

VersaVirtual Appliance User Manual

Catalog Number 9300-VVB-PRJ



by **ROCKWELL AUTOMATION**

User Manual

Original Instructions

Important User Information

Read this document and the documents listed in the additional resources section about installation, configuration, and operation of this equipment before you install, configure, operate, or maintain this product. Users are required to familiarize themselves with installation and wiring instructions in addition to requirements of all applicable codes, laws, and standards.

Activities including installation, adjustments, putting into service, use, assembly, disassembly, and maintenance are required to be carried out by suitably trained personnel in accordance with applicable code of practice.

If this equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

In no event will Rockwell Automation, Inc. be responsible or liable for indirect or consequential damages resulting from the use or application of this equipment.

The examples and diagrams in this manual are included solely for illustrative purposes. Because of the many variables and requirements associated with any particular installation, Rockwell Automation, Inc. cannot assume responsibility or liability for actual use based on the examples and diagrams.

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Throughout this manual, when necessary, we use notes to make you aware of safety considerations.



WARNING: Identifies information about practices or circumstances that can cause an explosion in a hazardous environment, which may lead to personal injury or death, property damage, or economic loss.



ATTENTION: Identifies information about practices or circumstances that can lead to personal injury or death, property damage, or economic loss. Attentions help you identify a hazard, avoid a hazard, and recognize the consequence.

IMPORTANT Identifies information that is critical for successful application and understanding of the product.

These labels may also be on or inside the equipment to provide specific precautions.



SHOCK HAZARD: Labels may be on or inside the equipment, for example, a drive or motor, to alert people that dangerous voltage may be present.



BURN HAZARD: Labels may be on or inside the equipment, for example, a drive or motor, to alert people that surfaces may reach dangerous temperatures.

ARC FLASH HAZARD: Labels may be on or inside the equipment, for example, a motor control center, to alert people to potential Arc Flash. Arc Flash will cause severe injury or death. Wear proper Personal Protective Equipment (PPE). Follow ALL Regulatory requirements for safe work practices and for Personal Protective Equipment (PPE).

The following icon may appear in the text of this document.



Identifies information that is useful and can help to make a process easier to do or easier to understand.

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About this Publication

This manual provides information on how to install, configure, and manage the Rockwell Automation Series B VersaVirtual™ Appliance (VVA), as follows.

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Abbreviations

This manual uses the following abbreviations.

Abbreviation	Meaning
AD	Active Directory
BMC	Baseboard Management Controller
BOSS	Boot Optimized Server Storage
DCUI	Direct Console User Interface
DNS	Domain Name System
FQDN	Fully Qualified Domain Name
GUI	Graphical User Interface
НА	High Availability
HCL	Hardware Compatibility List
HD	Hard drive
HSRP	Hot standby Router Protocol
idrac	Integrated Dell Remote Access Controller
LDAP	Lightweight Directory Access Protocol
MAC	Machine Access Controller
NAT	Network Address Translation
NPU	Nano Processing Unit
NTP	Network Time Protocol
OVF	Open Virtualization Format
SSD	Solid-state drive
SSH	Secure Shell
SSO	Single Sign On
VA	Virtualization Appliance
vCPU	Virtual Central Processing Unit
VLAN	Virtual Local Area Network
VM	Virtual Machine
vSAN	Virtual Storage Area Network
VVA	VersaVirtual Appliance

Features

Overview

The Rockwell Automation VVA is a hyperconverged (integrated computer, networking, and storage) appliance intended for entry-level virtualization in a managed environment. The VVA ships in a fully configured state, and includes support services to help minimize on-site customer configuration.

The VVA CPU, memory, and storage are fully customizable. A VVA has the following baseline specifications.

Component	Baseline specification		
Processor (CPU)	3rd Generation Intel Xeon D-2776NT 2.10 Ghz		
Memory	128 GB		
Storage controllers	Boot Optimized Storage Subsystem (BOSS), 2 x M.2 SSDs 480 GB		
Network (Ethernet) connection ports	4 x 10GbE SFP (max 50 Gb)		
Usable storage	1.9 TB		
Operating system	VMware vSphere [®] Standard		
Input power	100240V AC, 50/60 Hz, dual		
Operating temperature range	-555 °C (23131 °F), with a cold start temperature of 0 °C (32 °F)		
Mounting options	Rack		

Figure 1 - VersaVirtual™ Series B Overview





Download Firmware, Add-on Profile, EDS, and Other Files

You can download firmware, associated files (such as AOP, EDS, and DTM), and access product release notes from the Product Compatibility and Download Center at <u>rok.auto/pcdc</u>.

Additional Resources

The following documents contain information for related Rockwell Automation products.

You can view or download additional publications at <u>rok.auto/literature</u>.

Resource	Description
EtherNet/IP [™] Network Devices User Manual <u>, ENET-UM006</u>	Describes how to configure and use EtherNet/IP devices to communicate on the EtherNet/IP network.
Ethernet Reference Manual, ENET-RM002	Describes basic Ethernet concepts, infrastructure components, and infrastructure features.
System Security Design Guidelines Reference Manual, <u>SECURE-RM001</u>	Provides guidance on how to conduct security assessments, implement Rockwell Automation products in a secure system, harden the control system, manage user access, and dispose of equipment.
UL Standards Listing for Industrial Control Products, publication <u>CMPNTS-SR002</u>	Assists original equipment manufacturers (OEMs) with construction of panels, to help ensure that they conform to the requirements of Underwriters Laboratories.
American Standards, Configurations, and Ratings: Introduction to Motor Circuit Design, publication <u>IC-ATOO1</u>	Provides an overview of American motor circuit design, based on methods outlined in the NEC.
Industrial Components Preventive Maintenance, Enclosures, and Contact Ratings Specifications, publication <u>IC-TD002</u>	Provides a quick reference tool for Allen-Bradley [™] industrial automation controls and assemblies.
Safety Guidelines for the Application, Installation, and Maintenance of Solid-state Control, publication <u>SGI-1.1</u>	Designed to harmonize with NEMA Standards Publication No. ICS 1.1-1987 and provides general guidelines for the application, installation, and maintenance of solid-state control in the form of individual devices or packaged assemblies that incorporate solid-state components.
Industrial Automation Wiring and Grounding Guidelines, publication <u>1770-4.1</u>	Provides general guidelines for installing a Rockwell Automation industrial system.
ProposalWorks™ configuration software, <u>rok.auto/systemtools</u>	Helps configure complete, valid catalog numbers, and build complete quotes that are based on detailed product information.
Rockwell Automation Global SCCR tool, <u>rok.auto/sccr</u>	Provides coordinated high-fault branch circuit solutions for motor starters, soft starters, and component drives.
Product Certifications website, rok.auto/certifications	Provides declarations of conformity, certificates, and other certification details.

Notes:

Install the VersaVirtual Appliance

To install the VVA, perform the steps that are contained in the following sections:

- Install the VVA in a Rack
- Identify Ports and Components
- <u>Connect Network Cables</u>
- <u>Connect Power Cables</u>
- Install Front Bezel

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Install the VVA in a Rack

The VVA must be mounted in a rack.

IMPORTANT	Before you install the VVA into your rack, perform the following steps.
	 Review and follow any safety guidelines that are included in the rack installation instructions.
	2. Unbox the VVA and remove the shipping brackets and front bezel.
	3. Install the cable management arms.
	 Mount the VVA in your rack using the hardware that came with your VVA and rack.

Identify Ports and Components

The VVA contains the following ports and components:

- Two server modules left and right
- One NPU module, which is used as a dedicated host for the VMware $\mathsf{vSAN}^{^{\mathrm{TM}}}$ witness host and other appliances
- Two power supplies



Each server module has five network ports, including one Integrated Dell Remote Access Controller (iDRAC) port. These server module ports must be connected to your network switch.

The NPU module has two network ports that must also be connected to your network switch.





Connect Network Cables

The VVA ships with the following items:

- Eight Ethernet patch cables
- Two copper direct attach cables (DAC)
- Four copper transceiver modules



In order for the VVA to function properly, you must allocate eight GbE ports in your network switch: four access ports, and four trunk ports.

Rockwell Automation recommends that you configure your VVA to use two switches that are connected to the balance of plant network, or separate power sources. This configuration can help improve redundancy and avoid disruption due to maintenance or failure. For more information, see <u>Integrate the Network on page 15</u>.

To connect your VVA to two switches, perform the following procedures.



- 1. Insert a transceiver module into ports 1 and 2 on both servers.
- 2. Connect an Ethernet cable from port 1 of server 1, to port 1 of switch 1.
- 3. Connect an Ethernet cable from port 2 of server 1, to port 1 of switch 2.
- 4. Connect an Ethernet cable from iDRAC port of server 1, to port 3 of switch 1.
- 5. Connect an Ethernet cable from port 1 of server 2, to port 2 of switch 1.
- 6. Connect an Ethernet cable from port 2 of server 2, to port 2 of switch 2.
- 7. Connect an Ethernet cable from **iDRAC port** of **server 2**, to **port 3** of **switch 2**.
- 8. Connect an Ethernet cable from NPU port 1, to port 4 of switch 1.
- 9. Connect an Ethernet cable from NPU port 2, to port 4 of switch 2.
- 10. Connect one DAC cable from port 3 of server 1, to port 3 of server 2.
- 11. Connect one DAC cable from **port 4** of **server 1**, to **port 4** of **server 2**.
- 12. Install dust filtration bezel.

Connect Power Cables

Connect the appliance to a power source with the supplied power cables. When connected, the power supply indicators illuminate.



Install Front Bezel

To install the front bezel, perform the following steps.

- 1. Align the right bracket to the right ear of the unit.
- 2. Tighten the two screws to secure the right bracket to the right ear.



3. Repeat this process for the left bracket.



4. Align the bezel with the brackets and press until the bezel clicks into place.



The front bezel is now installed.

Notes:

Integrate the Network

This section provides information on how to integrate the VVA into your network.

Connect the Appliance to the Network

Use the Default VLAN

Before you connect the appliance to your network, note the following:

- Rockwell Automation recommends that you configure your VVA to use two switches. The switches do not need to be stacked or configured as a redundant pair, but should be connected to the balance of plant network, or separate power sources. This configuration can help improve redundancy and avoid disruption due to maintenance or failure.
- Rockwell Automation recommends that you use the default virtual local area network (VLAN) and subnet address. For more information, see the <u>Use the Default VLAN</u> section.
- If you use the VVA default VLAN and subnet, the default management VLAN 3249 should be added to the layer 3 core switch or router, and all switches between the server access switches and core switch. The core switch should also be configured with an IP address of 192.168.249.1/24 on VLAN 3249.
- Rockwell Automation recommends that you add a list of default VVA IP addresses and corresponding host names to your host file. For more information, see the <u>Add Host</u> <u>Names to Local Host File</u> section on page <u>17</u>.
- IP address schemes can be changed. For more information, see <u>Change the IP Address</u> <u>Schemes on page 69</u>.
- In order to manage the VVA, you must configure the management ports on you switch as trunk ports. The iDRAC ports on your switch must also be configured as access ports. Check the documentation that came with your switch for more information.

The default VLAN for the VVA is 3249 and uses subnet 192.168.249.0/24. To add the default VVA VLAN to your network and assign your router an IP address of 192.168.249.1, perform the following steps.

