual Machines Virtual Ma	Advanced settings Autostart Swap Time & date	Edit settings Enabled Start delay Stop delay Stop action	Image: Guest OS Image: Guest OS Image: Snapshots Image: Guest OS Image: Console Image: Guest OS Image: Guest OS Image: Guest OS	
		🕞 Enable 🛛 🚑 S Virtual machine	 Edit settings Permissions Edit notes 	 C Refresh The Actions S
		🚯 SW1	📷 Rename	5
		Quick filters	😰 Answer question	
			Unregister Delete Help	
	🗊 Recent tasks		🛅 Open in a new window	

- 3. Complete the actions above on StarWind VM located on all ESXi hosts.
- 4. Start the virtual machines on all ESXi hosts.

Configuring An Automatic Storage Rescan

1. Connect to the appliance via Shell Terminal in a Text-based User Interface (TUI) or using a remote SSH terminal.



SW_VSAN_01 - VMware Remote Console	– 🗆 X
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Available Options	Open Shell Terminal
Change Password Additional settings	Open Shell terminal in current console screen
Open Shell Terminal	
Collect Support Bundle	
<up>/<down> Select option <enter> Perform action</enter></down></up>	<esc> Log out</esc>

2. Edit file /opt/starwind/starwind-virtual-san/drive_c/starwind/hba_rescan_config.py with the following command: sudo nano /opt/starwind/starwind-virtual-san/drive_c/starwind/hba_rescan_config.py





3. In the appropriate lines, specify the IP address and login credentials of the single or multiple ESXi hosts (see NOTE below) on which the current StarWind VM is stored and will trigger the storage rescan task:

\$esxi_host_list = ['IP address']
\$username = 'Login'
\$password = 'Password'



SW_VSAN_01 - VMware Remote Console	_)	×
		2	-	5
GNU nano 4.8 /ont/starwind/starwind-virtual-san/drive c/starwind/bba rescan conf	nu			
# ESXi/vSphere contection details	•py	v: ur	ют	.
# to multiple mosts enter is in format essionstrist = [seriessi_Host_iF], s # the username and password should be the same for multiple ESXi servers specified		AI_NU		2
<pre>w for a single host enter iP in format esx1_host_list = [Sel_ESX1_HOST_IP_1] esx1_host_list = ['SET_ESX1_HOST_IP_1']</pre>				
username = 'SET_ESXI_USER' password = 'SET_ESXI_PASSWORD'				
[Read 7 lines]	Cup 0			
A Get help of white out winnere is K cut fext of justify of ^X Exit ^C R Read File [∧] Replace [∧] U Paste Text [∧] T To Spell [∧] _	Go To	Line		
Quit: 'ESC' when terminal	not i	n foc	x. us.	

NOTE: In some cases, it makes sense to create a separate ESXi user for storage rescans. To create the user, please follow the steps below:

4. Log in to ESXi with the VMware Host Client. Click Manage, and under Security & users tab, in the Users section click Add user button. In the appeared window, enter a user name, and a password.



🚽 esxi01.starwind.local - VMware 🗄 🗙	+		0	- 0	×
← → C ▲ Not secure 19	2.168.12.225/ui/#/host/manage/secu	rity/users		\$:
vm ware" ESXi"		root@1	92.168.12.225 👻 Help 👻 🝳 Sear	ch	P
📲 Navigator 🗖	esxi01.starwind.local - Manage				
 Host Manage Monitor Virtual Machines SW1 Monitor More VMs Storage More VMs Storage More storage Networking 	System Hardware Licensing Acceptance level Authentication Certificates Users Roles Lockdown mode	Packages Services Sec Add user Edit user Remove user Iser Name Name Dot Description Password (required) Confirm password (required)	urity & users User C Refresh C Search C Description Administrator	1 items	
			Add Cancel		
	Recent tasks				

5. Create a new Role, under Roles section, and click New Role button. Type a name for the new role. Select privileges for the role and click OK.

The following privileges might be assigned: Host – Inventory, Config, Local Cim, and Global – Settings.

esxi01.starwind.local - VMware E	+		0	-		×
← → C ▲ Not secure 19	92.168.12.225/ui/#/host/manage/sec	urity/roles		☆	-	:
			root@192.168.12.225 🗸 Help 🗸 🔍	Search		P
Navigator Host Manage Monitor Virtual Machines Image Wonitor Monitor Monitor Monitor Monitor More VMs Image Image <tr< td=""><td>esxi01.starwind.local - Manage</td><td>g Packages Services Sec Add role / Edit role X Remove ro Add a role Role name (required) Privileges</td><td>curity & users Q Search ols C Refresh Q Search storage rescan Root </td><td></td><td></td><td></td></tr<>	esxi01.starwind.local - Manage	g Packages Services Sec Add role / Edit role X Remove ro Add a role Role name (required) Privileges	curity & users Q Search ols C Refresh Q Search storage rescan Root			
	Recent tasks		Folder Datacenter Datastore Network DVSwitch DVPortgroup Host VirtualMachine Resource Add	Can	ICEL	



6. Assign permission to the storage rescan user for an ESXi host – right-click Host in the VMware Host Client inventory and click Permissions. In the appeared window click Add user.

