

Dell EMC VxRail™ Appliance

Version 4.0

Administration Guide

REV 01

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CHAPTER 1

Introduction

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Introduction

This document describes the VxRail™ Appliance, how it works, and how to perform administrative tasks.

The target audience for this document includes customers, field personnel, and partners who want to manage and operate a VxRail™ Appliance. This document is designed for people familiar with:

- Dell EMC systems and software
- VMware virtualization products
- Data center appliances and infrastructure

The VCE Glossary provides terms, definitions, and acronyms that are related to VCE Systems.

To suggest documentation changes and provide feedback on this book, send an email to docfeedback@vce.com. Include the name of the topic to which your feedback applies.

Accessing documentation

Select the documentation resource that applies to your role.

Role	Resource
Customer	emc.com/vxrailsupport A valid username and password are required. Click Documentation to access the technical documentation.
Cisco, Dell EMC, VMware employee, or partner	partner.vce.com A valid username and password are required.
VCE employee	sales.vce.com/saleslibrary or vblockproductdocs.ent.vce.com

Support

Create an Online Support account to get access to support and product resources for your VxRail Appliance.

If you already have an account, register your VxRail Appliance to access the available resources.

For convenience, you can link your Online Support account with VxRail Manager and access support resources without having to log in separately.

Note

If you plan to set up ESRS, your Online Support account must be linked to VxRail Manager under the same party ID or the deployment will fail. Your appliance must also be in an installed state in the Dell EMC Install Base.

Registering for online support

Create an Online Support account to access support resources.

After you register, you can:

- Register your system
- Obtain product license files and software updates
- Download VxRail Series product documentation
- Download the SolVe Desktop application for hardware replacement and upgrade procedures
- Browse the VxRail Series community and support information
- Link your support account for access to resources from within VxRail Manager

Procedure

1. Point your Web browser to emc.com/vxrailsupport (or support.emc.com).
2. Click **Register here**.
3. Fill in the required information.

Support will send you a confirmation email, typically within 48 hours.

Where to go for support resources

Access support resources for your VxRail Appliance by doing any of the following:

- Click the VxRail Manager **Support** tab.
- Point your Web browser to emc.com/vxrailsupport (or support.emc.com).

Using the SolVe Desktop application for VxRail Series hardware tasks

Step-by-step hardware component tasks such as replacement and upgrade procedures are available through the SolVe Desktop application.

CAUTION

To avoid potential data loss, refer to the VxRail Series procedures in the SolVe Desktop application before performing any hardware replacement or upgrade activity.

To download the SolVe Desktop application, go to <https://support.emc.com> and click **SolVe** on the main page. Download and install the SolVe Desktop application on your computer.

You must have an online support account to use the SolVe Desktop application.

CHAPTER 2

Architecture overview

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Overview of the VxRail Series

The VxRail Series delivers virtualization, compute, and storage in a scalable, easy to manage, hyper-converged infrastructure appliance.

Your VxRail Appliance is built on Intel Xeon processor-based x86 hardware with the VxRail™ Manager software bundle, and support for other value-added software from EMC and VMware.

The VxRail Manager software bundle includes the following:

- VxRail™ Manager for deployment, configuration, and management
- VMware vSphere®, including ESXi
- VMware vCenter Server™
- VMware vSAN™ for storage
- VMware vRealize Log Insight™

Your VxRail Appliance also includes complementary applications such as Dell EMC CloudArray and Dell EMC RecoverPoint for Virtual Machines.

The VxRail Appliance

The VxRail Appliance includes the appliance hardware, VxRail Manager, EMC Secure Remote Services (ESRS), and access to qualified Dell EMC software products.

Appliance hardware

The VxRail Appliance consists of one to four nodes in a rackmount chassis. Each node has its own compute and storage resources.

For a list of available VxRail Appliance models refer to the [Dell EMC VxRail website](#).

One or more network switches (10GbE or 1GbE depending on model), appropriate cables, and a workstation/laptop for the user interface are also required for use with your VxRail Appliance.

VxRail Manager

VxRail Manager provides a software stack for software-defined data center (SDDC) building blocks including compute, network, storage, and management. VxRail Manager streamlines deployment, configuration, and management for easier initial setup and ongoing operations.

VxRail Manager also provides integration for Dell EMC services and support to help you get the most out of your VxRail Appliance.

With VxRail Manager you can:

- Monitor system health with deep hardware intelligence and graphical representation
- View appliance software versions and updates
- Access Online Support and eServices
- Access community resources such as the user forum and knowledgebase
- Use the VxRail™ Market to access qualified software products
- Perform maintenance operations such as replacing hardware, adding drives, and cycling power to the cluster or nodes

- Perform system software upgrades
- Expand the nodes in the cluster

Storage and virtualization

The VxRail Series integrates VMware vSAN and virtualization to provide a complete hyperconverged infrastructure.

Storage

VMware vSAN is integrated in your VxRail Appliance to provide Software-Defined Storage (SDS). vSAN is not a VSA, but is embedded in the ESXi hypervisor kernel's I/O data path. As a result, vSAN can deliver the higher performance with minimum CPU and memory overhead.

vSAN pools the VxRail Appliance's internal SSDs and HDDs on the ESXi hosts to present a single datastore for all hosts in the cluster. vSAN uses a highly available, distributed, object-based architecture. vSAN mirrors and distributes the individual virtual disk (VMDK) across the datastore.

Virtualization

The VxRail Series lets virtualization infrastructure administrators manage storage on a per-VM basis. This VM-centric approach allows for storage policies to be defined at VM-level granularity for provisioning and load balancing. vSAN is fully integrated with vSphere, which simplifies setting up the availability, capacity, and performance policies.

For scale-out, VxRail Manager uses VMware Loudmouth auto-discovery capabilities, based on the RFC-recognized "Zero Network Configuration" protocol, to automatically discover and configure appliances on your network. Loudmouth runs on each ESXi host and in the VxRail Manager virtual machine. Loudmouth allows VxRail Manager to discover all the nodes and automate the configuration. Loudmouth requires IPv6 multicast. The IPv6 multicast communication is strictly limited to the management VLAN that the nodes use for communication.

Features

The VxRail Series offers advanced features including automatic deployment, automatic scale out, fault tolerance, and diagnostic logging.

Automatic deployment

The VxRail Manager fully automates the installation and configuration of all nodes in an appliance after you input the basic IP address information.

Automatic scale-out

The VxRail Series provides automated scale-out functionality by detecting a new VxRail Appliance on the network. When a new VxRail Appliance is powered on you can add it to your existing cluster or create a new cluster, replicating the configuration, and expanding the datastore in a cluster.

Node failure tolerance

The VxRail Series tolerates node failures as defined by the vSAN policy. Refer to VMware vSAN documentation on FTT and FTM support for more information.

The VxRail Series implements the standard vSAN policy of one failure by default:

- An entire node can fail and the system will continue to function.
- Disk failure cannot affect more than one node.

- One cache disk can affect as many as six capacity disks (HDD/SSD).
- One network port on any node can fail without affecting the node.
Network failover is through the virtual switch configuration in ESXi. This is automatically configured by VxRail Manager during initial setup.

Logging and log bundles

The VxRail Series provides logging and log bundles through VxRail Manager. These logs provide operation and event information about VxRail Manager.

VxRail Appliance cluster expansion

Your VxRail Appliance cluster can be scaled in single node increments from a minimum of three nodes up to a maximum of 32 nodes. Additional nodes may supported through the RPQ process (see below). The VxRail Manager automated installation and scale-out features make it easy to expand your cluster as your business demands grow.

VxRail Appliance models hold from one to four nodes in a rackmount chassis. You may have a partially populated appliance chassis in the cluster. You can use the empty slots in the chassis for future expansion.

You can mix different VxRail Appliance models in the same cluster. You must adhere to the following guidelines when deploying a mixed cluster:

- The first four nodes in a cluster must be of the same type and configuration. (If there are only three nodes in the cluster they must all be the same type and configuration.)
- All appliances in the cluster must be running VxRail Manager version 4.0 or higher.
- First-generation appliances (sold under the VSPEX BLUE name) can be in the same cluster with VxRail Appliances, as long as they are running VxRail Manager version 4.0 or higher.
- Appliances using 1GbE networking cannot be used in clusters with 10GbE networking.
- Hybrid nodes cannot be used in clusters with all-flash nodes.

Note

VxRail Appliance cluster scalability is supported to a maximum of 32 nodes. However, scalability to 64 nodes per cluster may be allowed. You must submit a request for product qualification (RPQ) to Dell EMC for clusters over 32 nodes.

- VxRail Appliance G Series models support up to eight appliances. Up to 16 appliances may be supported through the RPQ process.
 - 1Gbs clusters support a maximum of eight nodes and two appliances.
-

Work with your Dell EMC or partner representative when planning your cluster expansion.

Using a VxRail Appliance with an external VMware vCenter server

Your VxRail Appliance can join an existing external vCenter server during its initial configuration. This allows you to use a remote central vCenter server to manage multiple VxRail Appliances from a single pane of glass.

The external vCenter server can be:

- Physical or virtual
- Windows or VCSA
- Embedded, or non-embedded deployed with an external PSC

To join an existing external vCenter server, provide an existing datacenter and a non-conflicting cluster name during the initial configuration of the appliance. The VxRail Appliance joins the datacenter as a new vSAN cluster with the specified cluster name.

Note

The following restrictions apply when using your VxRail Appliance with an external vCenter server:

- The external vCenter server must be VMware VCSA 6.0 Update 2 build number 3634788, or later.
 - Your VxRail Appliance cannot join an external vCenter server on another VxRail Appliance cluster. The vCenter server on one VxRail Appliance cluster cannot be used to manage other VxRail Appliance clusters.
-

CHAPTER 3

Network planning

Before your VxRail Appliance is installed, your network switches must be properly configured. Work with your Dell EMC or partner representative to prepare your switches and network before installation.

This chapter discusses the switch and network parameters you must consider to make sure that you properly setup up your switch, configure VLANs, reserve IP addresses, and so on.

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Pre-installation Site Checklist

Before your appliance is installed, work with your Dell EMC or partner representative to complete the *VxRail Appliance Pre-installation Site Checklist*.

The *VxRail Appliance Pre-installation Site Checklist* is a site survey that help you gather the key information needed to successfully install your appliance.

10GbE or 1GbE switch networking

Your VxRail Appliance relies on your 10GbE or 1GbE switches for all of the networking between nodes in the cluster, and between the cluster and the rest of your infrastructure. It is crucial that your switches are configured properly for the VxRail Appliance to work.

Work with your Dell EMC or partner representative to ensure your switch is properly set up to work with your VxRail Appliance according to the instructions provided by your switch manufacturer.

The following table lists the type of switches needed for different VxRail Appliance models.

Table 1 VxRail Appliance network switch requirements

VxRail Appliance model	Network switch requirement
VxRail 60, VxRail 60F VxRail E460 VxRail P470 VxRail S470 VxRail V470	10GbE or 1GbE
VxRail 120, VxRail 120F VxRail 160, VxRail 160F VxRail 200, VxRail 200F VxRail 240F VxRail 280F VxRail G410, VxRail G410F VxRail E460F VxRail P470F VxRail V470F	10GbE

Network requirements

Your Dell EMC or partner representative will work closely with you to ensure you have the following network resources available before installing the VxRail Appliance.

10GbE or 1GbE switches

You must have one or more 10GbE or 1GbE switches:

- Two or more network switches are recommended for failover, and for installations with more than four appliances.
- Two switch ports are required for each node (the VxRail 60 requires four ports per node). A fully-populated appliance can require eight switch ports.

Cabling

If you have RJ45 NIC ports on your appliance you need:

- Two CAT6 or higher cables per node (these cables are included with RJ45-equipped appliances). A fully-populated appliance requires up to eight cables (the VxRail 60 requires 16 cables).

If you have SFP+ NIC ports on your appliance you need:

- Two compatible Twinax Direct-Attach-Copper (DAC) cables per node (these cables are not included; you must supply your own). Active DAC cables should be used if the cable is over 5 meters long.

or

- Two compatible fiber cables with appropriate transceivers per node (these cables and transceivers are not included; you must supply your own).
- A fully-populated appliance requires up to eight cables.

Servers

You must have a DNS server for network address resolution and ESRS support.

VxRail Appliance Network Configuration Table

Use the Network Configuration Table when planning and configuring your 10GbE or 1GbE switches for use with your VxRail Appliance.

This table lists the network parameters that are configured during VxRail Appliance setup. Use the table before setup to plan your configuration. Work with your Dell EMC or partner representative to use the table during setup to keep track of your entries.