IMPORTANT The following two steps are based on the use of a Cisco[®] Stratix[®] 5410 core switch and two Stratix 5410 access switches.

1. Sign in to your core router and add the following entries:

```
router#config term
router#config terminal
router(config)#vlan 3249
router(config-vlan)#name VersaVirtual
router(config-vlan)#interface vlan 3249
router(config-if)#ip address 192.168.249.1 255.255.255.0
router(config-if)#description VersaVirtual Management
router(config-if)#exit
router(config)#end
router#wr
```

2. Verify the configuration of your switches. The configuration should resemble the following.

Switch 1

```
vlan 3249
 name VVA_Management
1
vlan 3250
 name VVA_vMotion
T
vlan 3251
 name VVA_vSAN
interface GigabitEthernet1/1
 description host 1 port 1
 switchport mode trunk
interface GigabitEthernet1/2
 description host 2 port 1
 switchport mode trunk
T
interface GigabitEthernet1/3
 description Host 1 iDRAC
 switchport access vlan 3249
 switchport mode access
T
interface GigabitEthernet1/4
 description NPU port 1
 switchport access vlan 3249
 switchport mode access
```

Switch 2

```
vlan 3249
name VVA Management
!
vlan 3250
name VVA vMotion
Т
vlan 3251
name VVA vSAN
1
interface GigabitEthernet1/1
description host 1 port 2
switchport mode trunk
!
interface GigabitEthernet1/2
description host 2 port 2
 switchport mode trunk
interface GigabitEthernet1/3
description Host 2 iDRAC
 switchport access vlan 3249
switchport mode access
interface GigabitEthernet1/4
description NPU port 2
 switchport access vlan 3249
 switchport mode access
```

Add Host Names to Local Host File

To add a list of default VVA IP addresses and corresponding host names to your local host file, perform the following steps.

Note: the procedures in this section are based on a Windows 10 computer. Other versions of Windows might vary.

1. Open Windows® Notepad from the Windows Start menu or Search bar.

All	Apps	Documents	Settings	More 👻
Best m	atch			
4	Notepad App			
,○ ni	otepad			

2. Copy and paste the following list of IP addresses and host names into a new note.

192.168.249.11	host1-bmc.ra.internal # Host 1 BMC
192.168.249.12	host2-bmc.ra.internal # Host 2 BMC
192.168.249.18	vCenter.ra.internal # vCenter server
192.168.249.14	host1.ra.internal # cluster host 1
192.168.249.15	host2.ra.internal # cluster host 2
192.168.249.13	npu.ra.internal # management host
192.168.249.16	witness.ra.internal # witness host
192.168.249.17	netsvcs.ra.internal # DNS server
192.168.249.19	<pre>support-probe.ra.internal # Support probe</pre>
192.168.249.20	<pre>support-proxy.ra.internal # Support proxy</pre>

3. Leave the note open.

- 4. Run Windows Notepad as administrator:
 - a. Right-click Notepad from the Start menu, or Search bar
 - b. Select Run as Administrator.

All	Apps	Docur	nents	Settings	More 🔻
Best m	atch				
4	Notepad				
	Арр		5	Run as admini	strator
			ß	Open file locat	tion
			-12	Pin to Start	
			-12	Pin to taskbar	
			Û	Uninstall	
l.					
0	otenad				

- 5. Select the File menu > Open.
- 6. Navigate to the following Windows directory: Local Disk (C:)\Windows\System32\Drivers\etc



7. From the File Type dropdown menu, select All Files.



8. Select the hosts file and then Open.

/ Open			×
$\leftarrow \rightarrow$	↑ 📕 « Windows > S	system32 > drivers > etc	✓ Ů
Organize	 New folder 		1== - [] ?
^	Name	Date modi	
L .	hosts	3/20/2023 -	
	Imhosts.sam	12/7/2019	
4	networks	12/7/2019	
1	protocol	12/7/2019	
	services	3/9/2023 6	No proviny available
			no preview available.
~ •	< Comparison of the second sec	>	
	File name: hosts		 ✓ All Files ∨
		Encoding: Auto-Dete	ct v <u>O</u> pen Cancel

- 9. In the hosts file, delete any entries for the Default VVA Network scheme. See step <u>2.</u> for the default values.
- 10. Return to your original Windows Notepad document that contains the list of new hosts and IP addresses.

1	"husts - Notepad			-	×
	He Edit Format View He	6			
	be placed in the fir	st column followed by	the corresponding host name.		
	The IP address and t	he host name should b	be separated by at least one		
	space.				
	Additionally, comment	ts (such as these) no	w be inserted on individual		
	lines or following t	he machine name denot	ted by a '#' symbol.		- 1
	·				
	For example:				
	102.54.94.97	rhino.acme.com	# source server		
	38.25.63.10	x.acme.com	# x client host		
	localhost name resol	ution is handled with	in DMS itself.		
	127.0.0.1	localhost			
	111	localhost			
ł					

11. Select all entries with CTRL+A.



- 12. Copy the entries with CTRL+C.
- 13. Return to the hosts file.
- 14. Place your cursor below the last line of text.
- 15. Paste the new entries with CTRL+V.

	osta - Notepad						-		\times
Fie	Edit Format View He	elo							
+ Th	is file contains t	the mappings of IP add	fresses to host names. Each						
# en	try should be kept	t on an individual lin	e. The IP address should						
# be	placed in the fir	est column followed by	the corresponding host name.						
+ Th	e IP address and t	the host name should b	e separated by at least one						
# sp	oce.								
* 45	ditionally, commer	nts (such as these) ma	ny be inserted on individual						
* 15	nes or following t	the machine name denot	ted by a '#' symbol.						
•									
# Fo	r example:								
:	100 24 04 07								
5	102.54.94.97	Phino.acme.com	# sounce server						
	38.25.03.10	x.acme.com	# x client host						
# 30	calhost name resol	lution is handled with	in DWS itself.						
	127.0.0.1	localhost							
	011	localhost							
192.	168,249.11 host1-t	onc.ra.internal # Host	1 Saseboard Management Controller						
192.	168.249.12 host2-b	bec.ra.internal # Host	2 Baseboard Management Controller						- 1
192.	168.249.18 vCenter	r.ra.internal # vCente	in server						
192.	168.249.14 host1.	ra.internal # cluster	host 1						
192.	168.249.15 host2.r	ra.internal # cluster	host 2						
192.	168.249.13 npu.ra.	internal # management	host						
192.	168.249.16 witness	s.ra.internal # witnes	s host						
192.	168.249.17 netsvcs	s.ra.internal # DNS se	inven						
192.	168.249.19 support	t-probe.ra.internal #	Support probe						
192.	168.249.20 support	t-proxy.ra.internal #	Support proxy						
<									. 3
				Lo.37, Col.70	100%	Windows (CRUF)	UTF	4	

16. From the File menu, select Save and then close the file.

The default VVA IP addresses are now part of the local hosts file.

Manage the System

Domain Name System Requirements

The Domain Name System (DNS) on your network can be configured to access to the VMware vSphere® Web Client from your VVA. DNS can also be configured to integrate the VVA into an Active Directory (AD) environment. See <u>Configure Active Directory Authentication on page 45</u> for more information.

To access the VMware vSphere Web Client, you must complete one of the following procedures:

- Configure your AD to forward DNS requests from the ra.internal domain to the NetSvcs virtual machine (VM) default IP address – 192.168.249.17.
- Configure your management computer to use the NetSvcs VM default IP address as your DNS server — IP address 192.168.249.17.
- Add entries in your host file for the VVA in the management computer.

Forward DNS Requests

To add DNS conditional forwarders to the VVA, perform the following steps.

- 1. Open the Server Manager from the Windows[®] Start menu.
- 2. On the Server Manager dashboard, select Tools and then DNS.



 In the Navigation pane on DNS Manager, right-click Conditional Forwarders and select New Conditional Forwarder.



The New Conditional Forwarder box displays.

4. In the DNS Domain field, add the following domain: ra.internal

NS Domain:			
ra.internal			
addresses of the maste	er servers:		
IP Address	Server FQDN	Validated	Delete
<click a<br="" add="" here="" to="">192.168.249.17</click>	 <unable resolve="" to=""></unable> 	A timeout occurred duri	Цр
			Down
Store this conditional f All DNS servers in this This will not replic domain controller	forest ate to DNS servers that are p s forest out out out out out out out out out ou	and replicate it as follows: v re-Windows Server 2003	
The server FQDN will not	be available if the appropriate	reverse lookup zones and entries	are not
an ingui cui			

5. Select the <Click here to add...> field and add an IP address.

o o o o num			
a.internal			
addresses of the mast	er servers:		
P Address	Server FQDN	Validated	Delete
<click a<="" add="" here="" td="" to=""><td></td><td></td><td>1</td></click>			1
192.168.249.17	<unable resolve="" to=""></unable>	A timeout occurred duri	<u>ob</u>
			Down
Store this conditional f	forwarder in Active Directory,	and replicate it as follows:	
All DNS servers in this	forest	~	
A This will not replic domain controller	ate to DNS servers that are p s e forward queries time out:	re-Windows Server 2003	
mber of seconds befor			

6. To query and validate the IP address, check the "Store this conditional forwarder in Active Directory . . ." option.

The query timeout settings value can be adjusted as needed.

7. After the IP address is established and validated, select Ok.

8. Confirm ra.internal is listed under the DNS Conditional Forwarder list.

 DNS Manager File Action View Help Pile Pile Pile Pile Pile Pile Pile Pile	
 DNS USMVINSSMWAD001 Forward Lookup Zones Reverse Lookup Zones Conditional Forwarders mvilabs.ra-int.com ra.internal 	IP Address 192.168.249.17

9. To return to the Server Manager dashboard, close the DNS Manager window.

a DNS Manager	-	N
File Action View Help		
◆ ◆ 2 m × 3 2 3 • 1 1 m 1 8 3		

The entry is now added as a DNS conditional forwarder.

Configure the Management Computer

To add the DNS server address to a Windows[®] computer, perform the following steps.

Note: the procedures in this section are based on a Windows 10 computer. Other versions of Windows might vary.

- 1. From the Start menu, open the Control Panel.
- 2. In the Control Panel, select Network and Internet.
- 3. On the Network and Sharing Center, select the Ethernet link.