7. Click the arrow next to the Select a user text box and select the user that you want to assign a role to. Click the arrow next to the Select a role text box and select a role from the list.

(Optional) Select Propagate to all children or Add as group. Click Add user and click Close.



Make sure that rescan script is working and execute it from the VM: sudo python3 /opt/starwind/starwind-virtual-san/drive_c/starwind/hba_rescan.py

4. Repeat all steps from this section on the other ESXi hosts.

Performance Tweaks

1. Click on the Configuration tab on all of the ESXi hosts and choose Advanced Settings.



System Hardware Licensi	ing Packages Services Security & users	
Advanced settings	🖋 Edit option \mid 🤁 Refresh 📔 🌺 Actions	
Autostart Swap	Кеу 🔺 🗸 🗸	Name ~
Time & date	Disk.DeviceReclaimTime	The number of seconds between device re-claim attempts
	Disk.DisableVSCSIPollInBH	Disable VSCSI_Poll in bottom half. Set to 1 to disable.
	Disk.DiskDelayPDLHelper	Delay PDL helper in secs
	Disk.DiskMaxIOSize	Max Disk READ/WRITE I/O size before splitting (in KB)
	Disk.DiskReservationThreshold	Time window within which refcounted reservations on a device are $\ensuremath{permitt}\xspace$
	Disk.DiskRetryPeriod	Retry period in milliseconds for a command with retry status
	Disk.DumpMaxRetries	Max number of I/O retries during disk dump
	Disk.DumpPollDelay	Number of microseconds to wait between polls during a disk dump.
	Disk.DumpPollMaxRetries	Max number of device poll retries during disk dump
	Disk.EnableNaviReg	Enable automatic NaviAgent registration with EMC CLARiiON and Invista
	Disk.FailDiskRegistration	Fail device registration if disk has only standby paths and supports only im
	Disk.FastPathRestoreInterval	Time interval (in msec) to monitor the IO latency to evaluate eligibility for $\ensuremath{\mathrm{f}}\ldots$
	Disk.IdleCredit	Amount of idle credit that a virtual machine can gain for I/O requests

2. Select Disk and change the Disk.DiskMaxIOSize parameter to 512.

System Hardware Lice	ensing Packages Services Security & users
Advanced settings Autostart Swap Time & date	✓ Edit option C Refresh Actions Key ▲ ~ Disk.DeviceReclaimTime ~
	Disk.DisableVSCSIPollInBH Disk.DiskDelayPDLHelper Disk.DiskMaxIOSize
	Belit option - Disk.DiskMaxIOSize
	New value 512 (long integer)
	Save Cancel
	Quick filters

3. To optimize performance change I/O scheduler options according to the article below: https://knowledgebase.starwindsoftware.com/guidance/starwind-vsan-for-vsphere-changi ng-linux-i-o-scheduler-to-optimize-storage-performance/

NOTE: Changing Disk.DiskMaxIOSize to 512 might cause startup issues with Windowsbased VMs, located on the datastore where specific ESX builds are installed. If the issue with VMs start appears, leave this parameter as default or update the ESXi host to the next available build.

NOTE: To provide high availability for clustered VMs, deploy vCenter and add ESXi hosts to the cluster.

Click on Cluster -> Configure -> Edit and check the turn on vSphere HA option if it's



licensed.

SWVCluster	🗊 SWVCluster 📲 📴 🏦 😕 🛛 🎡 Actions 👻									
Getting Started	Summary Monitor	Configure	Permiss	ions Hosts	VMs Da	tasto	ores Networks	Update Ma	nager	
Image: SWVCluster - Edit Cluster Settings Image: SwVCluster - Edit Cluster Settings										
- Services	vSphere DRS		vSph	ere Availability						•
vSphere Di vSphere Ar vSAN	vSphere Availability Failures and Res Proactive HA Fail	vSpi	vSphere Availability is comprised of vSphere HA and Proactive HA. To enable Proactive I						Proactive I	
General Disk Mana	and Responses Admission Contr	ol	Т	urn on Proa	ctive HA (ð	Turn on DRS to e	nable		
Fault Doma	Heartbeat Datast	tores	Fai	lure		Res	sponse		Details	
Health and	Advanced Option	s	Ho	st failure		0	Restart VMs		Restart VI	/ls using VN ∶
iSCSI Targ			Pro	active HA		•	Disabled		Proactive	HA is not er
iSCSI Initia			Ho	stisolation		•	Disabled		VMs on is	olated host:
Configurat			Da De	tastore with Pe vice Loss	rmanent	•	Disabled		Datastore disabled.	protection t
→ Configurat			Da Do	tastore with All wn	Paths	•	Disabled		Datastore disabled.	protection t
General			Gu	est not heartbe	ating	•	Disabled		VM and ap	plication m
VMware EV VM/Host G			4						::	
VM/Host R										•
VM Overric	4							_		•
Host Optio									ОК	Cancel

Installing Starwind Vcenter Plugin

NOTE: This step is optional. StarWind vCenter plugin integrates the Controller Virtual Machines management into VMware vSphere user interface allowing managing compute and storage resources from a single web console.