Table 2 Network Configuration Table

Element	Category	Description	Example	Customer value
VxRail Appliance	Management VLAN ID (optionally modify)	Set a management VLAN on ESXi before you configure VxRail Appliance, otherwise management traffic will be untagged on the switch's Native VLAN	Native VLAN	
	VxRail Appliance Initial IP Address (optionally modify)	If you cannot reach the default VxRail Appliance initial IP address (192.168.10.200/24), set an alternate IP address	192.168.10.200	
System	Global settings	Time zone		
		NTP server(s)		
		DNS server(s)		
	Active Directory (optional)	Domain		
		Username		

Table 2 Network Configuration Table (continued)

Element	Category	Description	Example	Customer value
	HTTP Proxy Settings (optional)	Password		
		IP Address		
		Port		
		Username		
		Password		
Management	Hostnames	ESXi hostname prefix	host	
		Separator	None	
		Iterator	0X	
		Top-level domain	localdomain.local	
		vCenter Server hostname	vcenter	
		VxRail Appliance hostname	vxrail	
	Networking	ESXi starting address for IP pool	192.168.10.1	
		ESXi ending address for IP pool	192.168.10.4	
		vCenter Server IP address	192.168.10.101	
		VxRail Appliance IP address	192.168.10.100	
		Subnet mask	255.255.255.0	
		Gateway	192.168.10.254	
	Passwords	ESXi “root”		
		vCenter Server & VxRail Manager “administrator@vsphere.local”		
	Platform Controller Services (optional)	Platform controller services hostname	psscserver	
vSphere vMotion		Starting address for IP pool	192.168.20.1	
		Ending address for IP pool	192.168.20.4	
		Subnet mask	255.255.255.0	
		VLAN ID	20	
v SAN		Starting address for IP pool	192.168.30.1	
		Ending address for IP pool	192.168.30.4	
		Subnet mask	255.255.255.0	
		VLAN ID	30	
VM Networks		VM Network name and VLAN ID	Sales / 110	
		VM Network name and VLAN ID	Marketing / 120	
		...		
		Unlimited number		

Table 2 Network Configuration Table (continued)

Element	Category	Description	Example	Customer value
Solutions	Logging	vRealize Log Insight hostname	loginsight	
		vRealize Log Insight IP address	192.168.10.102	
		Syslog server (instead of Log Insight)		

CHAPTER 4

Licensing your VxRail Appliance

Your VxRail Appliance comes with VMware vSphere pre-installed. However, you must supply vSphere licenses to activate the appliance. Your vSphere licenses can be obtained in one of two ways:

- By leveraging your existing vSphere licenses, using the VMware vSphere Loyalty Program (VLP).
- By acquiring new licenses from one of the following channels:
 - Dell EMC direct OEM
 - Dell EMC brokerage services
 - VMware direct
 - Partner (resellers only)

The VMware vSphere Loyalty Program (VLP) allows you to apply your VMware vSphere licenses to your VxRail Appliances. This allows you to preserve your investment in VMware software while deploying a hyper-converged infrastructure built on the VxRail Series.

Work with your Dell EMC or partner representative to ensure that you have the proper type and quantity of licenses available for your environment.

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- [Locating your partner activation code \(PAC\)](#) 22
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Licensing overview

The overall procedure for licensing your VxRail Appliance is outlined here. Refer to the subsequent sections for details of each step.

Follow these steps to activate the license on your appliance.

Note

Internet access is required for this process. Customers without Internet access at their site should work with their Dell EMC or partner representative to obtain their license.

Procedure

1. Locate your partner activation code (PAC).
2. Log into the activation portal and redeem your PAC to receive your license keys.

Use your My VMware credentials or create an account if you don't have one.
3. Prepare a vSphere license key that meets your VxRail Appliance BYO (VLP) vSphere license requirements.
4. Enter your BYO (VLP) license key on the vCenter Web Client and apply it to your VxRail Appliance.

Locating your partner activation code (PAC)

When you buy a VxRail Appliance, Dell EMC or your partner will give you a unique partner activation code (PAC) that you can use to obtain your license.

Procedure

1. Locate your PAC.
 - A copy of the PAC is emailed to the **Bill to** and **Ship to** contacts for your order.
 - A copy of the PAC is also sent to any additional email addresses that were entered for your order.
2. Keep the PAC available as you license your appliance.

Logging into the activation portal

Log into the activation portal to redeem your PAC and receive your license keys.

Procedure

1. Point your Web browser to the [activation portal](https://www.vmware.com/oem/code.do?Name=EMC-AC):

`https://www.vmware.com/oem/code.do?Name=EMC-AC`
2. Log in with your My VMware credentials.

If you do not have a My VMware account, create one using these steps:
 - a. Click **Register** under **New Customers**.
 - b. Enter your email address, password, and other information.

- c. Click to accept the terms and conditions and click **Continue**.

An email is sent to the address you registered with.

- d. In the email, click **Activate Now** and follow the instructions to complete your registration.

3. On the **VMware Registration for Partner Activation Codes** page, enter your PAC in the **Activation Code** box.
4. Click **Continue** and follow the instructions.

You will receive an email containing the license key. The license key must next be prepared for your VxRail Appliance, and then applied using the vSphere Web Client.

Activating a VLP license

After you redeem your partner activation code (PAC) and receive your vSphere Loyalty Program (VLP) license, you must arrange your vSphere licenses to match your VxRail Appliance.

Before you begin

You may need to upgrade your license key to match the product version you are using (for example, vSphere 5.5 or vSphere 6.0, and so on). Refer to the VMware knowledge base article, *How to upgrade license keys in My VMware* ([2006974](#)).

Procedure

1. Log into your My VMware account.
2. Navigate to the **Manage License Keys** page.
3. Select the **Combine License Keys** option.
4. Find and select the proper number of vSphere licenses to support your VxRail Appliance.

The following table lists the license support requirements. Work with your EMC or partner representative to ensure that you have the proper type and quantity of licenses available for your environment.

VxRail Appliance model	vSphere license support requirements
VxRail 60	4 hosts and 4 CPUs
VxRail 120, VxRail 120F, VxRail 160, VxRail 160F, VxRail 200, VxRail 200F, VxRail 240F, VxRail 280F	3 hosts and 6 CPUs, or 4 hosts and 8 CPUs
VxRail E460, VxRail E460F, VxRail G410, VxRail G410F, VxRail P470, VxRail P470F, VxRail S470, VxRail V470, VxRail V470F	1 to 4 hosts and 2 to 8 CPUs

5. Click **Combine**. (If your vSphere licenses support more than eight CPUs, click **Divide License Keys** instead.)
6. Follow the My VMware on-screen instructions to finish grouping the licenses.
You have the option to email your license key to yourself.
7. Create a folder called `vxRail1` within My VMware with the required vSphere Enterprise Plus CPU license.

After you finish

For additional information on how to manage existing vSphere license keys in order to meet the Bring-Your-Own vSphere Licensing (VLP) requirements, work with your Dell EMC or partner representative. You can also refer to the following VMware knowledgebase articles:

- How to combine license keys in My VMware ([2006973](#))
- How to divide license keys in My VMware ([2006972](#))
- How to upgrade license keys in My VMware ([2006974](#))
- How to downgrade license keys in My VMware ([2006975](#))
- Licensing ESXi 6.x and vCenter Server 6.x ([2107538](#))

Assigning a license to your VxRail Appliance

After combining or splitting your BYO vSphere license and making it ready for VxRail Appliance, you must apply the license using the vCenter Web Client.

Procedure

1. Log into the vSphere Web Client.
(You must have Global.Licenses privilege.)
2. Click **Home**.
3. In the **Administration** section, click **Licensing** in the left pane and select the **Licensing** tab.
4. Click **Add New Licenses** (the small plus icon: +.)
5. Enter your product license key, one license per line, and click **Next**.
6. (optional) Add a label to the license. Click **Next**.
7. Review the details and click **Finish** to add the license.
8. To assign the new license to a host, click the **Assets** tab and then click **Hosts**.
9. Select the host and click **Assign License**.
(Shift+click to select multiple hosts to license.)

A pop-up window shows all available licenses.
10. Select the appropriate license from the list and click **OK** to complete the licensing process.

CHAPTER 5

Working with VxRail Manager

Use VxRail Manager to perform administrative tasks on your VxRail Appliance cluster.

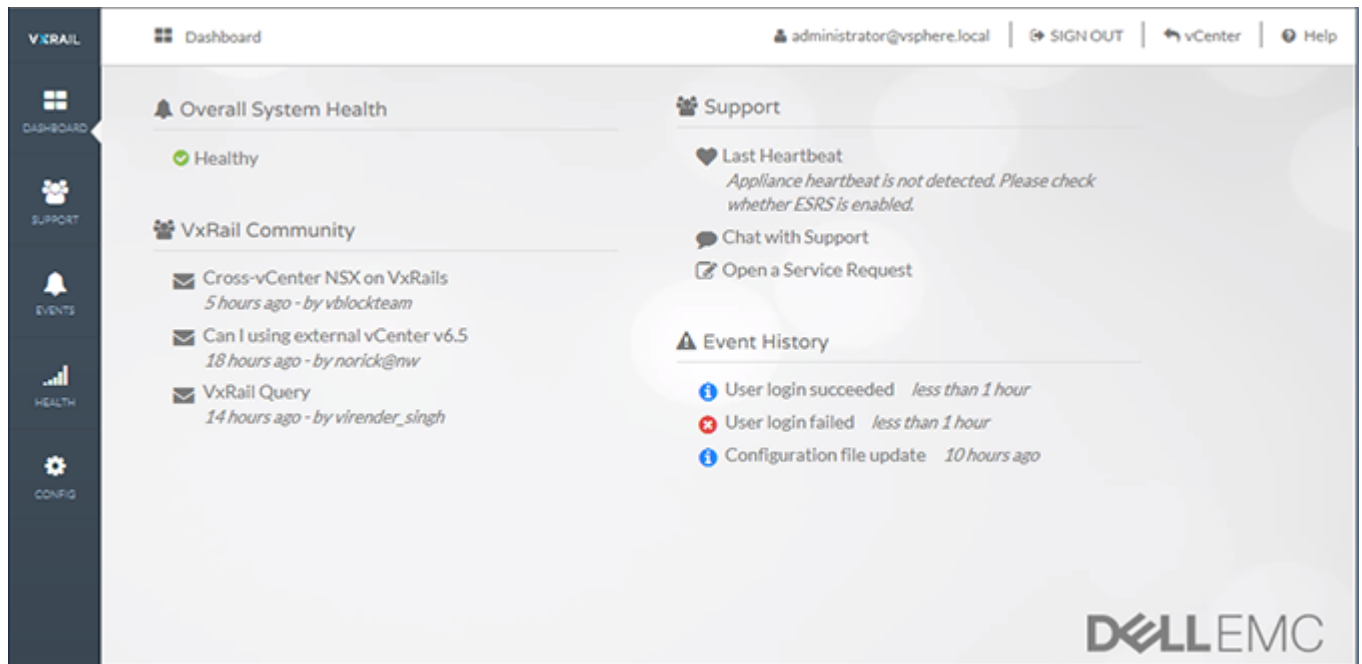
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Viewing the VxRail Manager dashboard

Click **DASHBOARD** to navigate to the VxRail Manager **Dashboard** tab.

The VxRail Manager dashboard shows system health and support resources at a glance, including upgrade availability, expansion status, overall system health, support, community activity, and event history.

Figure 1 VxRail Manager Dashboard screen



Upgrade

Upgrade displays the availability of VxRail Manager software upgrades.

Expansion

Expansion shows the status additional nodes being added to your VxRail Appliance or appliance cluster.

Overall System Health

Overall System Health shows the high-level system status of your VxRail Appliance. Status is shown as one of the following:

- **Healthy:** System normal. There are no major problems to address
- **Error:** An error has occurred. There is an issue that should be addressed when possible.
- **Warning:** System needs attention. There are some issues that require attention such as a disk space limit has been reached or an online support heartbeat cannot be sent.
- **Critical:** Immediate action required. There are events that must be addressed immediately to prevent downtime or data loss.

VxRail Community

VxRail community shows the most recent articles and other content from the online VxRail community.

Support

Support shows status and links to support resources, including:

- **Last Heartbeat:** The last time an EMC Secure Remote Services (ESRS) heartbeat was sent (only shown if ESRS is enabled).
- **Chat with Support:** Link to start a chat session with a support representative.
- **Open a Service Request:** Link to open a new service request ticket for support.