+ 😨 > Control Pi	anel > Network and Internet > Network a	ind Sharing Center
Control Panel Home	View your basic network infor	mation and set up connections
Change adapter settings	View your active networks	
Change advanced sharing settings	Network 3 Private network	Access type Internet Connections: @ [thereas
Media streaming options		-0

4. On the General tab of Ethernet Status, select Properties.

📮 Ethernet Status	×
General	
Connection	
IPv4 Connectivity:	Internet
IPv6 Connectivity:	No network access
Media State:	Enabled
Duration:	4 days 20:04:54
Speed:	10.0 Gbps
Detais	
Activity	
Sent —	Received
Bytes: 122,683,033,668	41,645,310,831
Propertes Disable	Diagnose
	Close

5. On the Networking tab, select Properties.

etworking		
Connect using:		
😴 vmmet3 Bhem	et Adapter	
		Configure
This connection uses t	the following items:	
Cos Packet	Scheduler soci Version 4 (TCP/I twork Adapter Multipli DP Protocol Driver soci Version 6 (TCP/I	(Pv4) lexor Protocol
<	Con Version V (ICP/I	>
instal	Unratal	Properties
Description Transmission Contro	A Protocol/Internet P	hotocol. The default

6. On the General tab, select Advanced.

Internet Protocol Version 4 (TCP/IPv	4) Properties X
General	
You can get IP settings assigned aut this capability. Otherwise, you need for the appropriate IP settings.	omatically if your network supports to ask your network administrator
O Obtain an IP address automatic	aly
Use the following IP address:	
IP address:	10 . 200 . 200 . 400
Subnet mask:	255.000.000
Default gateway:	10 . 108 . 198
Obtain DNS server address aut	omatically
• Use the following DNS server a	ddresses:
Preferred DNS server:	10 . 200 . 200 . 300
Alternate DNS server:	10
Validate settings upon exit	Advanced
	OK Cancel

7. On the DNS tab, select Add.

dvanced TCP	IP S	ettings			>
P Settings DI	IS	WINS			
DNS server ad	dres	ses, in order of	use:		
10.					2
					1
	[Add	Edit	Remove	
The following	three	settings are ap	plied to all com	ections with TCP/I	P
Append pr	mary	and connection	specific DNS st	uffixes	
Appen	d par	ent suffixes of	the primary DNS	suffix	

8. Enter the IP address for your DNS server and select Add.

TCP/IP DNS Server		×
DNS server:		
192.		
	Adve Cancel	1
	Ada Cancel	

9. On the DNS tab, select the new DNS address, press the green up-arrow until the address is at the top of the order, and then select Ok.

Advanced TCP/IP	Settings			>
IP Settings DNS	WINS			
DNS server addre	esses, in order of	use:		
192.	-			1
10.				
			_	
	Add	Edt	Remove	
O Append these	DNS suffixes (in	order):		2
	Add	Edt	Renove	
DNS suffix for th	s connection:			
Register this of Use this comm	connection's addr	esses in DNS ix in DNS registr	ation	_
		100	OK	Cancel

- 10. On the General tab, verify that the IP address just added is the preferred DNS server address.
- 11. Once verified, select Ok.

Internet Protocol Version 4 (TCP/IPv	4) Properties X
General	
You can get IP settings assigned aut this capability. Otherwise, you need for the appropriate IP settings.	omatically if your network supports to ask your network administrator
O Obtain an IP address automatic	aly
Use the following IP address: -	
IP address:	10 . 1080 . 1880 . 187
Subnet mask:	255.000.000
Default gateway:	10 . 1000 . 1000
Obtain DNS server address aut	onatically
Use the following DNS server as	ddresses:
Preferred DNS server:	192
Alternate DNS server:	10
Validate settings upon exit	Advanced
	age Cancel

- 12. On the Networking tab, select Close.
- 13. On the General tab, Close.
- 14. Close Networking and Sharing Center window.

The DNS server address is now reachable via the Ethernet connection.

Install VersaVirtual Licenses

This section provides information on how to install VVA licenses within 90 days of purchase.

IMPORTANT The VVA ships with a 90-day evaluation license. To continue uninterrupted service, Rockwell Automation recommends that you install a license before the end of the 90-day evaluation period.

To install a license after the VVA 90-day evaluation has expired, visit the <u>Rockwell Automation Knowledgebase</u> and search for "VersaVirtual."

Other application licenses, such as those for $\mathsf{Microsoft}^{\circledast},$ are not included with the VVA.

To install VVA licenses, perform the following steps.

1. Access the following VMware® website:

https://vcenter.ra.internal.

2. Under Getting Stated, select Launch vSphere Client.



Getting Started

LAUNCH VSPHERE CLIENT

Documentation

VMware vSphere Documentation Center

- Logon with the following credentials. Username: administrator@ra.internal Password: <system-specific password>
- 4. Select Login.



5. At the top of the home page, select Manage Your Licenses.



6. In the left pane, select Licenses, then select the Assets tab, and then verify the vCenter.ra.internal asset is selected.

😑 vSphere Client	Q Search in all e			C				٢	
Administration Access Control	< ~	Licenses Licenses Products Assets					GO TO CU	STOMER	CONNECT
Roles Global Permissions Licensing		VCENTER SERVER SYSTEMS HOSTS	VSAN CLUSTERS	SUPERVISORS	SOLUTIONS				
Licenses Solutions		Asset ▼ □ ≫ [©] vCenter.ra.internal	Usage 🐺 🖡	voluct valuation Mode	r License Evaluation License	Ŧ	License Exp	viration 2023	Ŧ

7. From the top, select the Hosts tab and verify host1.ra.internal is selected.

Lic	ens	es				0 TO CUSTOURS CO	
Licen:	ses NTEF	Products Assets	HOSTS VSAN CLUSTE	IRS SUPERVISORS SOLUTIONS	0	O TO COSTOMEN CO	
ASSI	GN LI		litane T	Product T	Lizanza T	License T	
-		B	t coule to be co		License	Expiration	
U	>>	witness.ra.inter	TCPUs (up to 32 core	vsphere 8 for virtual SAN witness for Embedded OE	License 1	S Never	
0	>>	host2.ra.internal	1 CPUs (up to 32 core	Evaluation Mode	Evaluation Licen	A 06/11/2023	
	>>	hostt.ra.internal	1 CPUs (up to 32 core	Evaluation Mode	Evaluation Licen	A 06/10/2023	
	>>	npu.ra.internal	1 CPUs (up to 32 core	Evaluation Mode	Evaluation Licen	A 06/04/20	

8. From the top, select vSAN Clusters and verify that Cluster is selected.

VCENTER SERVER SYSTEMS HOSTS VSAN CLUSTERS SUPERVISORS SOLUTIONS											
	VCENTER SERV	/ER SYST	EMS	HOSTS	VSAN CLU	STERS	SUPERVIS	ORS S	OLUTIONS		

9. From the top, select vCenter Server Systems.

Licenses					
Licenses Products Assets					GO TO CUSTOMER CONNECT
VCENTER SERVER SYSTEMS	HOSTS	VSAN CLUSTERS	SUPERVISORS	SOLUTIONS	
ASSIGN LICENSE					

10. In the left pane, select Licensing > Licenses.

😑 vSphere Cli	ent Q Search in all environments
Administration	
Access Control	
Roles	
Global Permissions	
Licensing	
Licenses	
Solutions	
Client Plugins	

11. In the right pane, under Licenses, select Add.

vSphere Client Q Search in all environments					
	<	Lice	nse	20	
Administration		LICC	1134		
Access Control	-	License	s	Products Assets	
Roles		ADD		SYNCHRONIZE LICENSES	
Global Permissions					
Licensing	~			T	
Licenses					
Solutions	~		>>	图 Evaluation License	
Client Plugins			>>	E License 1	



New Licenses	Enter license keys		×
1 Enter license keys	2 for many services on out this way want that		
2 Edit license names	License keys (one per line):		
3 Ready to complete			
		CANCEL	din KT

13. Rename each license key as needed and select Next.

New Licenses	Edit licens	e names	
	Product:	vCenter Server 8 Foundation	Capacity: 1 Instances
1 Enter license keys			
A 540 June 1999	License name:	VVA vSAN 8	
2 Edit license names	License key:	strated district distribution of the state	Expires: Never
3 Ready to complete	Product:	vSAN Standard	Capacity: 2 CPUs (up to 32 cores
	License name:	VVA vSphere 8	
	License key:	Land and share the state	Expires: Never
	Product:	vSphere 8 Standard	Capacity: 2 CPUs (up to 32 cores
	License name:	ASA	
	License key:	ALC: AND R. C. LEWIS MICH.	Expires: Never
	Product:	vSphere 7 Standard	Capacity: 1 CPUs (up to 32 cores
			CANCEL BACK NE

14. Verify the license key names. If any changes are needed, select Back.



- 15. After verifying the license names, select FINISH. The main License page is displayed.
- 16. In the left pane, select Licenses, then the Assets tab at the top.
- 17. Verify that the vCenter.ra.internal asset is selected and then select the Assign License link.

vSphere Client Q, Search in all environment	
	< Licenses
Administration	Licenses
Access Control	✓ Licenses Products Assets
Roles	
Global Permissions	VCENTER SERVER SYSTEMS HOSTS VSAN CLUS
Licensing	✓ ASSIGN LICENSE <
Ucenses	🗹 Asset 🔻 Usage
Solutions	👝 🚬 🛛 👋 🛛 🧭 vCenter.ra.internal 🛛 👘 1 Insta
Client Plugins	
vCenter Server Extensions	

18. On the Assign License page, verify that the new vCenter Foundation license key is available and selected and then select Ok.

	-							
ASTENU CICENSES NEW CICENSE	-							
License	۳	License Key	٣	Product	٣	Usage	Capacity	
>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>				-			ben.	
>> I I VVA vCenter 8				vCenter Server 8 Foundation		 1 Instances 	1 Instances	
								2 ite
I signment Validation for V	/VA v(Center 8						2 ite
I signment Validation for V Some features will become una	/VA v(Center 8						2 its
I signment Validation for V Some features will become una	/VA v(Center 8						2 its Deta
ignment Validation for V Some features will become una	/VA v(Center 8						2 ite Deta
ignment Validation for V Some features will become una	/VA v(Center 8						2 its Deta

The main Assets page is displayed.

- 19. Select HOSTS and verify that the following three assets are checked: host1.ra.internal
 - host2.ra.internal

npu.ra.internal

vSphere Client Q Search in all environme					
	<	Licor	2000		
Administration		LICEI	1303		
Access Control	~	Licenses	s Products Assets		
Roles		UCENT	TED SEDVED SVETEMS	NOSTS USAN CITIET	EDE
Global Permissions		- CENT	CR SERVER STOTEMS	NOSTS VSAN CLOSE	LAS
Licensing	~	ASSIGN			
Licenses		01	Asset T	Usage T	Proc
Solutions	~		> witness.ra.inter_	1 CPUs (up to 32 core	vSp
Client Plugins		2 3	> host2.ra.internal	1 CPUs (up to 32 core	Eva
vCenter Server Extensions	-	2	> hostl.ra.internal	1 CPUs (up to 32 core	Eva
Deployment			D nnu ra internal	1 CPUs (up to 32 core_	Eva
System Configuration	_		and the set of the state	the extent to be conen	

- 20. Select the Assign License link.
- 21. An Assign License dialog box is displayed to confirm license configuration on multiple objects. Select Yes.



22. The Assign License page appears.

Verify the new vSphere standard license key is available and selected and select Ok.

CAN THE LOCK	NUMBER OF STREET								
- Lourse			Linguist Nay		Product		these	Gapetty	Paste
0.01	matter License		-		-		-		
	Virtue Appliance - via	-	And Address (B. N. Street, South		VMaare vignere 8 Enterprise	8.	+ 3 (Put	3 (74)	0
0 83 100	erse 1		Notes and store in the latest	Chill.	University of prime & the Versue	5A.,	210%8	2.0%/4	0
-									
asignment	Validation for A	8 V9	tuel Appliance - vSphere		_		_		
asignment barre faate	Validation for A	8 1/2	tual Appliance - vSphere				_	_	Catal
asignment barre foats	I Validation for A	8 1/2	tual Appliance - vSphere				_	-	Onto

The Hosts page is displayed.