1. To install the StarWind Plugin ensure that the version of your VMware vCenter Server Appliance 7.0 or newer, then click Next.



🗗 vSphere - SW1 - Summary 🛛 🗙 📚	StarWind vCenter Plugin x +				-		×
\leftarrow $ ightarrow$ O $ ightarrow$ Not secure $ $ $*$	+ttps://192.168.12.206:5044/#/deploy	ŵ	£≡	5	œ	٢	
📚 StarWind vCo	enter Plugin						
	Welcome						
	This installer allows you to deploy StarWind vCenter Plugin to your VMware vCenter Server Appliance						
	Prerequisites: • VMware vCenter Server Appliance 6.7u3 or higher • StarWind SAN & NAS v1 For additional information regarding StarWind vCenter Plugin installation, see: https://www.starwindsoftware.com/resource-library/starwind-san-and-nas/						
		I	N	ext			

2. Specify the vCenter Server FQDN or IP Address and administrator credentials and click Next.

🕑 vSphere - comstanvind.san_nas : x 📚 StarWind vCenter Plugin x +								×
← → C 🛕 Not secure https://192.168.12.206:5044/#/deploy 🏠 😭 🚇 🚇 …								
	≋ StarWind vCenter Plugin							
	1 PLUGIN DEPLOYMENT TARGET	Plugin Deployment Target						
		Specify the plugin deployment target settings. The target is the vCenter Server Appliance instance on which the plugin will be installed						
		VMware vCenter Server FQDN or IP address						
		Administrator username						
		Administrator password						
				N	lext			



🕑 vSphere - com.stanvind.san_nas: x 📚 StarWind vCenter Plugin 🛛 x +								
$\leftarrow \ \ \rightarrow$	C A Not secure https://192.168.12	2.206:5044/#/deploy	ĩò	£^≡	9	Ē		
	📚 StarWind vCenter Plugin							
	1 PLUGIN DEPLOYMENT TARGET	Plugin Deployment Target						
		Specify the plugin deployment target settings. The target is the vCenter Server Appliance instance on which the plugin will be installed						
		VMware vCenter Server FQON or IP address 192.168.13.236						
		Administrator username administrator@vsphere.local						
		Administrator password						
				N	ext			
						Ϋ́,		

3. Confirm the connection to your vCenter Server Appliance.

🗗 vSphere - com.starwind.san_nas : 🗙 📚 StarWind vCenter Plug	jin x +				-		×
\leftarrow \rightarrow C A Not secure https://192.168.12.20	06:5044/#/deploy	τô	£≡	9	œ	٢	
≷ StarWind vCenter Plugin							
2 SUMMARY							
	192.1 Certificate Warning						
(4) INSTALLATION COMPLETED	If an untrusted SSL certificate is installed on 192.168.13.236, secure communication cannot be guaranteed. Depending on your security policy, this issue does not represent a security concern.						
	The SHA1 thumbprint of the certificate is: 03:D6:66:C4:30:A3:69:2C:18:AD:C4:D1:AD:13:71:CD:F4:B5:29:2C						
	Cancel Confirm						

4. Review Summary and click the Install button.



🕑 vSphere - comstanwind.san_nas: 🗴 📚 StarWind vCenter Plugin 🛛 🗙 +								
\leftarrow \rightarrow \bigcirc \land Not secure https://192.168.12.206/5044/#/deploy \land								
	📚 StarWind vCenter Plugin							
	PLUGIN DEPLOYMENT TARGET	Summary						
	2 SUMMARY	Review your settings selection	on before deploying the StarWind vCenter Plu	ıgin				
		vCenter Server IP address	192.168.13.236					
		Administrator username Administrator password	administrator@vsphere.local					
				Back	Inst	tall	k	

5. Wait until the plugin is installed.

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$\leftarrow \ \rightarrow$	C A Not secure https://192.168.1	2.206:5044/#/deploy	έõ	ť≡	3	Ē	۲	
	≋ StarWind vCenter Plugin							
	PLUGIN DEPLOYMENT TARGET	Installation						
		Please wait until the Setup Wizard deploys StarWind vCenter Plugin						
	3 INSTALLATION	Install progress:			100 %			
				🗸 Cor	mpleted			
		Cancel		N	lext		•	

6. Click the Open Plugin page to start using StarWind SAN & NAS via the vCenter Plugin interface.





7. Repeat the plugin installation on each StarWind Controller Virtual Machine that will be managed using the StarWind Plugin in the VMware vSphere web interface.

Conclusion

By following this guide, StarWind Virtual SAN was deployed and configured in a VMware vSphere environment. As a result, the highly-avaialble datastores were created for storing the virtual machines in VMware vSphere cluster. Also, VMware vSphere plugin was deployed to manage StarWind storage from vSphere Web UI.



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