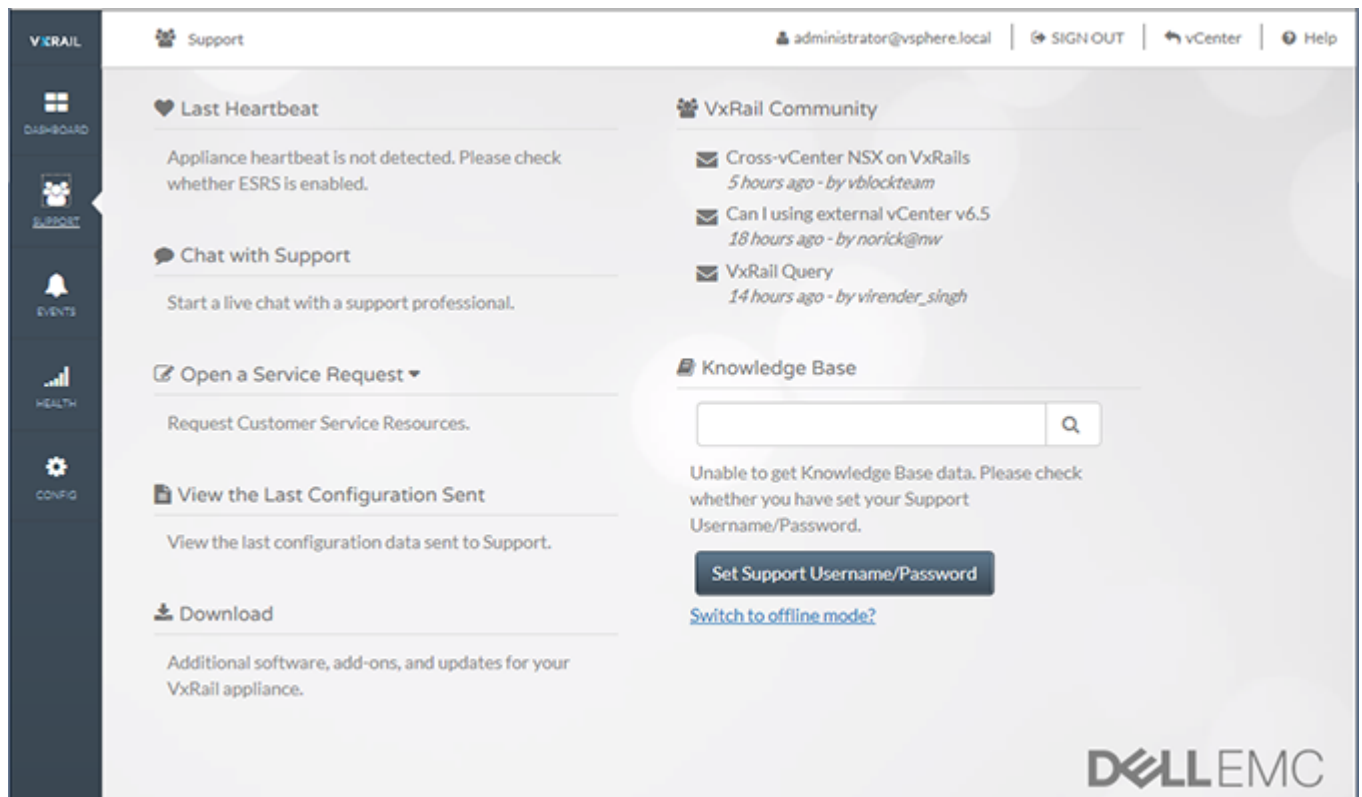
Event History

Event history displays the most recent system events.

Support resources

The VxRail Manager **Support** tab displays support status information, as well as support resources and links.

Figure 2 VxRail Manager Support screen



- **Last Heartbeat:** Displays the date and time of the last successful heartbeat sent by your VxRail Appliance using ESRS Connect Home. (ESRS must be installed and enabled.)
- **Chat with Support:** Opens a chat session with a support representative.
- **Open a Service Request:** Navigates to eServices where you can open a service request.
- **View the Last Configuration Sent:** Displays the most recent VxRail Appliance configuration data sent using ESRS Connect Home. (ESRS must be installed and enabled.)

- **Download:** Displays available applications and add-ons available for your VxRail Appliance.
- **VxRail Community:** Displays the most recent activity from the VxRail Series community forums.
- **Knowledge Base:** Lets you search the support knowledge base and access VxRail Series support articles.

Viewing EMC Secure Remote Support (ESRS) information

You can verify your VxRail Appliance ESRS "heartbeat" (the last time your system communicated with the remote support service). You can also review the configuration data that was sent to ESRS.

Before you begin

ESRS must be installed and enabled on your VxRail Appliance. You must have a support account before you activate ESRS. [See Enabling EMC Secure Remote Support \(ESRS\)](#).

Procedure

1. Click **SUPPORT** in VxRail Manager to navigate to the **Support** tab.
2. Observe the date and time of the last ESRS communication in the **Last Heartbeat** section.
3. Click **View the Last Configuration Sent** to display the configuration data that was most recently sent to ESRS.

Using Support eServices

Access Support eServices directly from VxRail Manager.

Before you begin

To use Support eServices, you must have created an account. To create an account visit support.EMC.com.

The VxRail Manager lets you access the following Support eServices:

- **Chat with Support:** Opens a chat session with a support representative.
- **Open a Service Request:** Opens a Web form where you can open a service request.
- **VxRail Community:** Displays the most recent activity from the VxRail Series community forums. Click a title to view the discussion.

Chat with Support

Open a live chat session with support personnel.

Procedure

1. Click **SUPPORT** in VxRail Manager to navigate to the **Support** tab.
2. Click **Chat with Support** to start a live chat session with a support representative.

The chat session opens. VxRail Manager transmits your appliance ID to the support representative.

Opening a service request

Contact Customer Service to request service for your VxRail Appliance.

Procedure

1. Click **SUPPORT** in VxRail Manager to navigate to the **Support** tab.
2. If you have more than one appliance, click the **arrow** next to **Open a Service Request**.
A list of the appliances in your cluster is shown.
3. Click the appliance for which you want service.
A service request form open in a new browser tab. The form is prepopulated with information about the appliance you selected.
4. Fill out the required information and click **Submit**.
5. If you have a single appliance, or want to submit a general service request, click **Open a Service Request**.

A Support eServices page opens in a new browser tab where you can open a request for service.

Viewing VxRail Series community updates

Browse and read the most recent activity from the VxRail Series community forums.

Procedure

1. Click **SUPPORT** in VxRail Manager to navigate to the **Support** tab.
2. Observe the **VxRail Community** list.
The most recent activity from the VxRail Series community is shown.
3. Click the title of a message or article to view that topic in a new browser tab.

Using the support knowledge base

Search, access, and view the support knowledge base.

Procedure

1. Click **SUPPORT** in VxRail Manager to navigate to the **Support** tab.
2. Type your search terms in the **Knowledge Base** search field and press Enter or click the magnifying glass icon.
If you have not [linked your support account](#) with VxRail Manager, you will be prompted to log in with your support credentials.
3. Click any of the returned search results to read that knowledge base article. Or click **More...** to navigate to the knowledge base website.

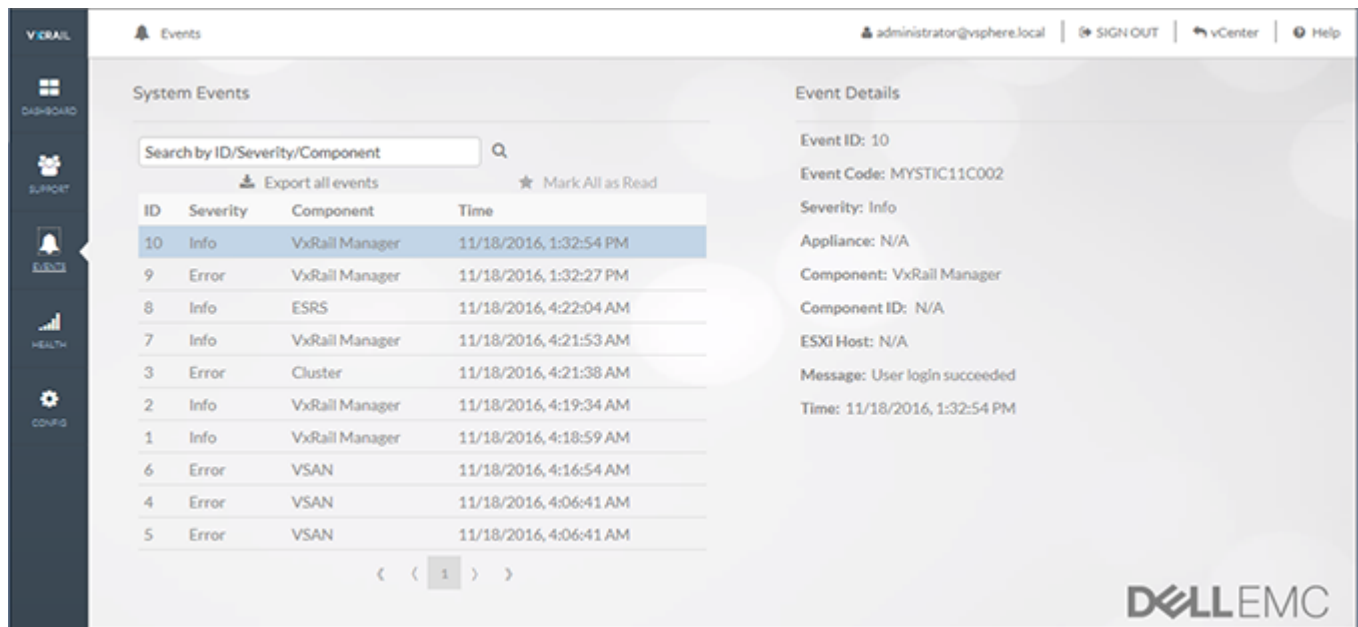
Viewing system events

The VxRail Manager **Events** tab displays a list of current system events.

- **System Events:** The System Events list displays all of the VxRail Appliance events.
- **Event Details:** Displays information for the selected event in the **System Events** list.

- If there are critical events detected, the **EVENTS** icon displays the number of unread events, in red, in the navigation bar.

Figure 3 VxRail Manager Events screen



Procedure

1. Click **EVENTS** to navigate to the VxRail Manager **Events** tab.
2. Sort the events list as desired by clicking on a column heading.
You can sort by **ID** number, **Severity**, or **Time** (including date).
3. Use the arrow buttons and scroll bars to navigate through the events list.
4. Click a row to view more information about an event.
 - New critical events are shown in red.
 - When you click an event, the red highlight is removed.
 - To set all critical events as "read", click **Mark All as Read**.
5. If a physical component is listed in the **Component** column, click its **Component ID** in the Event Details to view its status on the **Health > Physical** screen.
6. To download a list of events, click **Export all events**.

An **events.csv** file is created and downloaded by your browser.

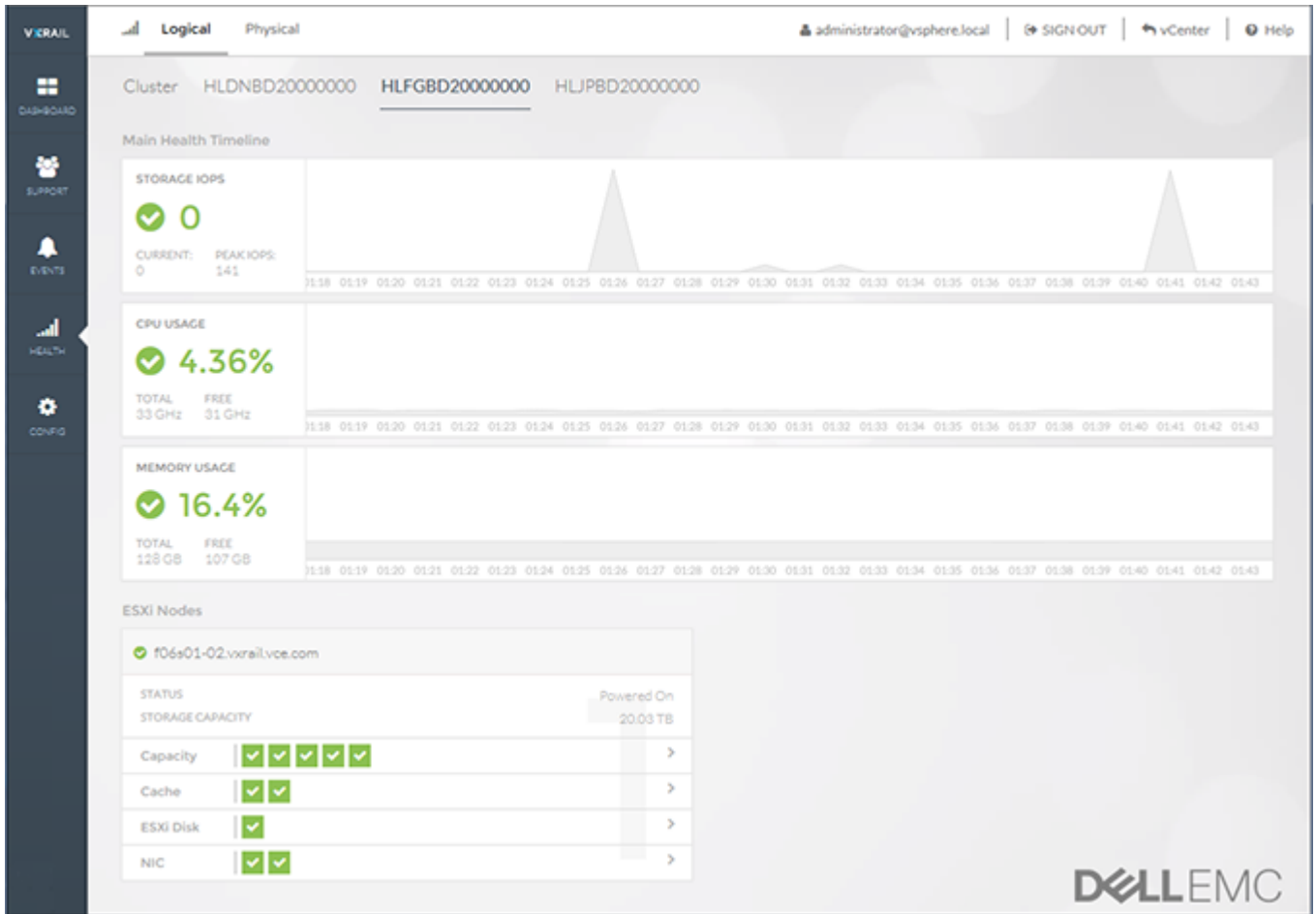
Monitoring logical system health

You can view the health of the nodes in your VxRail Appliance cluster using the VxRail Manager **Health > Logical** screen. This screen displays CPU, memory, and storage usage for your entire cluster, individual appliances, and individual nodes.