23. Select vSAN Clusters.

Verify that Cluster is selected and select the Assign License link.

vSphere Client Q Search in all environments		
	<	Liconsos
Normalistration		Licenses
Access Control	~	Licenses Products Assets
Roles		VCENTER SERVER SYSTEMS HOSTS VSAN CLUSTERS
Global Permissions		
Licensing	~	
Licenses		Asset T Usage T
Solutions	-	Solution 2 CPUs (up to 32 cores)
Client Plugins		

24. On the Assign License page, verify the new vSAN standard license key is available and selected and select Ok.



The Cluster page is displayed.

25. In the upper-left corner, select the menu navigation icon > Inventory.



26. Confirm that each asset that the license was applied to is now visible.



Repeat the prior steps to add any licenses not installed on the system.

Change Default Passwords

This section provides details on how to change the default passwords for each component.

Baseboard Management Controller

Each VVA has a Baseboard Management Controller (BMC) with two host management controllers. To change the system password on each BMC, perform the following steps.

- 1. Open a web browser and navigate to: https://192.168.249.11
- 2. Sign in with the following credentials. Username: root

Password: <system-specific password>

3. Select Log In.



4. On the Dashboard page, select iDRAC Settings > Users.



5. On the iDRAC Settings page, select Local Users, then root user, then Edit.

iDRAC9 En	terprise		
A Dashboard	■ System ∨ ■ Storage ∨	†‡† Configuration \backsim	${\ensuremath{\overline{\rm M}}}$ Maintenance ${\ensuremath{^{\checkmark}}}$
idrac s	Settings		
Overview	Connectivity Services Users	Settings	
✓ Local Users	S 🔶		
≔ Details	🕂 Add 💉 Edit 😑 Disable	🛅 Delete	
	User Name	State	User Role
2	root	Enabled	Administrator
3	sysadmin	Enabled	None

- 6. In the Edit User dialog box, enter the new password in the Password and Confirm Password fields.
- 7. When finished, select Save.

Edit User				0
User Configuration	SSH Key Configuratio	ns Smart Card Configuration		
User Account Set	ttings			î
ID		2		
User Name*		root		
Password*			_	
Confirm Passwor	d*		_	
User Privileges				
User Role		Administrator		
🛛 Login to iDRA	с	Configure iDRAC	Configure Users	
🛛 Clear Logs		Control and Configure System	Access Virtual Console	
🖬 Access Virtua	l Media	Test Alerts	Execute Debug Commands	
				• •
			Close	Save

- 8. When the success dialog box is displayed, select Ok.
- 9. Sign out of the BMC website and the new credentials.
- 10. Repeat steps 1...9 for the other host management controller.



) For step 1, use the URL address for the other host controller:) https://192.168.249.12

VMware vSphere

The VMware vSphere has one NPU, one Witness, and two cluster hosts. To change the password for each one, perform the following steps on each host.

- Open a web browser and navigate to: 1. https://192.168.249.13
- 2. Sign in with the following credentials.

Username: root

Password: <system-specific password>

3. Select Login.

User name	root	

4. Under the navigation pane, select Manage.

Bavigator	
▼ 🔄 Host	
Manage	
Monitor	
➡ ☐ Virtual Machines	2

5. On the Manage page, select the Security and Users tab.



6. Under the Acceptance Level Navigation Pane, select Users.

vmware esxi		root@	192.168.249.13 👻	Help + Q	Search
°⊟ Navigator	🔋 📋 npu.ra.internal - Manage				
▼ 🗒 Host	System Hardware	Licensing Packages S	Services Secu	urity & users	
Monitor	Acceptance level Authentication	🔧 Add user 🥒 Edit us	ser & Remove u	ser C Refresh	ch
Storage	1 Certificates	User Name	~ Descriptio	n	✓ Shell Access ✓
• 🧕 Networking	Roles	root	Administr	ator	true
	Lockdown mode	1 items _			
7. Select root and then Edit User.

vmware' esxi"			rool@192.168.249.1	3 🕶 Help 🕶 🝳	Search
Havigator	🗆 📋 npu.ra.internal - Manage				
🕶 📋 Host	System Hardware	Licensing Packages	Services	Security & users	
Manage					
Monitor	Acceptance level	🔧 Add user 🥖	Edit user 🔒 Remo	we user CRefresh	
S Virtual Machines	2 Authentication			Q Searc	h
🗉 Storage	1 Certificates	User Name	✓ Desc	ription	Shell Access ~
Q Networking	Users	root	Adm	nistrator	true
	Roles Lockdown mode				1 items

8. In the Edit User dialog box, enter the new password in the Password and Confirm Password fields.

User name	root
Description	Administrator
Password	
Confirm password	····· ·
Enable Shell Access	

- 9. When finished, select Save.
- 10. Sign out of the VMware ESXi^{TM} webpage and the new credentials.
- 11. Repeat steps 1...10 for each of the two cluster hosts and the Witness.



For step 1, use the following URL addresses for each ESX host: host1: https://192.168.249.14 host2: https://192.168.249.15 Witness: https://192.168.249.16

VMware vCenter

To change the password in VMware vCenter[®], perform the following steps.

- 1. Open a web browser and navigate to: https://192.168.249.18
- Sign in with the following credentials. Username: administrator@ra.internal Password: <system-specific password>
- 3. Select Login.

4. On the Home Page, select the menu navigation icon and then select Administration on the left side.

vsphere Client Q. Search in all e	Weonments Cluster : Астюня Summary Monitor Configure Permissions Hosts VMs	Datast	tores Networks Updates
	Cluster Details Total Processors: 32 Total Vection 2 Migrations: 2 Fault Domains: Primary, Secondary Total Total		Capacity and Usage Last updated at 9:28 PM CPU 0.89 GHz used 78.76 GB used 5torage 1,180.35 GB used 25.25 GB abocated storage 1,180.35 GB used
© NSX ⊕ VMware Aria Operations Configuration В Skyline Health Diagnostics	VSphere HA Protected	-	Cluster Services II Cluster Service health

5. Under the Administration Navigation pane, select Single Sign On > Users and Groups.

\equiv vSphere Client Q Search in all er						
	<	Lines and Course				
Administration		Users and Groups	5			
Access Control	~	Users Groups				
Roles						~
Global Permissions		Domain	localo	S		(1)
Licensing	~	Find			Q	
Licenses						
Solutions	~	ADD				
Client Plugins						
vCenter Server Extensions		Username	т	First Name	т	Last Name
Deployment	~	O vstatsuser		vstatsuser		
System Configuration		O hvc		VMware		vSphere HVC User
Customer Experience Improvement Program		O root		root		
Clast Castomer Experience improvement Program	_	○ vdtc		VMware		vSphere Distributed
Client Conliguration		O imagebuilder		imagebuilder		
Support	~	O updatemgr		Update		Manager User
Upload File to Service Request		O deploy		Deploy		User
Certificates	~	◯ vpostgres		vpostgres		
Certificate Management		◯ tftp		tftp		
Certificate Management		O vmdird		VM		Directory Service Us
Single Sign On	~	O netdumper		VMware		Netdumper User
Users and Groups		O systemd-resolve		systemd		Resolver
Configuration						

6. From the Domain dropdown menu, verify ra.internal is selected.

Administration	<	Use	ers and Group	S				
Access Control	~	User	s Groups					
Roles Global Permissions		Dom	ain	rainte	emal	_	O	
icensing	~	Find		locald	ernal IS	_		
Licenses								
Solutions	~	AD	DD					
Client Plugins								
vCenter Server Extensions			Username	Ŧ	First Name	т	Last Name	
aployment	~	0	Administrator		Administrator		ra.internal	
System Configuration	Č.	0	waiter-efdace8d-59 a918-1215b881595e	d3-4bba-	waiter		efdace8d-59d3-4bba-a918-1215b881595e	
		0	K/M					
Customer Experience Improvement Program								
Customer Experience Improvement Program Client Configuration		0	krbtgt/RA.INTERNA	L.				
Customer Experience Improvement Program Client Configuration	~	0	krbtgt/RAJNTERNA	L				

7. Under the ra.internal domain users, select the Administrator radio button.

- 8. Select Edit.
- 9. In the Edit User dialog box, enter the new password in the Password and Confirm Password fields.
- 10. When finished, select Save.

Edit User		×
Username	Administrator	
Password (i)	•••••	0
Confirm Password		<u></u>
First Name	Administrator	
Last Name	ra.internal	
Email	<u>.</u>	
Description		
		CANCEL

11. Sign out of the vCenter webpage, and the new credentials.

VMware vCenter Server Appliance

To change the password in VMware vCenter Server[®] Appliance^m, perform the following steps.

1. Open a web browser and navigate to https://vcenter.ra.internal:5480/login



4. In the left column, select Administration and then select Change in the top right.

www vCenter Server Management					
Summary	Password		-	t	OWNER
Monitor		 Should not be any of your previous five passwords. Must have at least six characters. 			
Access	Password requirements	3. Contain at least one upper case letter. 4. Contain at least one lower case letter.			
Networking		 Contain at least one number. Contain at least one non-alphanumeric character. 			
Frewal		7. No dictionary words are allowed.			
Time	Password expiration settings				6017
fervices	Password expires	Yes			
per trate	Password validity (days)	90			
Update	Email for expiration warning (j)	Unset			
Administration	Password expires on	Jun 25, 2023, 08:00:00 PM			
Sysieg					
Backup					

5. Enter the Old Password and New Password and then select Save.

Change Password	
Current password:	
New password: (j)	
Confirm password:	
	CANCEL

6. Sign out of the vCenter Appliance and then the new credentials.

Virtual Machines: NetSvcs

To change the password in the NetSvcs VM, perform the following steps.

- 1. Open a web browser and navigate to: https://vcenter.ra.internal
- Sign in with the following credentials. Username: administrator@ra.internal Password: <system-specific password>
- 3. Select Login.
- 4. On the Hosts and Cluster view, expand npu.ra. internal and select NetSvcs.
- 5. On the Summary tab, select Launch Web Console.
- 6. On the Launch Console dialog box, seSign inlect Ok.
- 7. In the NetSvcs Web Console, sign in as root with the system-specific password.

NetSvcs login: root Password:		
Last login:		
[root@NetSvcs ~]# _		

8. Enter the following command:

passwd

- 9. Press ENTER.
- 10. Enter the new password and confirm the new password.

```
[root@netsvcs ~]# passwd
Changing password for user root.
New password:
Retype new password:
passwd: all authentication tokens updated successfully.
```

- 11. Sign in as sysadmin and repeat steps 8 and 9.
- 12. To sign out, enter:

logout

13. Press ENTER.

Virtual Machines: Support-Probe

To change the password in the Support-Probe VM, perform the following steps.

- 1. Open a web browser and navigate to: https://192.168.249
- Sign in with the following credentials. Username: administrator@ra.internal Password: <system-specific password>
- 3. Select Login.
- 4. Select the left Hosts and Clusters icon, expand vCenter.ra.internal, then expand Cluster, then select Support-Probe.
- 5. On the right Summary tab, select Launch Web Console.



6. In the upper right corner of the console, select Send Ctrl+Alt+Delete.







8. Enter the current password, then enter the new password twice to confirm the change. When finished, select the arrow.

9. Sign out of Windows and sign on again to confirm the new credentials.

Virtual Machines: Support-Proxy

To change the password in the Support Proxy, perform the following steps.