Procedure

1. Click **HEALTH** and then **Logical** to navigate to the VxRail Manager **Health > Logical** screen.

Figure 4 VxRail Manager Health > Logical screen



The color-coded status for storage IOPS, CPU usage, and memory usage indicates the following:

- Red: Over 85% used.
- Yellow: 75 to 85% used.
- Green: Less than 75% used.

2. Click **Cluster** to view information about the cluster overall.
3. Click an appliance name to view information about that appliance.
4. Scroll to view information about the main health timeline, storage use, and nodes.
5. Click the components of a node to view more information about the Capacity (HDD, SSD), Cache (SSD), ESXi disk, or NIC.

Results

Use the **Health > Physical** screen to view more information about hardware status and configuration.

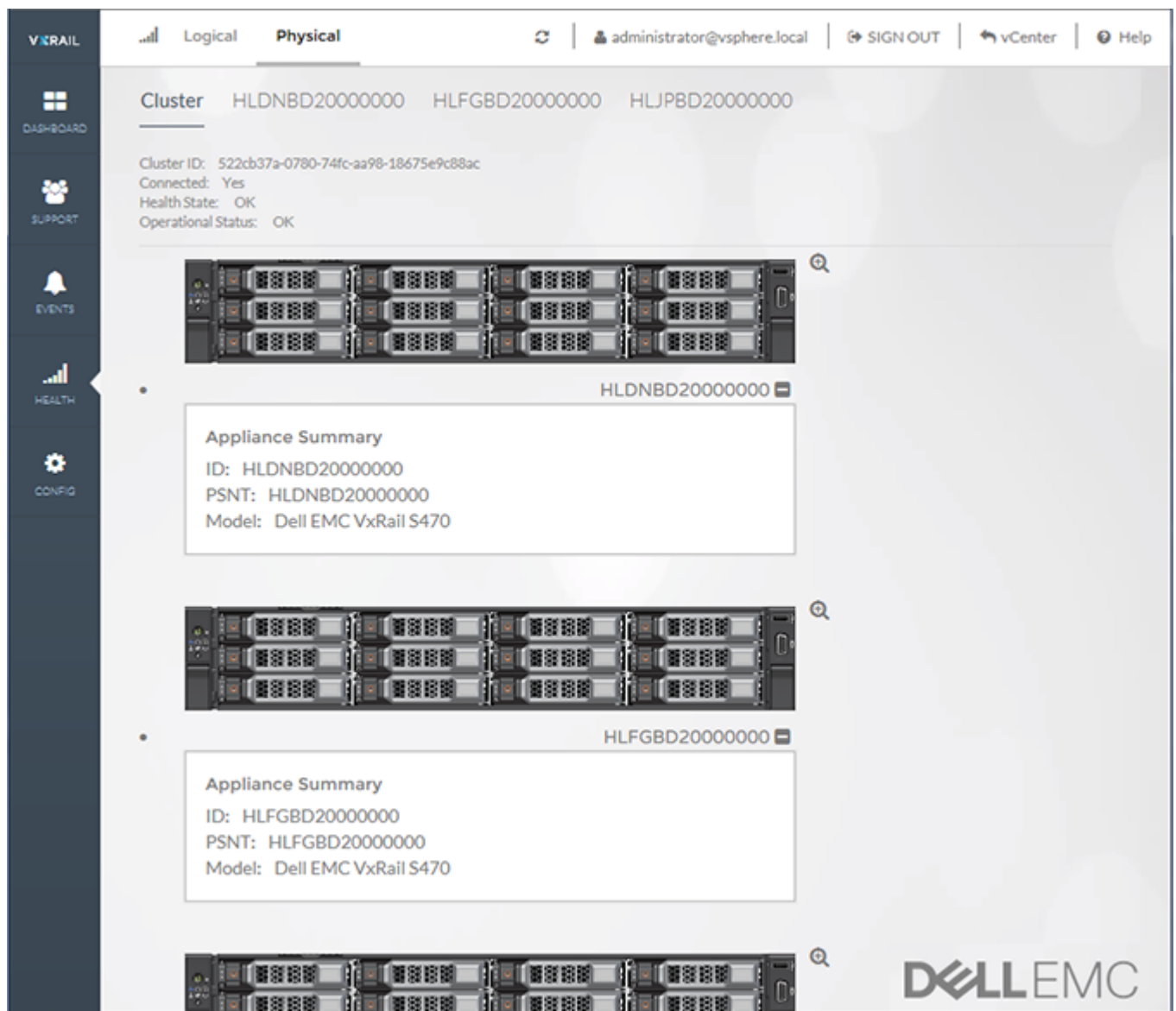
Viewing physical system health

The **Physical** tab of the VxRail Manager **Health** window displays information about the hardware components of your appliance. A graphical representation of the appliances in your cluster makes it easy to navigate for event and status information.

Use the **Health** window **Physical** tab to view the following:

- **Appliances in the cluster:** View appliance status and information such as ID, serial number, and so on.
- **Individual appliance components:** Drill down to see status and information for appliance components such as disks, compute nodes, and power supplies.

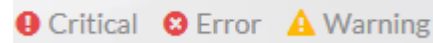
Figure 5 VxRail Manager Health > Physical screen Cluster view



Viewing and locating hardware events

Quickly locate and identify critical events, errors, and warnings on any appliance in the cluster.

VxRail Manager displays status icons to indicate events that occur on your appliance.



Procedure

1. In VxRail Manager click **HEALTH**.

The **Health** window is displayed.

2. Click **Physical**.

The **Physical** tab is displayed.

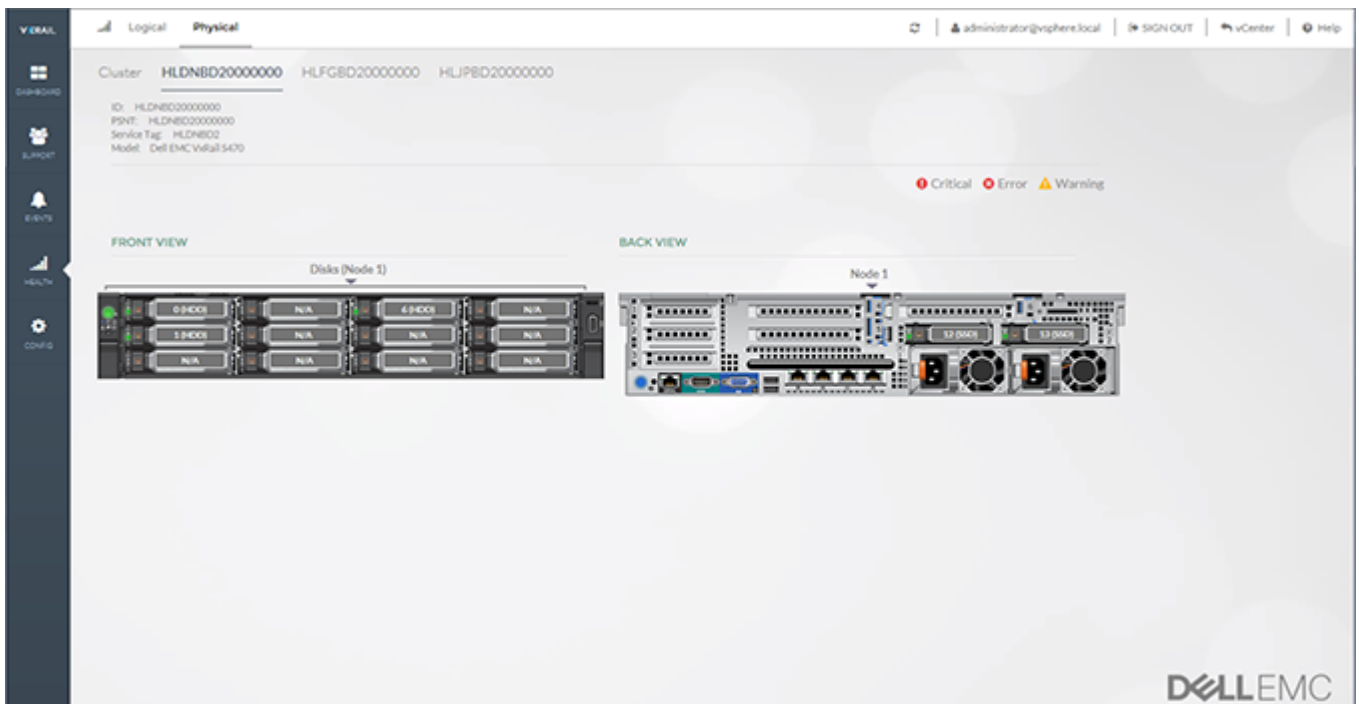
3. Click **Cluster** to see a graphical overview of the appliances in the cluster.

A picture of each appliance in the cluster is shown. Click the name below the picture to see a summary of that appliance.

4. Click an appliance name or the picture of an appliance to view more information about that appliance.

The **Front View** and **Back View** of the appliance are displayed.

Figure 6 VxRail Manager Health > Physical screen cluster view



5. If a status icon is displayed next to an appliance, click the appliance or the magnifying glass icon to see more information.
6. Click any appliance component to view more details.
 - Click a **Disk** in the **Front View** or **Back View** to see disk status and information.

- Click a **Node** in the **Back View** to see compute and network information.
 - Click a **power supply** in the **Back View** to see power supply status and information.
 - Click the **Back View** to see compute information.
 - Click a **NIC** in the **Back View** (E, S, P, and V models) to network information.
7. If a status icon is displayed on any component, click it to view event details in the **Health** window.
- Use your browser's back button to return to the appliance view on the **Health > Physical** tab.

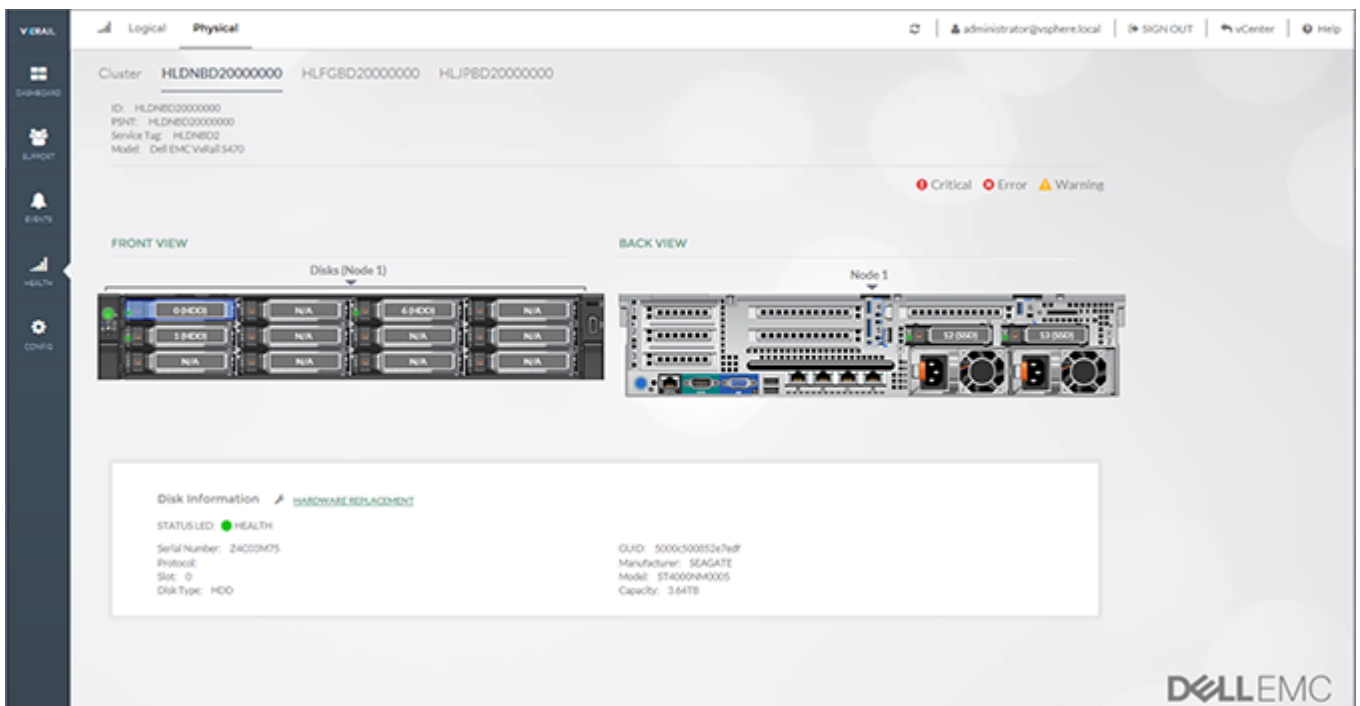
Viewing physical disk status

View status and information for any appliance disk in a cluster.

Procedure

1. In VxRail Manager click **HEALTH**.
The **Health** window is displayed.
2. Click **Physical**.
The **Physical** tab is displayed.
3. Click an appliance name, picture, or the magnifying glass icon next to it.
The **Front View** and **Back View** of the appliance are displayed.
4. Click a **Disk** in the **Front View** or **Back View**.
The **Disk Information** panel is displayed for that disk.

Figure 7 VxRail Manager Health > Physical screen Disk Information view



5. If a status icon is displayed, click it to view event details in the **Health** window.

Results

The **Disk Information** panel lists disk status and information about the drive, such as:

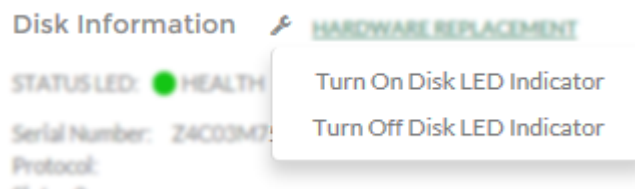
- Status LED on/off
- Serial number
- Protocol
- Enclosure and slot location
- Disk type
- Manufacturer
- Capacity
- Remaining rated write endurance level for SSDs

Switching a disk locator LED on and off

Switch a disk's locator LED indicator on or off. The disk LED flashes to help locate the disk in an appliance.

Procedure

1. In VxRail Manager click **HEALTH**.
The **Health** window is displayed.
2. Click **Physical**.
The **Physical** tab is displayed.
3. Click an appliance name, picture, or the magnifying glass icon next to it.
The **Front View** and **Back View** of the appliance are displayed.
4. Click a **Disk** in the **Front View**.
The **Disk Information** panel is displayed for that node.
5. Click the wrench icon next to the **Disk Information** panel title.



6. Select the action you want:
 - **Turn On Disk Locator LED Indicator** starts flashing the disk LED.
 - **Turn Off Disk Locator LED Indicator** stops flashing the disk LED.

Checking an SSD's remaining rated write endurance

Display the remaining rated write endurance (RRWE) for an SSD in your VxRail Series E, S, P, or V model appliance.

Before you begin

The following VxRail models support SSD drive rated write endurance monitoring:

- VxRail E460, VxRail E460F

- VxRail P470, VxRail P470F
- VxRail S470
- VxRail V470, VxRail V470F

For SSD drives, the **Disk Information** panel displays a message when the remaining rated write endurance reaches certain levels:

- Warning: 30% rated write endurance remaining
- Error: 20% rated write endurance remaining
- Critical: 5% rated write endurance remaining

The Error and Critical levels are reported on the VxRail Manager **Events** screen.

Follow these steps to view the SSD remaining rated write endurance notification:

Procedure

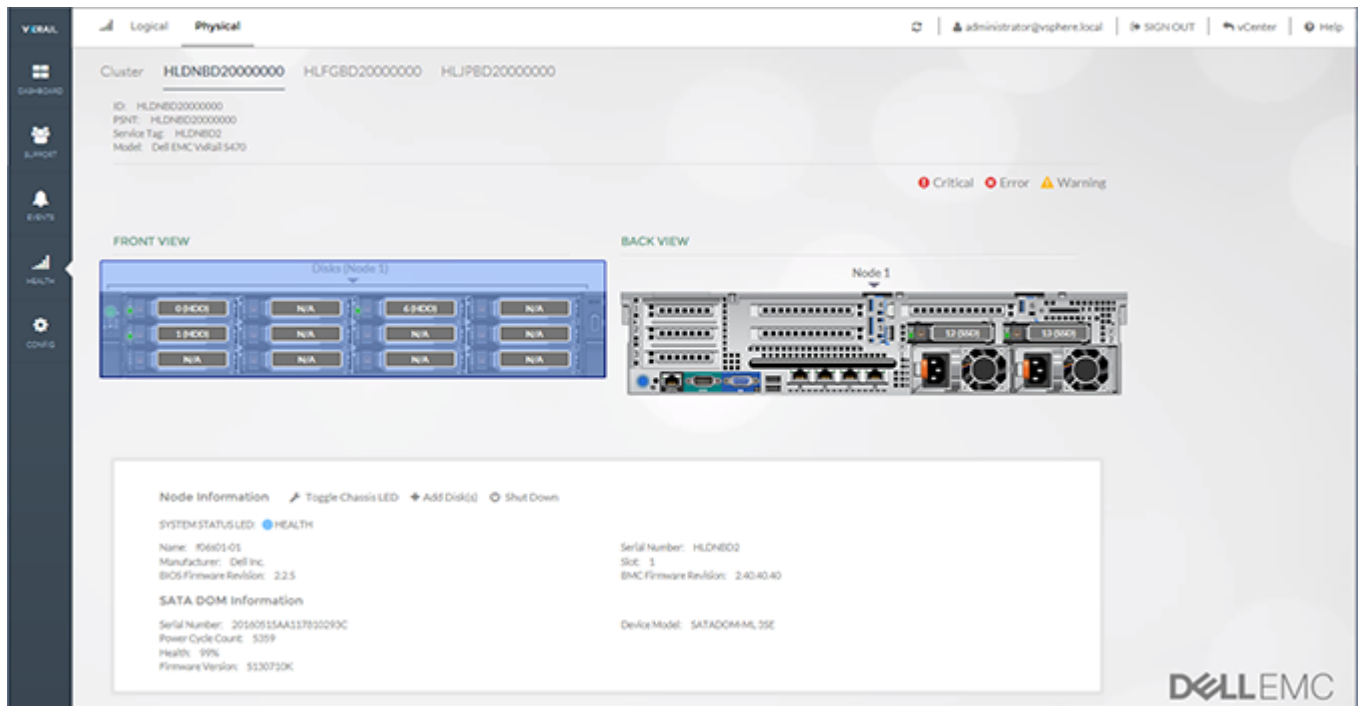
1. In VxRail Manager click **HEALTH**.
The **Health** window is displayed.
2. Click **Physical**.
The **Physical** tab is displayed.
3. Click an appliance name, picture, or the magnifying glass icon next to it.
The **Front View** and **Back View** of the appliance are displayed.
4. Click an **SSD** in the **Front View** or **Back View**.
The **Disk Information** panel is displayed for that SSD.
5. Observe the remaining rated write endurance notification (if displayed).

Viewing physical node status

View compute, SATA DOM, and NIC status and information for any appliance node in a cluster.

Procedure

1. In VxRail Manager click **HEALTH**.
The **Health** window is displayed.
2. Click **Physical**.
The **Physical** tab is displayed.
3. Click an appliance name, picture, or the magnifying glass icon next to it.
The **Front View** and **Back View** of the appliance are displayed.
4. Click a chassis or a node in the **Front View** or **Back View**.
The **Node Information** panel is displayed for that node.

Figure 8 VxRail Manager Health > Physical screen Node Information view

5. If a status icon is displayed, click it to view event details in the **Events** window.

Results

The **Node Information** panel lists status and information about the node, such as:

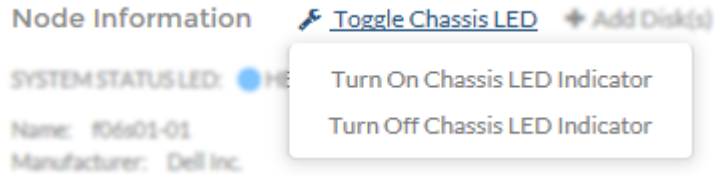
- Status LED on/off
- Serial number
- BIOS firmware version
- SATA DOM serial number and statistics
- Network interface card (NIC) MAC addresses and status

Switching a node chassis LED on and off

Switch a node's chassis LED indicator on or off. The chassis LED flashes to help locate the node appliance in a rack.

Procedure

1. In VxRail Manager click **HEALTH**.
The **Health** window is displayed.
2. Click **Physical**.
The **Physical** tab is displayed.
3. Click an appliance name, picture, or the magnifying glass icon next to it.
The **Front View** and **Back View** of the appliance are displayed.
4. Click a **Node** in the **Back View**.
The **Node Information** panel is displayed for that node.
5. Click the wrench icon next to the **Node Information** panel title.



6. Select the action you want:

- **Turn On Chassis LED Indicator** starts flashing the chassis LED.
- **Turn Off Chassis LED Indicator** stops flashing the chassis LED.

Shutting down a single node

Shut down an individual node in a cluster. This is useful when replacing node hardware or performing other maintenance tasks.

The following VxRail models support shutting down a single node:

- VxRail E460, VxRail E460F
- VxRail P470, VxRail P470F
- VxRail S470
- VxRail V470, VxRail V470F

Procedure

1. In VxRail Manager click **HEALTH**.

The **Health** window is displayed.

2. Click **Physical**.

The **Physical** tab is displayed.

3. Click an appliance name, picture, or the magnifying glass icon next to it.

The **Front View** and **Back View** of the appliance are displayed.

4. Click a **Node** in the **Back View**.

The **Node Information** panel is displayed for that node.

5. Click **Shut Down** in the **Node Information** panel.

The Shut Down Node window is displayed as VxRail Manager begins the shut down pre-check routine.

6. Correct any issues detected by the pre-check routine.

7. When the pre-check routine completes successfully, click **Continue** to shut down the node.

Results

During the pre-check routine, VxRail Manager checks the following:

- Checks and ensures the hosts aren't in maintenance mode
- Checks and ensures the hosts are connected
- Checks and ensures that DRS is enabled, or that all VMs on this host have been shut down
- Checks and ensures all VMs with vGPU enabled have been shut down

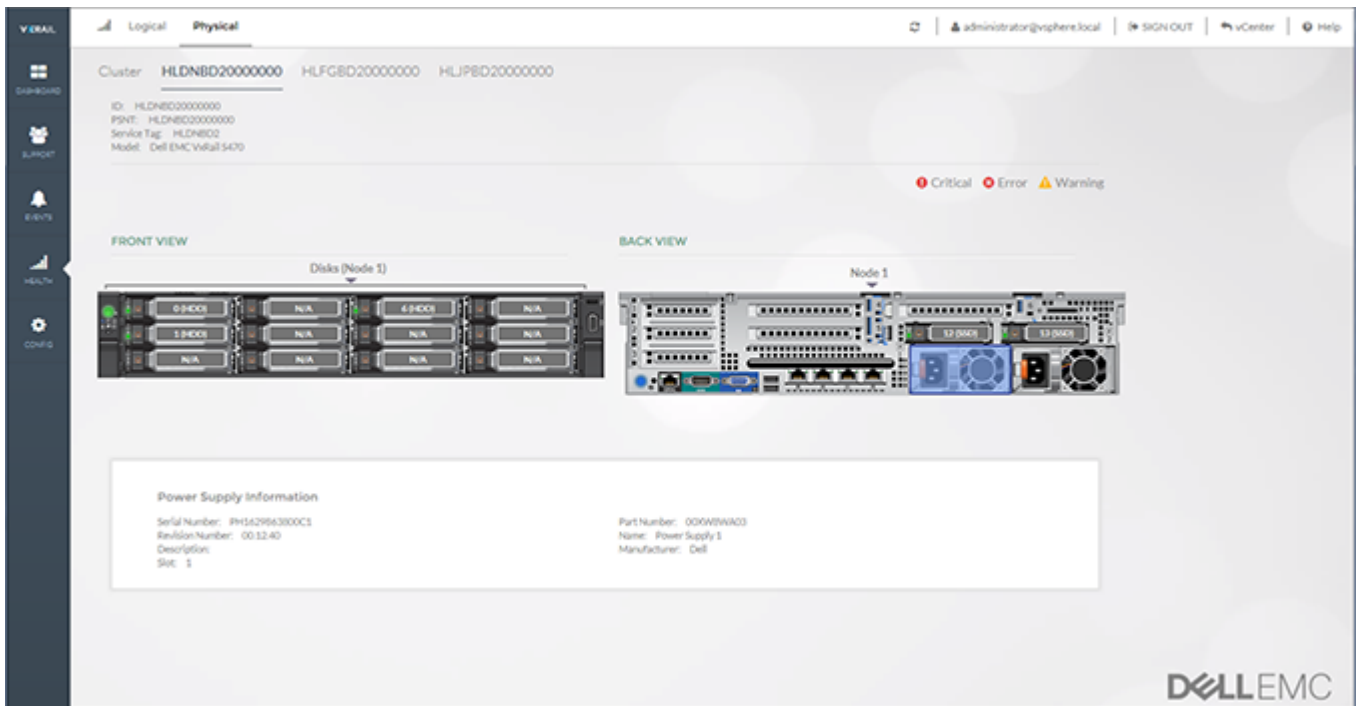
Viewing power supply status

View status and information for the power supplies of any appliance disk in a cluster.

Procedure

1. In VxRail Manager click **HEALTH**.
The **Health** window is displayed.
2. Click **Physical**.
The **Physical** tab is displayed.
3. Click an appliance name, picture, or the magnifying glass icon next to it.
The **Front View** and **Back View** of the appliance are displayed.
4. Click a **power supply** in the center area of the **Back View**.
The **Power Supply Information** panel is displayed for that power supply.

Figure 9 VxRail Manager Health > Physical screen Power Supply Information view



5. If a status icon is displayed, click it to view event details in the **Events** window.

Results

The **Power Supply Information** panel lists status and information about the power supply, such as:

- Serial number
- Manufacturer

Viewing physical NIC status

View NIC status and network information for your VxRail Series E, S, P, or V model appliance.

Before you begin

The following VxRail models support NIC information monitoring in a separate NIC information panel. For the other VxRail models, NIC information is integrated in Node information panel.

- VxRail E460, VxRail E460F
- VxRail P470, VxRail P470F
- VxRail S470
- VxRail V470, VxRail V470F

Procedure

1. In VxRail Manager click **HEALTH**.

The **Health** window is displayed.

2. Click **Physical**.

The **Physical** tab is displayed.