- 1. Open a web browser and navigate to: https://vcenter.ra.internal
- Sign in with the following credentials. Username: administrator@ra.internal Password: <system-specific Password>
- 3. Select Log In.
- 4. On the Hosts and Cluster view, expand vcenter.ra.internal and select Support-Proxy.
- 5. On the Summary tab, select Launch Web Console.
- 6. On the Launch Console dialog box, select Ok.
- 7. In the Support-Proxy Web Console, sign in as root with the system-specific password.



8. Enter the following command:

passwd

9. Press ENTER.

10. Enter the new password and confirm the new password.

```
Changing password for user root.
New password:
Retype new password:
passwd: all authentication tokens updated successfully.
```

- 11. Sign in as sysadmin and repeat Step 5 and 6.
- 12. To sign out, enter:

logout

13. Press ENTER.

Configure Active Directory Authentication

You can use Active Directory user accounts to manage the VMware vCenter, by adding a Lightweight Directory Access Protocol (LDAP) identity source to your VVA. To implement this configuration, perform the following steps.

- Open a web browser and navigate to: https://vcenter.ra.internal
- Sign in with the following credentials.
 - Username: administrator@ra.internal

Password: <system-specific password>

- 3. Select Login.
- 4. In the upper-left corner of the vSphere Web Client, select the menu navigation icon and then select Administration.



- 5. In the Administration navigation view, scroll down and select Configuration.
- 6. Select the Identity Provider tab, then select Identity Sources > Add.

Administration Chent Mugins vCenter Server Extensions	<	Configuration	ounts	Login Messag			
Deployment	~	Embedded		1			
System Configuration							
Customer Experience Improvement Program		Identity Sources	A	D EDIT	SET AS D	EFAULT REMO	VE.
Client Configuration	1	Active Directory Domain					
Support	÷	Smart Card Authentication		Name	Ŧ	Server URL	٣
Upload File to Service Request			0	1.14		-	
Certificates	v .		0	De .			
Certificate Management							
Single Sign On	~						
Users and Groups							

7. In the Add Identity Source wizard, select the Active Directory over LDAP server.

Add Identity Source		×
Identity Source Type	Active Directory (Integrated Windows Authentication)	
	Active Directory (Integrated Windows Authentication)	1
	Active Directory over LDAP	I.
	Open LDAP Local operating system of SSO server the node to an Active Directory domain.	
	Integrated Windows Authentication will be depreciated in vSphere 7.0. Support for IWA continues to be available in vSphere 7.0 and will be phased out in a future release. Learn more	
Domain name * (j)	example.com	
	O Use machine account	
	O Use Service Principal Name (SPN)	

CANCEL	ADD

- 8. In the Domain name field, add the following.
 - For Name, enter the domain name (DN).
 - For Base DN for users, enter the DN.
 This string is formed by separating each part of the fully qualified domain name (FQDN) with 'DC='.

FQDN	DN
example.com	DC=example,DC=com
ra.rockwell.com	DC=ra,DC=rockwell,DC=com
csn.fabrikam.com	DC=CSN, DC=fabrikam, DC=COM

For example: If the FQDN is 'example.com', enter the DN of 'DC=example,DC=COM'.

- For the Base DN for groups, enter the preceding DN string.
- For Domain name, enter the FQDN.
- For Domain Alias, enter the NetBIOS alias of the domain.
 By default, the NetBIOS alias is the first portion of the FQDN.
 For example: If the FQDN is 'example.com', enter the NetBIOS alias of 'Example'.

FQDN	NetBIOS Alias	
example.com	Example	
ra.rockwell.com	RA	
csn.fabrikam.com	CSN	

- For Username, enter a domain user account that has administrative privileges in the domain.
- Enter the password for the administrative user.
- Select Add.
- 9. Select the newly created Identity Source, and then select Set as Default Domain.
- 10. A warning dialog box displays. Select Ok.



- 11. In the Administration navigation view, select Users and Groups (A).
- 12. On Users and Groups, select the Groups tab (B).
- 13. On Groups, select the vertical ellipse icon next to the Administrators group (C).

14. From the Administrators group dropdown menu, select Edit Group (D).

Administration	A THE REAL PROPERTY AND A	
Access Control	Users and Groups	
Roles Global Permissions	B Groups	
Licensing	ADD GROUP	
Licenses.		
- Solutions	Group Name	+ Description
Client Plug-Ins vCenter Server Extensions - Deployment System Configuration	SystemConfiguration Administrators	Well-known configuration users' group which contains all configuration users as members.
	: ActAsUsers	Act-As Users
Customer Experience Improvement.	2 DCAdmins	
- Support		
Upload File to Service Request	ComponentManager Administrators	Component Manager Administrators
- Single Sign On Users and Groups Configuration - Certificates	§ SyncUsers	Sync Users
	ExternalDPUsers	Well-known external IDP users' group, which registers external IDP users as guests.
Certificate Management	į CAAdmins	
	E SolutionUsers	Well-known solution users' group, which contains all solution users as members.
	1 Users	

- 15. In the Edit Group window:
 - From the Select a Domain dropdown menu, select the newly added Windows Active Directory (A).
 - In the search field, enter:
 - From the search finds (B), select the Domain Admins user group.

Group Name *	Administrators	
Description		
Add Members •	Select a domain dom	Operators
	a Adminis	trators
	😽 Allowed	RODC Password Replication G
	😤 Cloneab	la Domain Controllers
		Domain conducters
	8 Denied	RODC Password Replication Gr

- 16. Select Ok.
- 17. Select the username in the top right of the window (A).
- 18. From the dropdown menu, select Logout (B).
- 19. In the vSphere web client sign in, verify you can sign in with AD credentials.

Update the Hardware Compatibility List

You must keep your hardware compatibility list (HCL) updated, as it is critical to the stability of the VMware vSAN environment.

If the VVA displays an error that the VVA cannot automatically access the most current version, the HCL must be updated.



To update the HCL to the most current version, perform the following steps.

1. On the bottom of the vSAN HCL DB up-to-date alert page, select Troubleshoot.



2. In the bottom Recommendation to fix the issue section, select Alternative.



3. In the Recommendation description, select the vSAN HCL Database hyperlink.

C. 191112		
vSphere HA	~	· · · · · · · · · · · · · · · · · · ·
Summary		1 item
Heartbeat		Recommendation to fix the issue:
Configuration Issues	4	
Datastores under A	PD or P_	DEFAULT DETERMINE
Resource Allocation	~	Backup the existing HCL DB from /etc/vmware-vsan-health/vsarvcg.db in vCenter server and then upload the latest vSAN HCL DB downloaded from vSAN HCL Database y clicking this button.
CPU		
Memory		OPDATE FROM FILE

4. The web browser displays a database file similar to the following.



 In the webpage, right-click and save the page as a JSON file. Functionality can vary depending on the web browser.

C Save As					×
← → · ↑ 🖡	> This PC > Downloads	~	ō	,O Search Downloa	ds
Organize 👻 Ne	w folder			8	··· 🕜
This PC 3 D Objects Desktop Documents Downloads Music Pictures Videos Local Disk (Cs Network	• Name	Date modified	Туре	Size	
File name:	all				×
Save as type:	JSON File				×
∧ Hide Folders				Save	Cancel

- 6. Return to the vCenter.
- 7. At the bottom of the page, select Update from File.

8. Select the file that is downloaded in step 5 and then select Open.

> · • 🕈 🖊	> This PC >	Downloads >	~	Ö	, Search	Downloads		
Organize 👻 Nev	v folder					HE •		0
🔜 etc 🔜 tmp	↑ Name ✓ Toda	ay (1)	Date modified	Туре		Size		_
This PC 3D Objects	I al ✓ Last	I week (4)	5/11/2023 7:28 PM	JSON	Source File	13,745	KB	
- Deskton	×							

9. The HCL begins the update.

When the update is complete, a green *Healthy* logo is displayed.



Add a Virtual Machine

To add a VM, perform the following steps.

- 1. Open a web browser and navigate to: https://vcenter.ra.internal
- Sign in with the following credentials. Username: administrator@ra.internal Password: <system-specific password>
- 3. Select Login.
- 4. In the left pane, navigate to the Applications folder. Right-click on the Applications folder and then select New Virtual Machine.

📃 vSphere Client	Q Search in all environments	
+		<
	9	
 vCenter.ra.internal 		
V 🖹 Datacenter		
Applications		
> 🗋 Discovered vi	C Actions - Applications	
> 🗋 Management	🔂 New Virtual Machine	1
> 🗋 Templates	& Deploy OVF Template	1
> 🗅 vCLS	C ⁺ New Folder	
	🗅 Rename	
	Move To	
	Add Permission	
	Tags & Custom Attributes >	

5. Select Create a new VM and then select Next.



6. Name the VM, select the Application Folder, and then select Next.

N

lew Virtual Machine	Select a name and folder	>
1 Select a creation type	Virtual machine name: Mr. VM. Norma	
2 Select a name and folder	Select a location for the virtual machine.	
3 Select a compute resource	v 🎯 vCenter.ra.internal	
4 Select storage	Datacenter Datacenter Datacenter Datacenter	
5 Select compatibility	Discovered virtual machine Discovered virtual machine Discovered virtual machine	
6 Select a guest OS	> Templates CLS	
7 Customize hardware		
8 Ready to complete		1
		+
		ANCEL BACK NEXT

7. Select host1.ra.internal as the compute resource.

In the Compatibility section, verify that the compatibility check is successful and then select Next.

New Virtual Machine	Select a compute resource	×
	Select the destination compute resource for this operation	
1 Select a creation type	V Datacenter V CM Cluster	
2 Select a name and folder 3 Select a compute resource	 hostIrainternal bostIrainternal poruziaiternal 	
4 Select storage	> 🖏 witness.ra.internal	
5 Select compatibility		
6 Select a guest OS		
7 Customize hardware	Compatibility Compatibility checks succeeded.	
8 Ready to complete		
		+
	CANCEL BACK	NEXT

8. Select vSanDatastore for the data storage location and then select Next.

New Virtual Machine	Select storage			
L	Select the storage for the configura	ation and disk files ires Key Management Server)		
1 Select a creation type	VM Storage Policy Dat	tastore Default v		
2 Select a name and folder	Unsable Storage DRS for this virtua	ai machine		
3 Select a compute resource	Name	Y Storage Y Capacity Y	Provisioned Y Free	Type
4 Select storage	I I vsanDatastore	319 GB 3.49 TB	9.37 GB 309.63 GB 12.01 TB 2.34 TB	VMFS 6 VSAN
5 Select compatibility			items per page 10	 ✓ 2 items
6 Select a guest OS				

9. From the Compatible with dropdown menu, select the VMware ESXi software that is most compatible with the intended application.

In this example, the most current version of 8.0 is selected.

New Virtual Machine	Select compat	tibility	×
2	Select compatibility for	r this virtual machine depending on the hosts in your environment	
1 Select a creation type	The host or cluster su machine.	pports more than one VMware virtual machine version. Select a compatibility for t	the virtual
2 Select a name and folder	Compatible with:	ESXI 8.0 and later	
3 Select a compute resource	Virtual machines using	g hardware version 20 provide the best performance and latest features available	in ESXi 8.0.
4 Select storage			
5 Select compatibility			
6 Select a guest OS			
7 Customize haroware			
8 Ready to complete			1
			<u> </u>
		CANCEL BACK	NEXT

10. Select the operating system and version that the VM will be installed on, and then select Next.

New Virtual Machine	Select a guest OS	5	;	×
	Choose the guest OS that w	ill be installed on the virtual machine		
1 Select a creation type	Identifying the guest operat	ing system here allows the wizard to provide the appropriate	defaults for the operating	
2 Select a name and folder	system installation.			
3 Select a compute resource	Guest OS Family:	Windows V		
4 Select storage	Guest OS Version:	Microsoft Windows Server 2019 (64-bit)		
5 Select compatibility				
6 Select a guest OS	Compatibility: ESXi 8.0 and	later (VM version 20)		
7 Customize hardware				
8 Ready to complete			1	
		CANCE	L BACK NEXT	

11. Configure the fields so the new VM is set up appropriately for the intended application.



The default setting for adapter type is E1000E.

Rockwell Automation recommends using the VMXNET 3 adapter, which can be selected from the Adapter Type dropdown menu.

Customize hardwa	are		
> CPU	2 🗸 🛈		
> Memory	4	✓ <u>GB ∨</u>	
> New Hard disk *	90	GB v	1
> New SCSI controller	LSI Logic SAS		1
~ New Network	Management VM Netwo	ork	j.
Status	Connect At Power On		
Adapter Type	E1000E	<u></u>	
MAC Address	E1000 E1000E PCI Device passthrough	_Automatic ~	
> New CD/DVD Drive	VMXNET 3	Connect At Power On	
	Customize hardw	CUSTOMIZE hardware > CPU 2 ~ > Memory 4 > New Hard disk * 90 > New SCSI controller LSI Logic SAS V New Network Management VM Network Status Connect At Power On Adapter Type E1000E E1000E E1000E E1000E E1000E New CD/DVD Drive Westerdistrough	Customize hardware > CPU 2 ~ 0 > Memory 4 ~ GB ~ > New Hard disk* 90 GB ~ > New SCSI controller LSI Logic SAS • New Network Management VM Network ~ Status Connect At Power On Adapter Type EDOOE MAC Address PCI Device passt group > New CD/DVD Drive Management Connect At Power On

Review the configuration for the new VM.
 If any changes are needed, select Back.
 If the configuration is correct, select Finish.

New Virtual Machine	Ready to comple	te			×
	Click Finish to start creation	L			
1 Select a creation type	Virtual machine name	My VM. Name			
2 Select a name and folder	Folder Host	Applications host1.ra.internal			
3 Select a compute resource	Datastore Compatibility	vsanDatastore ESXI 8.0 and later (VM version 20)			
4 Select storage	Guest OS name	Microsoft Windows Server 2019 (64-bit)			
5 Select compatibility	Virtualization Based Security	Disabled			
6 Select a guest OS	Memory	2 4 GB			
More added apps 7 Customize hardware	NICs NIC 1 network	1 Management VM Network			
8 Ready to complete	NIC 1 type SCSI controller 1	VMXNET 3 LSI Logic SAS			
					+
			CANCEL	BACK	FINISH

13. The new VM is now visible under Actions Navigation pane > Applications.

[.]	ð)		2				
~ 8	vCent	er.ra.inter	nal				
~	🗈 Da	tacenter					
~		Applicatio	ons				
	ć	🗊 My VM	1 Name	-			
>		Discovere	ed virtual	machine			
>		Managem	nent				
>		Template	s				
>		VCLS					

14. On the Summary tab of the new VM, select the Launch Remote i icon, then select Download Remote Console.

Image: Second	My VM Na Summary Monit LAUNCH REMOT	me ▷ □ ♥ ֎ ֎ or Configure Permissions E CONSOLE 0
 Discovered virtual machine Management Templates vcLS 	PCI Devices	VMware Remote Console Use VMware Remote Console (VMRC) to connect to client devices and access advanced keyboard features. If you already have VMware Remote Console installed, it will start automatically when you click the Launch Remote Console button. If not, you can use the link below to download it. Download Remote Console

15. From the download page, select the correct OS version for your application.

	Information	
VMware Remote Console 12.0.3 for	Windows	
Ne size: 67.15 Mill		DOWNLOAD NOV
Ne type: zip	More added apps.	
lead More		
VMware Remote Console 12.0.3 for	Linux	000000 010 100
File size: 68.53 MB File type: bundle		DOWNLOAD NOT
lead More		

16. Sign in to VMware Customer Connect with your email address or customer number and password.



- 17. A zip file is downloaded.
- 18. Extract the zip file and launch the EXE (application) file.
- 19. The VMware Remote Console™ Install Wizard is displayed.
- 20. Accept the end user license agreement and install the software application.



22. Return to vCenter and select Launch Remote Console.

	🗇 My VM Name 🛛 Þ 🛛
	Summary Monitor Configure
 Ø vCenter.ra.internal 	
- 🗎 Datacenter	Guest OS II
Applications	
My VM Name	
Discovered virtual machine	
> 🗅 Management	
> 🗇 Templates	Powered Off
> D vCLS	T OR CLO ON
_	LAUNCH REMOTE CONSOLE
	LAUNCH WEB CONSOLE

23. If any certificate warnings are displayed, select Connect Anyway.



24. On the Boot Manager Screen, in the quick access toolbar, right-click the disk image and select Connect to Disk image file (iso).



- 25. In Windows File Explorer, navigate to the disk image and select Open.
- 26. On the Boot Manager screen, in the quick access toolbar, select the Send Ctrl+Alt+Delete icon.



27. To finish the installation, follow the prompts.

Prompts might vary based on the operating system you are using.

The new VM is now added to your network.

Import an OVA Template

To import an OVA template, perform the following steps.

- 1. Open a web browser and navigate to: https://vcenter.ra.internal
- Sign in with the following credentials. Username: administrator@ra.internal Password: <system-specific password>
- 3. Select Login.
- 4. On the Main Navigation pane, right-click on Clusters and select Deploy OVF Template...

i vSphere Clien	Actions - Cluster Add Hosts New Virtual Machine New Resource Pool
	😚 Deploy OVF Template
✓	Et New vApp
 Datacenter Cluster 	话 Import VMs
🖡 host1.	Storage >
🕃 Suppo	Host Profiles >
🔠 Suppo 🔂 vCent	Edit Default VM Compatibility
> 🖡 npu.ra.in > 👼 witness.r	⊗ Assign vSAN Cluster License

5. Select the Local file radio button, and then select Upload Files.

Deploy OVF Template	Select an OVF template Select an OVF template from remote URL or local file system	×
1 Select an OVF template	Select a template to deploy. Use multiple selection to select all the files associated with an OVF template (.ovf, .vmdk, etc.)	×
2 Select a name and folder	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. O URL	
3 Select a compute resource		
4 Review details	❀ Local file	
5 Select storage	VPLOAD FILES No files selected.	
6 Ready to complete		

6. In Windows File Explorer, navigate to the appropriate OVA file, select Open, and then select Next.



7. Name the VM something specific to its intended use, select the location for the VM, and then select Next.

Deploy OVF Template	Select a name a	and folder		×
1	Specify a unique name ar	nd target location		
1 Select an OVF template	Virtual machine name:	Mu OVA Markina		
2 Select a name and folder	virtual motime name.	my_ovA_mechnie		
12 Contraction of the second sec	Select a location for the	virtual machine.		
3 Select a compute resource	✓ Ø vCenter.ra.inte	rnal		
10000 100 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000	~ 🗄 Datacenter			
4 Review details	> 🗅 Applicati	ons		
5 Select storage	> Discover	ed virtual machine		
	> 🗆 Manager	nent		
6 Ready to complete	> D remplate	55		
	/ L Yous			
			CANCEL	BACK NEXT

8.	Select a compute resource, then select the VM.
	Be sure the compatibility check succeeded and then select Next.

Deploy OVF Template	Select a compute resource	×
	Select the destination compute resource for this operation	
1 Select an OVF template	B Datacenter	
2 Select a name and folder	 > □ npurainternal > □ npurainternal > □ witness.ra.internal 	
3 Select a compute resource		
4 Review details		
5 Select storage		
6 Ready to complete		
	Compatibility	
	Compatibility checks succeeded.	
		Ţ
	CANCEL BACK	NEXT

9. Review the details of the template and then select Next.

Deploy OVF Template	Review details	3
1 Select an OVF template	The OVF package contains advance	ed configuration options, which might pose a security risk. Review the advanced set to accept the advanced configuration options.
2 Select a name and folder	contraction options deport, under	теля со всегра настоя со нари внога орнола.
3 Select a compute resource	Publisher	No certificate present
A Device datable	Download size	2.4 GB
4 Review details	Size on disk	4.4 GB (thin provisioned) 60.0 GB (thick provisioned)
6 Select networks	Advanced configuration	nvram = ovf./fie/file2
7 Ready to complete		
		•

CANCEL BACK NEXT

10. Select the storage for the OVA file. In the Compatibility section, verify that the compatibility check is successful and then select Next.

D

eploy OVF Template	Select	ect stora	ge or the	configuration an	i disk filos						>
1 Select an OVF template	En Select	crypt this virtue virtual disk for	al mach	ine (Requires Key As defined in	Managemer	t Ser	ver) policy v				
2 Select a name and folder	VM St	orage Policy able Storage D	R5 for	Datastore this virtual machin	Default -)					
3 Select a compute resource		Name	Ŧ	Storage Y	Capacity	٣	Provisioned Y	Free	Ŧ	туре т	Placement
4 Review details	0	A hosti.BO	55		319 GB		9.37 GB	309.63 GB		VMFS 6	Local
C. Calant starses	0	host2.80	55	14 million (1997)	319 GB		1.95 GB	317.05 GB		VMFS 6	Local
5 Select storage	0	🗐 vsanDat	isto-		3.49 TB		12.19 TB	2.34 TB		VSAN	Local
6 Select networks									tems	per page 🛛 10 😓	3 items
7 Ready to complete											
	Comp	atibility									
	~ 0	ompatibility c	hecks	succeeded. 🔙		-					
											T
								CA	NCE	BACK	NEXT
											1.

11. From the Destination Network dropdown menu, select the desired port group and then select Next.

Deploy OVF Template	Select networks Select a destination network for each so	burce network.		×
1 Select an OVF template		1 - maintenant		
2 Select a name and folder	VM Network	VM Network		_
3 Select a compute resource				1 item
4 Review details	IP Allocation Settings			
5 Select storage	IP allocation:	Static - Manual		
6 Select networks 7. Ready to complete				
			CANCEL	BACK NEXT

12. Verify the configuration.

If any changes are needed, select Back.

If the configuration looks correct, select Finish.



13. Verify OVF template deployment on the Cluster Recent Tasks panel.

Task Name	Target	Ŧ	Status	т
Deploy OVF template	[]] Cluste	er		51% 🛞
Import OVF package	[]] Cluste	er		53% 🚫

Task Name	Targ	jet	Ŧ	Status	т
Deploy OVF template	(3)	Cluster		⊘ Completed	
Import OVF package	[]]	Cluster		⊘ Completed	

Notes:

System Shut down and Startup

This section provides information on how to shut down and startup the VVA.

Shut down vSAN Cluster

To shut down the vSAN cluster, perform the following steps.