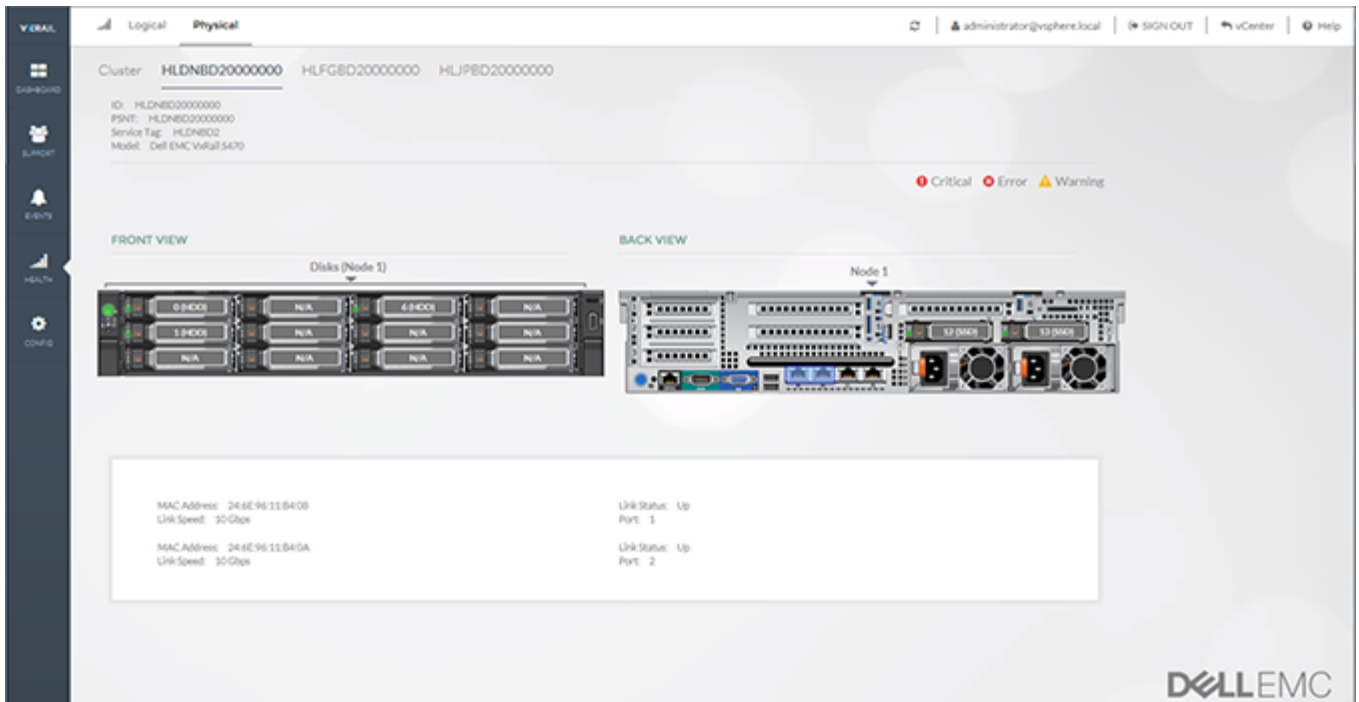
3. Click an appliance name, picture, or the magnifying glass icon next to it.

The **Front View** and **Back View** of the appliance are displayed.

4. Click a **NIC** in the **Back View**.

The **NIC Information** panel is displayed for that NIC.

Figure 10 VxRail Manager Health > Physical screen NIC Information view



Results

The **NIC Information** panel lists status and information about the node, such as:

- MAC address
- Link speed
- Link status
- Port number

Viewing VxRail Appliance system configuration and applications

The VxRail Manager **Config** tab displays details about the applications installed on or available for your VxRail Appliance. **Config** also displays information and status about the physical configuration of your appliance.

- **General:** Information and settings for VxRail Manager, including:
 - VxRail Manager version
 - Linked Online Support account
 - Log collection
 - EMC Secure Remote Support (ESRS)
 - Network offline mode
 - Health monitoring suppression mode
 - System diagnostics
 - Cluster shutdown
 - User interface language
- **System:** Descriptions, version information, and update controls for the system software installed on the cluster.
- **Market:** Access to qualified applications to install and run on your VxRail Appliance cluster.

Config General tab

The **General** tab of the **Config** window displays information and settings for your VxRail Appliance.

Use the **General** tab to view the following:

- **About VxRail Manager:** Displays the current version of VxRail Manager software running on your appliance.
- **Set Support Account:** Displays the linked Support account and allows you to link or change to a new account.
- **Log Collection:** Displays the most recent collected logs and allows you to generate a new log bundle.
- **Enable EMC Secure Remote Support:** Displays whether or not ESRS is enabled on your VxRail Appliance.
- **Configure Network Environment Settings:** Disable certain features in offline mode.
- **Suppress Cluster Monitor:** Disable system health monitoring for maintenance purposes.

- **System Diagnostics:** Run a complete system diagnostic report.
- **Shut Down Cluster:** Gracefully shut down the cluster.
- **Choose Your Language:** Select the language used in the VxRail Manager UI.

Figure 11 VxRail Manager Config > General screen

The screenshot displays the VxRail Manager Config > General screen. The interface includes a sidebar with navigation options: DASHBOARD, SUPPORT, EVENTS, HEALTH, and CONFIG. The main content area is titled 'General' and contains several sections:

- About VxRail Manager:** Displays 'VxRail Manager Version 4.0.0-4631184'.
- Set Support Account:** A message states 'Support Username/Password has not been set.' with a 'Set Support Account' button.
- Log Collection:** A 'Generate New Log Bundle' button.
- Enable EMC Secure Remote Support (ESRS):** A description of ESRS and a status indicator 'Your current ESRS status is: Disabled' with an 'Enable ESRS' button.
- Configure Network Environment Settings:** A message 'In offline mode, features which require internet access will be disabled.' and a toggle for 'Offline Mode' (On/Off) with an 'Apply' button.
- Suppress Cluster Monitor:** A description of the suppress mode and a toggle for 'Suppress Mode' (On/Off) with an 'Apply' button.
- System Diagnostics:** A description of diagnostics and a 'Diagnostic' button.
- Shut Down Cluster:** A description of the shut down action and a 'Shut Down' button.
- Choose Your Language:** A grid of language buttons: ENGLISH, FRANÇAIS, DEUTSCH, 한국어, 日本語, and 简体中文.

The Dell EMC logo is visible in the bottom right corner.

Viewing the VxRail Manager version number

Display the current version of VxRail Manager software running on your appliance.

Procedure

1. In VxRail Manager click **CONFIG**.
The **Config** window is displayed.
2. Click **General**.
The **General** tab is displayed.
3. Observe **About VxRail Manager** for the VxRail Manager software version.

Linking your Online Support account to VxRail Manager

For convenience, you can link your Online Support account with VxRail Manager and access support resources without having to log in separately.

Before you begin

You must have an account before you can link it with VxRail Manager. To create a support account, see *Registering for online support*.

Procedure

1. In VxRail Manager click **CONFIG**.
The **Config** window is displayed.
2. Click **General**.
The **General** tab is displayed.
3. Click one of the following buttons:
 - **Set Support Account** (if no account has been set)
 - **Change Support Account** (if an account was previously set)The **Username** and **Password** fields are displayed.
4. Type your account credentials in the **Username** and **Password** fields.
Leave both fields blank if you wish to unlink all accounts.
5. Click **Login**.
VxRail Manager will log into your account and display that your account is in use.

Generating a diagnostic log bundle

Create and download a diagnostics log bundle for your cluster.

VxRail Manager compiles a diagnostic log of its own operations. It does not include log information for the entire cluster.

Procedure

1. In VxRail Manager click **CONFIG**.
The **Config** window is displayed.
2. Click **General**.
The **General** tab is displayed.
3. In the **Log Collection** section click **Generate New Log Bundle**.
VxRail Manager will gather diagnostics information and create a TAR file.

4. Click **Open** to view the file or **Save** to store it on your local machine.

Enabling EMC Secure Remote Support (ESRS)

ESRS provides secure, automated access between Dell EMC and your VxRail Appliance. You must install and activate ESRS to enable some features in VxRail Manager.

Before you begin

You must have a support account before you activate ESRS. To create a support account, [see *Registering for online support*](#).

Note

If you plan to set up ESRS, your Online Support account must be linked to VxRail Manager under the same party ID or it will not work properly.

Procedure

1. In VxRail Manager click **CONFIG**.
The **Config** window is displayed.
2. Click **General**.
The **General** tab is displayed.
3. Verify the value of **Your current ESRS status is**.
 - **Disabled:** ESRS is not activated.
 - **Deployed:** ESRS has been installed but not activated.
 - **Enabled:** ESRS is activated.
4. Do one of the following:
 - If your ESRS status is **Disabled**, proceed to step 5.
 - If your ESRS status is **Deployed**, skip to step 9.
 - If your ESRS status is **Enabled**, skip to step 12.
5. Click **Enable ESRS**.
The **Enable ESRS** window is displayed.
6. In the **IP** field, enter a valid IP address on the management network used by your VxRail Appliance.

ESRS must be on the same management network as vCenter and VxRail Manager to receive alerts and broadcast them back to Dell EMC.
7. Verify that the site ID and contact information are correct.

These fields are pre-filled based on your Support account. However, you can manually update them if you wish.
8. Click **Submit**.

A status bar is displayed as ESRS is deployed on your system. When the process is complete, an access code is emailed to the address specified for your support account.
9. When your ESRS status is **Deployed**, click **Activate ESRS**.

The **Enable ESRS** window is displayed.

10. Type or paste the access code in the **Access code** field.
The access code is valid for 30 minutes. If your code has expired, click **Regenerate access code** to receive a new code by email.
 11. Click **Submit**.
A status bar is displayed as ESRS is activated on your system. When the process is complete, your ESRS status shows **Enabled**.
 12. When your ESRS status is **Enabled**, the process is complete.
 13. If you want to reset ESRS on your system, click **Reset ESRS**. In the **Reset ESRS** dialog, click **Reset** to confirm.
- You can re-enable ESRS by following the steps in this procedure.

Setting Internet online/offline mode

Follow these steps to enable or disable your VxRail Appliance's connection to the Internet.

Note

Some VxRail Manager features are disabled when the appliance Internet connection is disabled.

Procedure

1. In VxRail Manager click **CONFIG**.
The **Config** window is displayed.
2. Click **General**.
The **General** tab is displayed.
3. In the **Configure Network Environment Settings** section, select one of the following:
 - **Offline Mode On:** Internet access for your appliance is disabled.
 - **Offline Mode Off:** Internet access for your appliance is enabled. This is the default setting.
4. Click **Apply**.

Results

When Internet access is disabled (**Offline Mode** set to **On**) some VxRail Manager features are disabled. A message is displayed for the disabled features.

Enabling and disabling cluster health monitoring

Follow these steps to set whether or not VxRail Manager monitors the system health of the cluster.

Cluster health monitoring is normally enabled. You may want to disable it when you are performing service, such as replacing disks and so on.

Procedure

1. In VxRail Manager click **CONFIG**.
The **Config** window is displayed.
2. Click **General**.
The **General** tab is displayed.

3. In the **Suppress Cluster Monitor** section, select one of the following:
 - **Suppress Mode On:** Cluster health is not monitored.
 - **Suppress Mode Off:** Cluster health is monitored and reported. This is the default setting.
4. Click **Apply**.

Results

When cluster health monitoring is disabled (**Suppress Mode** set to **On**) VxRail Manager displays a banner indicating that monitoring is suppressed. You can close the banner by clicking the **X** on the right side of the banner.

Running a complete system diagnostic

Follow these steps to run a complete system diagnostic report for your VxRail Appliance.

Procedure

1. In VxRail Manager click **CONFIG**.
The **Config** window is displayed.
2. Click **General**.
The **General** tab is displayed.
3. In the **System Diagnostics** section, click **Diagnostic**.
VxRail Manager runs a system-wide diagnostic analysis of the appliance. The **System Diagnostics** window is displayed.
4. Observe the **Health check list** in the **System Diagnostics** window.
Click items in the list to expand them for more information.
5. When you are finished with the diagnostic report click **Close**.

Shutting down a VxRail Appliance cluster

You can shut down your VxRail Appliance cluster from VxRail Manager. This feature provides a graceful, automated process for properly shutting down a cluster.

When you shut down a cluster, VxRail Manager automatically does the following:

- Shuts down related virtual machines and services
- Performs system health diagnostics and maintenance mode diagnostics
- Indicates any errors or conditions that prevent shutting down

Follow these steps to shut down a VxRail Appliance cluster:

Procedure

1. In VxRail Manager click **CONFIG**.
The **Config** window is displayed.
2. Click **General**.
The **General** tab is displayed.
3. In the **Shut Down Cluster** section, click **Shut Down**.
The **Shut Down Cluster** dialog box is displayed.

4. Click **Confirm** to continue shutting down.

VxRail Manager begins a precheck of the system and displays the progress on the **Shut Down Pre-Check list**.

5. If the shutdown precheck process fails, VxRail Manager lists error messages in the **Pre-check Result** column. Resolve any issues and click **Retry**.

You can also check **Ignore and continue** and then click **Shut Down** by force.

6. When the shutdown precheck process successfully completes, click **Shutdown**.

A progress bar is displayed as the automated shut down process continues.

7. Click **Close** to exit.

Wait for all the LEDs to turn off.

Results

When the shut down process is complete, VxRail Manager indicates that shut down is successful.