1. To to import the necessary module, open Windows[®] PowerShell and enter: Install-Module vmware.powercli

PowerS PowerS PS C:\	werShell7(x66) Shell 7.3.4 (Users\Sysadmin> Install-Module vmware.powercli_	÷	:	< ^
2. 3.	Press ENTER. To connect to the VMware vCenter en Connect-ViServer -Ser	nter: rver	'vcenter.ra.internal'	
Pow PS	PowerShell7(x64) erShell 7.3.4 C:\Users\Sysadmin> Connect-V	'iServ	er -server 'vcenter.ra.internal	
4. 5. 6.	Press ENTER. Sign in with the following credentials Username: administrator@ra.intern Password: <system-specific passwo<br="">Press ENTER.</system-specific>	s. al rd>		
PS Spe Ple Use Pas	C:\Users\Sysadmin> Connect-V ecify Credential ease specify server credentia er: administrator@ra.internal ssword for user administrator	/iServ al @ra.i	er -server 'vcenter.ra.internal nternal: ***********	•
^o Nan ^o vce	ne enter.ra.internal	Port 443	User RA.INTERNAL\Administrator	

7. To stop the vSAN cluster, enter:

```
Stop-VsanCluster -Cluster (Get-Cluster) -InfraVMs
(Get-VM 'vCenter', 'Support-Proxy', 'Support-
Probe') -PowerOffReason 'Changing IP Address
Scheme'
```

8. Press ENTER.



The power button and power status indicators on each server module turn off when the cluster shuts down.

- 9. To restart each server module, press the power button on each.
- 10. Monitor the VMware vCenter webpage until it becomes available: https://vcenter.ra.internal

Shut down NPU

To shut down the NPU, perform the following steps.

- 1. Open a web browser and navigate to: https://192.168.249.13
- Sign in with the following credentials.
 Username: root

Password: <system-specific password>

3. Select Log in.



4. On the left side of the Navigator pane, select Host, and then select Shut Down on the center of the page.

💾 Navigator 🖂	📋 npu.ra.internal
* 📱 Host	
Manage	🦉 Manage with vCenter Server 🎲 Create/Register VM 🛅 Shut down 🕼 Reboot 🦿 Refresh 👰 Action
Monitor	npu.ra.internal
Storage	Version: 7.0 Update 3 State: Normal (connected to vCenter Server at 10.219.250.119) Uptime: 12.01 days
Networking	

5. On the Shut down warning dialog box, select Shut Down.

L Shut down - npu.ra.internal



The system shuts down.

Restart NPU

To restart the NPU, perform the following steps.

- 1. Open a web browser and navigate to: https//192.168.249.14
- Sign in with the following credentials.
 Username: root
 Password: <system-specific password>
- 3. Select Log In.



4. From the System dropdown menu, select Overview.

iDRAC9 Ente	erprise		
🎓 Dashboard	🗧 System 🗠 🛉	torage 🗸	†‡† Configuration $\!$
Dashboa	Overview 🔶 Details		
① Graceful Shu	Inventory Performance	n 🗕 More	Actions 👻
E Health Infor	Host OS mation		
5. Select Witness Ser	ver.		
iDRAC9 Enterprise			
Dashboard System System Overview Details Investore	Y Storage → 14 ntory Performance	Configuration V 🛛 🖾 Maintenar	nce 🌱 🧕 iDRAC Settings 🗠
Summary	Batteries	Cooling	CPU
Voltages	PCIe Slots	Witness Server	

- 6. In Power Control Settings, select the Action dropdown menu > Power On.
- 7. Select Apply.

Restart vSAN Cluster

To restart the vSAN cluster, perform the following steps.

- 1. Press the power button on both server modules.
- 2. Open a web browser and monitor the VMware vCenter webpage until it becomes available:

https://vcenter.ra.internal

- 3. Once available, sign in into the VMware vCenter.
- 4. In the Navigator Pane, right-click the Cluster.
- 5. Navigate to vSAN and select Restart Cluster.
- 6. Select Ok.

Change the IP Address Schemes

This chapter provides information on how to modify the VVA network scheme for the following items:

- IP address
- subnet mask
- default gateway
- VLAN configurations, where applicable.

To modify the VVA network scheme, perform the procedures that are contained in this chapter.

Shut Down the vSAN Cluster

To shut down the vSAN Cluster, perform the following steps.

1. To import the necessary module, open Windows PowerShell from the Start menu and enter:

```
Install-Module vmware.powercli Press ENTER.
```

PowerShell 7 (x64)	-	×
owerShell 7.3.4 5 C:\Users\Sysadmin> Install-Module vmware.powercli		î

2. To connect to the VMware vCenter, enter:

```
Connect-ViServer -Server 'vcenter.ra.internal' Press ENTER.
```

PowerShell 7 (x64)

2



3. Enter the following credentials.

```
Username: administrator@ra.internal
```

```
Password: <system-specific password>
```

4. Press ENTER.

PS C:\Users\Sysadmin> Con	nect-ViServ	er -server	'vcenter.ra.internal'
Specify Credential Please specify server crea User: administrator@ra.in Password for user administ	dential ternal trator@ra.i	nternal: **	******
Name	Port	User	
vcenter.ra.internal	443	RA.INTERN4	AL\Administrator

5. To stop the vSAN cluster, enter:

```
Stop-VsanCluster -Cluster (Get-Cluster) -InfraVMs
(Get-VM 'vCenter', 'Support-Proxy', 'Support-
Probe') -PowerOffReason 'Changing IP Address
Scheme'
Press ENTER.
```

PS C:\Users\Sysadmin> Stop-VsanCluster -Cluster be') -PowerOffReason 'Changing IP Address Schem	(Get-Cluster) e'	-InfraVMs (Get-VM	'vCenter', 'Support-	Proxy', 'Support-Pro
Name	State	% Complete	Start Time	Finish Time
Perform cluster power off act…	Running	0	10:10:55 AM	

- 6. When the cluster has stopped, the power button and power status indicators on each server module turn off.
- 7. To restore power to each module, press the power button on each unit.
- 8. Open a web browser and monitor the VMware vCenter webpage until the cluster becomes available:

https://vcenter.ra.internal



If you have not added ra.internal to your host file, you can monitor the VMware vCenter webpage with the following IP address: https://192.168.249.18 For information on updating your host file, see <u>Add Host Names to Local</u>

Host File on page 17.

Change the IPv4 Settings of the Witness Host

Because the Witness host is nested, the DCUI console can be accessed through the VMware ESXi web interface. To access the DCUI console, perform the following steps.

- Open a web browser and navigate to the IP address of the NPU host: https://192.168.249.13
- In the left side navigation of the NPU host, navigate to Virtual Machines and select Witness.
- 3. Select the command window thumbnail, which opens the Witness browser console

Tavigator	D npu.ra.internal - Virtual Machines		
 Host Manage Monitor 	Create / Register VM Console Power on Shut down Virtual machine	Suspend C ⁴ Refresh	Actions
Juitual Machines	2 A NetSvcs	Normal	8.94 GB
Storage	1 🕼 🕼 Witness	A Warning	388.06 GB
Q Networking	Quick filters		
-	Munice 2012 a. a. province busines build persister Munice 2012 a. a. province busines build persister Munice 1001 a. a. formation business Munice 2012 a. a. province 2012 a. a. province 2012 a. a. province 2012 a. a. province 2012 a. province	VMware ESXi 6 Yès 2 15 90 GB witness.ra.interr	.5 or later nal

- 4. When the console displays, press F2.
- 5. Sign in with the following credentials. Username: root

Password: <system-specific password>

6. Press ENTER.

Authentication Required	
Enter an authorized login witness.ra.internal.	name and password for
Configured Keyboard (US D Login Name: [root Password: [****	efault)
	<enter> OK <esc> Cancel</esc></enter>

7. In the VMware ESXi DCUI, use the arrow keys to navigate to Configure Management Network and press ENTER.

System Customization Configure Password Configure Lockdown Mode Configure Management Network Restart Management Network Test Management Network Test Management Network Network Restore Options Configure Keyboard Troubleshooting Options View System Logs View Support Information Reset System Configuration 8. Select IPv4 Configuration, and press ENTER.

Network Adapters VLAN (optional) IPv4 Configuration IPv6 Configuration DNS Configuration Custom DNS Suffixes

Configure Management Network

<Up/Down> Select

9. Use the UP and DOWN arrow keys to navigate the IPv4 setting, and input the new configuration.

IPv4 Configuration			
This host can obtain network settings automatical includes a DHCP server. If it does not, the follo specified:	lly if your n owing setting	network gs must be	
 () Disable IPv4 configuration for management network () Use dynamic IPv4 address and network configuration (o) Set static IPv4 address and network configuration: 			
IPv4 Address	E I	1	
Subnet Mask	[
Default Gateway	[1	
«Up/Down» Select «Space» Mark Selected	<enter> OK</enter>	<esc> Cancel</esc>	

- 10. When configuration is complete, press ENTER.
- 11. To exit, press the ESC key, and Y to confirm the changes.

Reset IP Address of NPU

To change the IP address of the NPU, perform the following steps.

- 1. Open a web browser and navigate to the IP address of the NPU host: https://192.168.249.13
- 2. Enter the following credentials. Username: root

Password: <system-specific password>
3. Select Log In.

vm	ware	D _*	
User name	root		
Password		Ô	
		Log in	

- 4. On the left side of the navigation pane, select Networking.
- 5. From the Networking submenu, select vmk0.
- 6. On the top right, select the VMkernel NICs tab.

- Host		Port groups	Virtual swite	hes Physical NICs	VMkernel NICs
Monitor		🞦 Add VMke	rnel NIC 🥖 E	dit settings CRefre	sh 🐉 Actions 🕇
Gi Virtual Machines	2	Name	~	Portgroup	
▶ Storage	1	💌 vmk0 🚽	-	Management Netwo	rk
🕞 🔮 Networking	1	_			
Management VM Netw More networks					

7. Select Edit settings.

T Navigator	🗇 📷 vmk0	
 Host Manage Monitor 	Edit settings C Refresh vmk0	🏠 Actions
🕶 🔂 Virtual Machines 🛛	2 Virtual switch: Port group:	Switch0
 MetSvcs 	10.14	
Monitor		
More VMs	▼ TCP/IP configuration	
Storage	TCP/IP stack	BE defaultTcpipStack
E Storage ★ Q Networking	1 TCP/IP stack	defaultTcpipStack
Storage ✓ O Networking ∞ vmk0	TCP/IP stack IPv4 DHCP	
Storage Storage Networking Munchara Management VM Networking Management VM Networking	TCP/IP stack IPv4 DHCP IPv4 address	≣≣ defaultTcpipStack Disabled

Fort group	Management Network
MTU	1500
IP version	IPv4 and IPv6 ~
r IPv4 settings	
Configuration	O DHCP Static
Address	
Subnet mask	· · · · · · · · · · · · · · · · · · ·
Pv6 settings	Click to expand
TCP/IP stack	Default TCP/IP stack
Services	VMotion Provisioning Fault tolerance logging
	Management Replication NFC replication
	1

8. On the settings screen, edit the Address and Subnet Mask as needed.

9. When finished, select Save.

Update Access and Trunk Port with New VLAN Tag (Optional)

If the default VLAN of 3249 must be changed, the access ports on the switch must be tagged with the new VLAN ID and the trunk ports must also be configured to allow the new VLAN ID.

Reset iDRAC IP Addresses

To reset the iDRAC IP addresses, perform the following steps.