If the process does not complete successfully, follow the on-screen prompts to correct any errors.

Selecting a language for VxRail Manager

You can specify the language that displays in the VxRail Manager user interface.

The VxRail Manager user interface supports the following languages:

- English (default)
- French
- German
- Korean
- Japanese
- Simplified Chinese

Procedure

1. In VxRail Manager click **CONFIG**.

The **Configuration** window is displayed.

2. Click **General**.

The **General** tab is displayed.

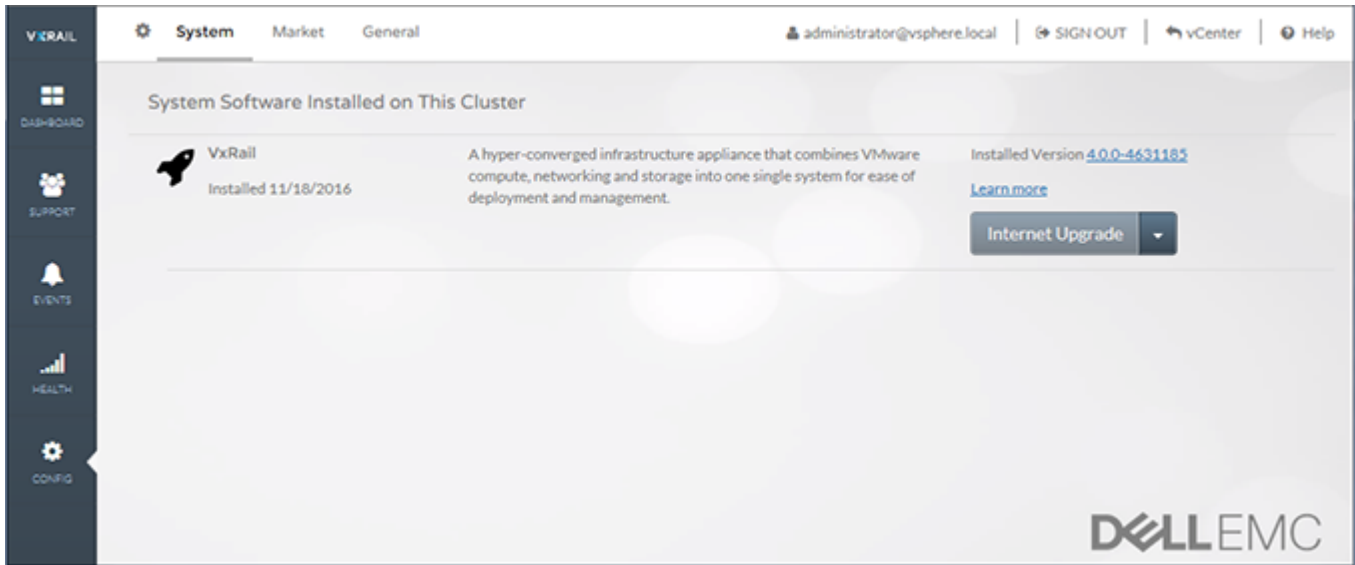
3. In the **Choose Your Language** section of the screen, click the language you want to use.

The VxRail Manager user interface will immediately reload in the language you selected.

Config System tab

The **System** tab of the VxRail Manager **Config** window displays information about the applications and add-ons currently installed on your VxRail Appliance. It also allows you to download updates for those components.

Figure 12 VxRail Manager Config > System tab



Use the **System** tab to view the following:

- **System Software Installed on this Cluster:** The list displays the name, description, and installed version for the software and add-ons installed on your VxRail Appliance.
- **Software updates:** If an update is available for an application, an **Upgrade** button is displayed.

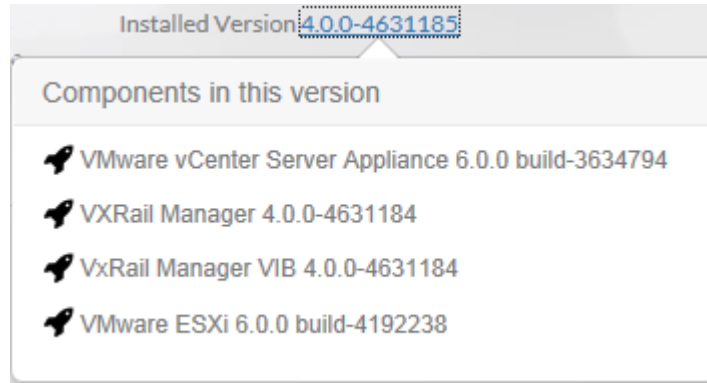
When a new version of an application is available, **CONFIG** in the left navigation bar displays a highlighted number.

Viewing installed applications

Use the **System** tab on the **Config** window to view a list of installed system software.

Procedure

1. In VxRail Manager click **CONFIG**.
The **Config** window is displayed.
2. Click **System**.
The **System** tab is displayed.
3. Scroll the **System Software Installed on this Cluster** list, if necessary, to view system software installed on your VxRail Appliance.
The list includes a description and version number for each application installed. If a newer version of an application is available, the **Upgrade** button is also displayed.
4. To view the components of the installed system software, click **Installed Version**.



The VxRail Manager, vCenter, and ESXi versions are displayed.

Updating system software

Use the **System** tab on the **Config** window to install updates for the system software installed on your VxRail Appliance.

When a new version is available, **CONFIG** in the left navigation bar displays a highlighted number. The **Upgrade** button is also displayed for the application in the **System Software Installed on this Cluster** list.

Note

You may not be able to update your system software in some circumstances:

- If you are using a stretch cluster VxRail configuration
- If you have standard vSphere licenses
- If your cluster is in an unhealthy state or has critical health alarms

Open a service request or contact your Dell EMC or partner representative to arrange help in updating your system.

Procedure

1. In VxRail Manager click **CONFIG**.

The **Config** window is displayed.

2. Click **System**.

The **System** tab is displayed.

3. Scroll the **System Software Installed on this Cluster** list, if necessary, to view the system software installed on your VxRail Appliance.

If a newer version is available, the **Upgrade** button is displayed.

4. Click **Upgrade** to view the options:

- **Upload local version:** Allows you to upload a new version of the software from your local storage. This is useful if you do not have Internet access from your VxRail Appliance.
- **Download:** Allows you to download a new version of the software. You must have Internet access to download system software.

Not all applications will show both options.

5. Click the option you want.

The software is copied to your VxRail Appliance.

6. Click **Continue** to begin installation of the software.
7. Enter your login information for VxRail Manager and for vCenter Server and then click **Submit**.

VxRail Manager performs a series of system checks and begins the update process.

The upgrade process status is displayed. When the process is done, VxRail Manager displays "Upgrade complete". If any problems are encountered during installation, VxRail Manager will display an appropriate message and steps to correct the issue.

8. Click **Refresh** to reload the **System Software Installed on this Cluster** screen.

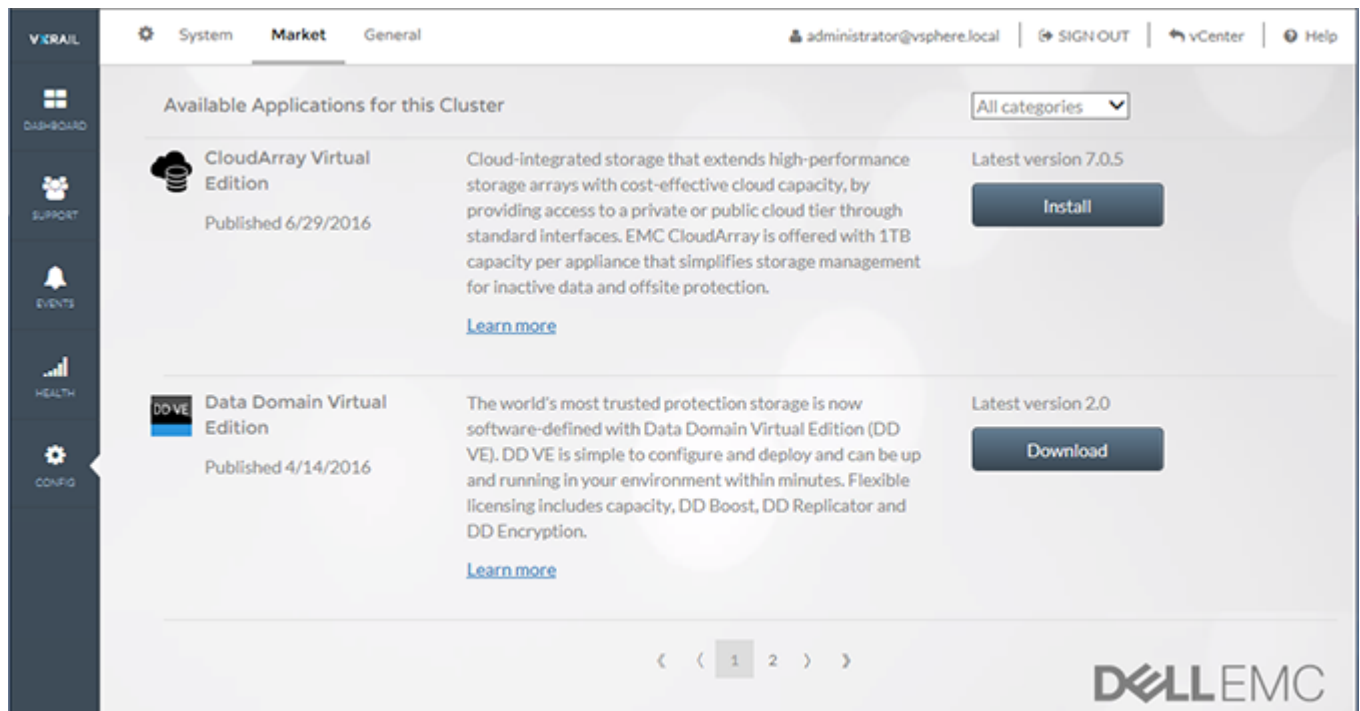
When the installation is complete, the new version is displayed in the **System Software Installed on this Cluster** list.

Using the VxRail Market

The VxRail Market lets you download, install, and upgrade qualified software products for your appliance.

Choose from a list of applications that add functionality, protection, or management to your VxRail Appliance.

Figure 13 VxRail Market Config > Market tab



Procedure

1. In VxRail Manager click **CONFIG**.
The **Config** window is displayed.
2. Click **Market**.
The **Market** tab is displayed.

3. Scroll the **Available Applications for this Cluster** list, if necessary, to view all the applications available for your VxRail Appliance.

The list includes a description and version number for each application.

4. Filter the application list using the filter selector at the top of the list, if desired.
5. Click **Learn more** if you want to view information about the application.

The application page opens in a separate browser tab.

6. In VxRail Manager, do one of the following to install the application on your appliance:

- Click **Install** to install an application directly.
- Click **Download** to navigate to an external Web page where you can download and install the application.

Refer to [Installing an application from the VxRail Market](#). You can install multiple instances of an application.

7. Multiple instances of an application may be installed. To view and manage instances do the following:
 - a. Click the arrow next to the name of the application to expand the instance listing.

If there is only one instance of an application, the expand arrow is not displayed.

- b. Scroll to the instance you want to manage.
- c. View and manage the instance of the application as desired.

The following status messages may be displayed for an application instance:

- **Downloading:** The application is currently downloading.
- **Pending:** The application is waiting until another application finishes downloading.
- **IP address:** The application is installed.

Installing an application from the VxRail Market

Install a qualified Dell EMC or VMware software product from the VxRail Market.

Procedure

1. In VxRail Manager click **CONFIG**.

The **Config** window is displayed.
2. Click **Market**.

The **Market** tab is displayed.
3. Scroll the **Available Applications for this Cluster** list to find the application you want.
4. Click **Install** to install the application.
5. Fill out the fields as appropriate for the application being installed. For example, you may enter:
 - **Virtual Machine Name**
 - **IP Management address**
 - Time zone

The fields vary depending on the application. Some fields may be pre-populated.

6. Click **Install**.

A status bar shows the progress of the installation. The status messages include:

- **Downloading:** The application is currently downloading.
- **Pending:** The application is waiting until another application finishes downloading.
- **IP address:** The application is installed.

7. To install multiple instances of an application, repeat this procedure.

Managing applications and add-ons with VxRail Manager

Manage your installed software products from the VxRail Market.

Procedure

1. In VxRail Manager click **CONFIG**.

The **Config** window is displayed.

2. Click **Market**.

The **Market** tab is displayed.

3. Scroll the **Available Applications for this Cluster** list to find the application you want.

Filter the application list using the filter at the top of the list, if desired.

4. If there are multiple instances of the application, follow these steps:

- a. Click the arrow next to the name of the application to expand the instance listing.

If there is only one instance of an application, the expand arrow is not displayed.

- b. Scroll to the instance you want to manage.

5. For the selected application, do either of the following:

- Click **Open** to view the VM console.
- Click **Manage** to view the application's management interface. (Not every application has a management option.)

CHAPTER 6

External storage

Although each VxRail Appliance includes its own on-board storage resources, you can also use your appliance with external Dell EMC storage. Your VxRail Appliance supports NFS datastores and VMFS datastores over iSCSI.

- [NFS and VMFS over iSCSI datastores.....](#) 56
- [Setting up external NFS storage for a VxRail Appliance.....](#) 56
- [Setting up external VMFS over iSCSI storage for a VxRail Appliance.....](#) 57

NFS and VMFS over iSCSI datastores

Your VxRail Appliance can be used with external Dell EMC storage with NFS datastores or VMFS over iSCSI datastores.

You may want to consider using external storage for workloads with high storage capacity requirements relative to the amount of required compute resources (CPU cores and RAM). External datastores allow you to scale VxRail Appliance compute resources separately from storage capacity. This can improved overall hardware usage levels. As a result it may be more cost-effective to use an external storage array such as Unity, VNX, Cloudarray, Isilon, or Windows/Linux storage services to provide additional storage for your VxRail Appliance cluster.

Note that external storage arrays must be managed separately. You cannot use the automated workflows in VxRail Manager for vSphere storage configuration and management with external datastores. Instead, you must use the vSphere Web Client to configure NFS and iSCSI on the ESXi hosts in the VxRail Appliance cluster, and to create NFS datastores and VMFS datastores over iSCSI on external arrays in the vCenter Server Appliance instance in the VxRail Appliance cluster. You must also use provisioning virtual machines on these external datastores in vCenter using the vSphere Web Client.

Refer to VMware vSphere documentation for details about using NFS and iSCSI storage with ESXi:

- [Understanding Network File System Datastores](#)
- [About the Software iSCSI Adapter](#)

Setting up external NFS storage for a VxRail Appliance

Follow these guidelines to set up your VxRail Appliance for use with an NFS datastore.

Before you begin

Many storage products provide NFS services, including including Dell EMC UNity, VNX, Isilon, CloudArray, and Windows/Linux NFS services. These guidelines assume that you have already installed and provisioned your VxRail Appliance cluster as well as your external NFS storage server.

The NFS datastore is created directly from vCenter on your VxRail Appliance cluster. A VLAN and a vSphere Distributed Switch (VDS) are used.

Refer to the VMware vSphere documentation, [Set Up NFS Storage Environment](#), for details about NFS storage with ESXi.

Procedure

1. Log in to the as an authorized user.
2. Click the vSphere Web Client home icon.
3. Click **Hosts and Clusters**.

In a VxRail Appliance cluster, NFS shared folders can be assigned to all connected nodes.

4. Click the cluster name in the list.
5. Click the **Related Objects** tab and then select **Datastores**.
6. Click the **Create a New Datastore** icon.

The **New Datastore** window is displayed.

7. In the **Location** window type the datastore name and select the location for the datastore.
8. In the **Type** window select **NFS**.
9. In the **Select NFS version** window choose an NFS version.
10. In the **Name and configuration** window, specify necessary information to add the external NFS storage.

For **Folder** enter the Export Path of external storage array.

11. In the **Host accessibility** window, select the hosts in the VxRail Appliance cluster that will mount the datastore.

You can select any or all hosts in the cluster.

12. In the **Ready to complete** window, review your entries and then click Finish to complete the datastore creation.

The new NFS datastore has been created.

Results

After the NFS datastore is created, you can:

- Provision VMs to the NFS datastore using the vSphere Web Client
- Perform standard operations such as Open Console, Power On, Shutdown VM, Suspend VM, and clone VM
- Migrate VMs between VxRail Appliance datastores and NFS datastores

In maintenance mode, VMs move to another node on the same NFS datastore automatically. The rebooted node is connected to the NFS datastore automatically.

Setting up external VMFS over iSCSI storage for a VxRail Appliance

Follow these guidelines to set up your VxRail Appliance for use with a VMFS datastore over iSCSI.

Refer to the VMware documentation, [Configuring iSCSI Adapters and Storage](#), while setting up external iSCSI storage for your VxRail Appliance.

The general steps to configure iSCSI storage for VxRail include the following :

1. Set up the iSCSI network portgroup.
2. Set up an active software iSCSI adapter.
3. Configure multipath policy for the iSCSI storage device.
4. Create a new VMFS datastore over iSCSI.

All the steps are done using the vSphere Web Client. A software iSCSI adapter allows standard NICs to connect ESXi hosts to a remote iSCSI target on the IP network. A VLAN and vSphere distributed switch are used. For details please refer to the VMware documentation, [About the Software iSCSI Adapter](#).

Set up the two iSCSI network portgroups

In the process of port binding, you create two virtual VMkernel adapters for each physical network. You then associate the VMkernel adapters with the software iSCSI

storage adapter created in the following steps. Create the distributed port groups first.

Note

The key is to avoid a network conflict with the VSAN. The uplink1/uplink2/vmnic0 description in the following procedure is suitable for most standard VxRail Appliance installations. Some VxRail Appliance models have extra Ethernet ports. You can use those ports as an alternate configuration. Replace uplink1 and uplink2 with the proper uplink numbers according to the extra ports.

Procedure

1. Log in to the vSphere Web Client as an authorized user.
2. In the vSphere Web Client, click the home icon and go to the **Networking** configuration page.
3. Highlight **VMware HCIA Distributed Switch** and then right-click it to create a new distributed port group.
The **New Distributed Port Group** window is displayed.
4. In the **Select name and location** window enter the port group name.
A name containing "uplink1" is recommended.
5. In the **Configure settings** window enter the general properties and specify the related VLAN ID if you are using a VLAN.
6. In the **Ready to complete** window, review your entries and then click **Finish** to complete the port group creation.
The new distributed port group is created.
7. In the **Home** list, right-click the new portgroup and select **Edit Settings**.
The **Edit Settings** window is displayed.
8. If the port speed is 10Gb, change **Traffic Shaping** for the iSCSI portgroup as follows:
 - Set **Ingress traffic shaping: status** to **Enabled**, **Average bandwidth(kbit/s)** to **1048576**, **Peak bandwidth (kbit/s)** to **1048576**, and **Burst size (KB)** to **102400**.
 - Set **Egress traffic shaping: status** to **Enabled**, **Average bandwidth(kbit/s)** to **1048576**, **Peak bandwidth (kbit/s)** to **1048576**, and **Burst size (KB)** to **102400**.
9. Change **Teaming and failover** for the iSCSI portgroup as follows:
 - Keep **uplink1** as the **Active** uplink.
 - Move the other uplinks to **Unused**.
10. Create the second portgroup by repeating steps 3 through 9 with following value changes:
 - In step 4, a name containing "uplink2" is recommended.
 - In step 9, keep **uplink2** as the **Active** uplink.

Results

Set up of the two portgroups is complete.

Create two VMkernel adapters on the hosts in the cluster

Procedure

1. In the vSphere Web Client, click the home icon.
2. Select one of the hosts in the cluster.
3. Navigate to **Manage > Networking > VMkernel adapters**.
4. Click the **Add host networking** icon to add a VMkernel adapter with the first distributed port group you created.

The **Add Networking** window is displayed.

5. In the **Select connection type** window select **VMkernel Network Adapter**.
6. In the **Select target device** window choose **Select an existing network** and click **Browse**.
7. Select the "uplink1"-related distributed portgroup you created in the previous steps.
8. In the **IPv4 settings** window select **Use the static IPv4 setting**.
This is defined according to your network environment. Make sure the IP address is unique in the network and accessible to the iSCSI target server IP address.
9. In the **Ready to complete** window, review your entries and then click **Finish** to complete the VMkernel creation.
10. Create the second VMkernel adapter by repeating steps 4 through 9 with following value change:
 - In step 7, select the "uplink2"-related distributed portgroup.

Results

The two newly added VMkernel adapters are displayed and the detail info is shown in the lower panel. The network configuration for iSCSI on the host is finished.

Set up an active software iSCSI adapter

Before you begin

Note

The external iSCSI storage should already be prepared as required for your environment. this procedure does not cover the details of creating volumes used as external iSCSI storage.

Procedure

1. In the left panel of the vSphere Web Client, click **vCenter > Hosts and Clusters** and select the ESXi host you previously configured.
2. Click **Manage > Storage Adapters** and click the **Add (+)** button to add a software iSCSI adapter.
3. In the **Add Software iSCSI Adapter** window, click **OK**.

If needed, you can further configure the adapter in the **Adapter Details** section.

The newly added storage adapter is displayed in the **Storage Adapters** list.

4. Click **Manage > Storage Adapters** and click **iSCSI Software Adapter**.

The created iSCSI name is listed in the **Identifier** column and **Properties** tab of the lower panel. Its format is `iqn.1998-01.com.vmware:xxxxxx-xxxxx`. You can change the iSCSI name by clicking **Edit** in the **Properties** tab of the lower panel.

5. Click **Network Port Binding** and click the **Add (+)** button.
6. In the **Bind .. with VMkernel Adapter** window, select the VMkernel network adapter that created in the previous steps.

The message "Due to recent configuration changes, a rescan of this storage adapter is recommended" is displayed.

7. Click the **Rescan the iSCSI Software Adapter** icon.
8. In the vSphere Web Client navigate to **Manage > Storage > Storage Adapters**.
9. Select the iSCSI software adapter you created and click **Targets > Dynamic Discovery**.
10. Click **Add**.
11. In the **Add Send Target Server** window specify the IP address of the iSCSI server and click **OK**.

The message "Due to recent configuration changes, a rescan of this storage adapter is recommended" is displayed.

Note

We recommend that you do not change the host iSCSI name after adding iSCSI storage information.

12. Click the **Rescan the iSCSI Software Adapter** icon.

The warning message disappears and the iSCSI Target server is displayed in the lower panel.

13. Click **Static Discovery** to show the full target name of the iSCSI storage.

Assign volumes on iSCSI storage

Procedure

1. Repeat the procedures "Create a VMkernel adapter on the hosts in the cluster" and "Set up an active software iSCSI adapter" on the other nodes in the cluster.
2. Configure your iSCSI storage to assign storage volume mapping with the iSCSI name for all hosts.
3. In the vCenter Web Client choose each host and navigate to **Manage > Storage > Storage Adapters**.
4. Click the **Rescan the iSCSI Software Adapter** icon.

Results

In the **Devices** tab, the new iSCSI volume is shown mapped to the ESXi host (iSCSI client).

Configure multipath for the iSCSI volumes

To avoid any negative influence on VSAN performance, you must set multipath policy to **Fixed** and set **Preferred Path** on **vmnic0**. If you are using the extra ports on your VxRail Appliance (if equipped), set **Preferred Path** as the appropriate vmnic according to the extra ports.

Procedure

1. In the vCenter Web Client choose each host and navigate to **Manage > Storage > Storage Device**.
2. Choose the iSCSI volume in the **Storage Devices** list.
3. In the **Properties** tab, click **Edit Multipathing....**
The **Edit Multipathing Policies** window is displayed.
4. Select **Fixed(VMware)** for **Path selection policy** and then select the row in which **Runtime Name** contains **C0**.
5. Click **OK**.

Results

In the **Properties** tab, the **Path Selection Policy** section shows **Fixed(VMware)** and **vmhbaxx:C0:Tx:Lx**.

Mount a new VMFS datastore over iSCSI

To make full use of the new iSCSI storage, create a new datastore. This datastore can be mounted to all the hosts in the cluster.

Procedure

1. In the vCenter Web Client select the cluster name.
2. Click **Related Objects > Datastores**, then click the **Add New Datastore** icon to create a new datastore over iSCSI.
The **New Datastore** window is displayed.
3. In the **Type** window, select **VMFS**.
4. In the **Name and device selection** window specify the name for the datastore:
 - a. Choose one of the ESXi hosts for **Select a host to view its accessible disks/Luns**.
 - b. Select the available iSCSI volume in the lower table.
5. In the **Partition configuration** window, adjust the iSCSI datastore **Size**.
It is recommended to set **Size** to **Use all available partitions**.
6. In the **Ready to complete** window, review your entries and then click **Finish** to complete the datastore creation.
The datastore over iSCSI is listed. Its status is "Unknown".
7. Click the **Refresh** icon.
The datastore status changes to "Normal".
8. In the **Storage** tab, check the connection status between the iSCSI datastore and the hosts.

Results

After the VMFS over iSCSI datastore is created, you can:

- Provision VMs to the VMFS datastore using the vSphere Web Client
- Perform standard operations such as Open Console, Power On, Shutdown VM, Suspend VM, and clone VM
- Migrate VMs between VxRail Appliance datastores and iSCSI datastores
- Protect iSCSI external storage access with redundant path

In maintenance mode, VMs move to another node on the same iSCSI datastore automatically. The rebooted node is connected to the iSCSI datastore automatically. The iSCSI volume is kept as Remote Disk.

The benefit from the iSCSI multipath configuration is that if the physical adapter vmnic0 is down, iSCSI IO switches to another vmnic without interruption. When vmnic0 is back online, iSCSI IO will switch back to vmnic0 without IO interruption.

CHAPTER 7

Replacing and adding hardware

You may be able to add or replace hardware components on your VxRail Appliance such as hard disk drives (HDDs), solid state drives (SSDs), and power supplies. Only qualified personnel should perform these procedures. For some hardware components, you may need to contact Customer Support to arrange for repair or replacement.

Using the SolVe Desktop application for VxRail Series hardware tasks

Step-by-step hardware component tasks such as replacement and upgrade procedures are available through the SolVe Desktop application.

⚠ CAUTION

To avoid potential data loss, refer to the VxRail Series procedures in the SolVe Desktop application before performing any hardware replacement or upgrade procedures.

To download the SolVe Desktop application, go to <https://support.emc.com> and click **SolVe** on the main page. Download and install the SolVe Desktop application on your computer.

You must have an online support account to use the SolVe Desktop application.