- 1. Open a web browser and navigate to: https://192.168.249.11
- 2. Sign in with the following credentials. Username: root

Password: <system-specific password>

3. Select Log In.

← C ▲ Not secure Heter/1792.166.249.11./restgai/start.htm	login		 16 12	0.9	e - (b
0					
	Integrated Dell Remote Ac	ccess Controller 9 © troopies			
		ed 🔍			
	root				
	Domains				
	The DFAC *				

4. From the dropdown menu, select iDRAC Settings, then Connectivity.

000

~

iDRAC9 Enterprise							
Deshboard Syst Dashboard Graceful Shutdown	tem∨ BSI	orage∨ tit Configu • More Actions •	ration 🗸 📅 Mair	tenance 🗸	Q. iDRAC Settings ✓ Overview Connectivity Services Users Settings	-	
	SYSTEM	IS HEALTHY		Power State Model	*	ON PowerEdge XR4520c	
System Health	Details	Storage Health	Detaita	Operating 3 Operating 3 Service Tag BIOS Versio DRAC Firm IP Address DRAC MAC	lystem lystem Version m ware Version : Address		
				License		Enterprise Edit	

5. From the dropdown menu, select Network, then select IPv4 Settings.

Network Settings	
iDRAC Auto Discovery	
Common Settings	
Auto Config	
IPv4 Settings	
Enabled IPv4	Enabled ¥
DHCP	Disabled 🛩
Static IP Address*	
Static Gateway*	
Static Subnet Mask*	
Use DHCP to Obtain DNS Server Addresses	Disabled 🛩
Static Preferred DNS Server	
Static Alternate DNS Server	

- 6. Configure each text field as needed, then select Apply.
- 7. On the Success window, select Ok.



8. To reset the iDRAC IP of another host, repeat the prior steps 1...7.

Update NetSvcs IP

To modify the IP address of the NetSvcs VM, perform the following steps.

- 1. Open a web browser and navigate to the new IP address of the NPU host.
- 2. Sign in with the following credentials. Username: root

Password: <system-specific password>

3. Select Log In.



- 4. From the Inventory Navigator on the left, select Virtual Machines.
- 5. Select NetSvcs, then select the command thumbnail window, which opens the NetSvcs DCUI.

Navigator	🗇 🔂 npu.ra.internal - Virtual Machines
Host Manage	😚 Create / Register VM 🦉 Console 🕨 Power on 🔳 Shut down 💶 Suspend 🧭 Refresh 🏠 Actions
Monitor	Virtual machine Virtual machine Virtual machine Virtual machine
🎒 Virtual Machines 🛛 🤞	🔁 🖸 . 👸 NetSvcs 🚽 🖉 🖉 Normal 8.94 GB
Storage	1 . 🚯 Witness 📀 Normal 388.06 GB
2 Networking	1 Quick filters
-	Goett USS Hed hat Emergine Linux 6 (64-64) Compatibility Vilvare Tools Yes and and the second

 Sign in to the NetSvcs VM with the following credentials. Username: sysadmin Password: <system-specific password> 7. Press ENTER.



8. Bring down the Ethernet interface with the following command:

```
nmcli connection down ens192
```

```
[sysadmin@NetSvcs ~]$ nmcli connection down ens192
Connection 'ens192' successfully deactivated (D-Bus active path: /org/freedesktop/NetworkManager/ActiveConnection/1)
[sysadmin@NetSvcs ~]$ _
```

9. Modify the interface with the correct IP Address, CIDR/subnet mask, and gateway with the following command:

```
nmcli connection modify ens192 ipv4.addresses
xx.xx.xx.xx/25 ipv4.gateway xx.xx.xx.xx
```

sysadmin@NetSvcs ~1\$ nmcli connection modify ens192 ipv4.addresses _______ipv4.gateway ______ipv4.gateway

10. Activate the ens192 interface with the following command:

nmcli connection up ens192

```
sysadmin@NetSvcs ~]$ nmcli connection up ens192
onnection successfully activated (D-Bus active path: /org/freedesktop/NetworkManager/ActiveConnection/2
```

11. Verify that the IP address changed with the following command:

ip a

Ŀ	sysadmin@NetSvcs ~15 ip a
1	: lo: <loopback,up,lower_up> mtu 65536 qdisc noqueue state UNKNOWN group default glen 1000</loopback,up,lower_up>
	link/loopback 00:00:00:00:00 brd 00:00:00:00:00
	inet 127.0.0.1/8 scope host lo
	valid_lft forever preferred_lft forever
Z	: ens192: <broadcast,multicast,up,lower_up> mtu 1500 qdisc mq state UP group default qlen 1000</broadcast,multicast,up,lower_up>
	link/ether 00:0c:29:a9:d9:d3 brd ff:ff:ff:ff:ff:ff
	inet '25 brd ' scope global noprefixroute ens192
	valid_lft forever preferred_lft forever

12. Test the connection to the newly assigned gateway with ping:

ping <new gateway IP address>

[sysadmin@NetSvcs ~]\$ ping	
PING	56(84) bytes of data.
64 bytes from	: icmp_seq=1 ttl=254 time=1.20 ms
64 bytes from	icmp_seq=2 ttl=254 time=1.24 ms
64 bytes from	icmp_seq=3 ttl=254 time=1.21 ms
64 bytes from	icmp_seq=4 ttl=254 time=1.15 ms
64 bytes from	icmp_seq=5 ttl=254 time=1.24 ms
64 bytes from	icmp_seq=6 ttl=254 time=2.09 ms
64 bytes from	icmp_seq=7 ttl=254 time=1.16 ms
64 bytes from	icmp_seq=8 ttl=254 time=1.15 ms
64 bytes from	icmp_seq=9 ttl=254 time=1.16 ms
64 bytes from	icmp_seq=10 ttl=254 time=1.08 ms
64 bytes from	icmp_seq=11 ttl=254 time=1.09 ms
^c	
ping stati	istics
11 packets transmitted, 11	received, 0% packet loss, time 10016ms
rtt min/avg/max/mdev = 1.07	79/1.251/2.091/0.271 ms
F	

[sysadmin@NetSvcs ~]\$

Update NetSvcs DNS Settings

To update the NetSvcs DNS settings, perform the following steps.

- If you are not already signed into the NetSvcs VM, login as detailed in steps 1...5 of <u>Update NetSvcs IP on page 76</u>.
- 2. Once logged in, edit the DNS configuration file with the following command:

```
sudo vim /etc/unbound/local.d/ra.conf
```

3. Press ENTER.



- 4. Enter insertion mode by typing "i."
- 5. Use the arrow keys to navigate and make any needed changes.
- 6. To exit insertion mode, press ESC.
- 7. To save and exit the file, enter:

wq

and press ENTER.

8. Enter the following command:

```
sudo systemctl restart unbound and press ENTER.
```

[sysadmin@NetSvcs ~1\$ sudo systemct1 restart unbound [sysadmin@NetSvcs ~1\$ _

9. To confirm the unbound configuration status, enter: systemctl status unbound

and press ENTER.

```
10. Look for:
Active (running)
and
status=0/SUCCESS
systemin@NetSvcs "15 systemct1 status unbound
• unbound service - Unbound recursive Domain Name Server
Loaded : Loaded (usr/libraystem/unbound.service; enabled; vendor preset: disabled)
Active: active (running) since Fri 2823-85-12 13:23:85 EBT: 14min ago
Process: 1274398 ExecStartPre-bin/vanbound.service; enabled; vendor preset: disabled)
Active: active (running) since Fri 2823-85-12 13:23:85 EBT: 14min ago
Process: 1274398 ExecStartPre-bin/vanbound-service (code=exited, status=8/SUCCESS)
Tarks: 4 (limit: 11341)
Hearoy: 19.0M
CGroup: Zypstem.slice/unbound.service
L_1274583 /usr/sbin/unbound -d
Incertof2040000
```



If this command returns any errors, check for any misspellings or errors in the configuration.

If neither are found, return to step 1 and repeat the procedure.

11. To exit the unbound configuration status command, enter:

```
q
12. To sign out, enter:
logout
```

and press ENTER.

Change VMware vCenter IP Address with the VMware vCenter Server Appliance

To change the IP address of VMware vCenter, perform the following steps.

- 1. Open a web browser and navigate to the VMware vCenter Server Appliance: https://192.169.249.18:5480
- Sign in with the following credentials. Username: administrator@ra.internal Password: <system-specific password>
- 3. Select Login.
- 4. On the left side of the Appliance Manager, select Networking.

w vCenter Server Management	Fri 05-12-2023 07:30 PM UTC		
Summary	æ,	Hostname: Product: Version:	vCenter.ra.internal VMware vCenter Serve 8.0.1.00000
Access		Build number: Uptime:	21560480 4 hours 51 minutes
Networking	Health Status		
Firewall	Overall Health	⊘ Good (Last checked №	tay 12, 2023, 03:30:36 PM)
Time	CPU	⊘ Good	
Services	Memory	⊘ Good	
	Database	⊘ Good	
update	Storage	⊘ Good	
Syslog	Swap	⊘ Good	
Backup			

5. On the top left, select Edit.

vCenter Server Management				
Summary	Network Settings			
Mustiker	Nutraite	vCenter rs.internal		
	DNS barvers			
Access	V NCO			
Networking	Status	Lip.		
freed	MARC Address			
	Pvt Address			
Time	Pv4 Default Gateway			
Services				
(Tendester	Proxy Settings			ADIT .
opone	blods and IP addresses excluded from procep	Note		
Syslog	F10	Deactivated		
Beckup	witten	Deschouted		
	attip.	Deachuried		

6. Select NIC 0 (Management Network) and then on the bottom right, select Next.

Edit Network Settings	Sele	ect Network A	dap	oter				×
1 Select Network Adapter	Select DNS s	t a network adapter th settings of your vCent	nat yo er se	ou would like to edit. Se rver.	lect NIC 0 if you wou	ld like	to edit the hostname	and/or
2 Edit settings		Physical Network Adapter	Ψ	IPV4/IPV6 Address	IPV4/IPV6 Default Gateway	τ	MAC Address T	Status
3 Ready to complete	•	NIC 0 (Management Network)		192.168.249.18	192.168.249.1		00:0c:29:bf:4f:3b	up
							CANCEL	NEXT

7. Select the Hostname and DNS dropdown menu.



8. Edit the DNS server settings text field as needed.

9. Select the NIC 0 dropdown menu.

Edit Network Settings	Edit settings	
1 Select Network Adapter	DNS Settings	Enter DNS settings manually
2 Edit settings	X NIC 0	Status : Up
3 SSO credentials		MAC Address: 00:0C:29:BF:4F:3B
4 Ready to complete		Activated Obtain IPv4 settings automatically
	IPv4	Enter IPv4 settings manually IPv4 address *
	-	IPv4 address prefix *
		IPv4 gateway * 🚯
	IPv6	Deactivated
		CANCEL BACK NEX

- 10. Edit thelPv4 text fields as needed. When finished, select Next.
- In the SSO credentials settings, enter the following credentials. Username: administrator@ra.internal Password: <system-specific password>
- 12. Select Next.

Edit Network Settings	SSO crede	entials			×
Select Network Adapter Edit settings SSO credentials	Enter the SSO a Username * Password *	dministrator credentials for vCenter sen administrator@ra.internal			
4 Ready to complete					
			CANCEL	ВАСК	NEXT

13. To save the updated IP address settings, select the Acknowledgment box and then select Finish.



The VMware vCenter saves the updated settings.

Apply new VLAN Tag to Port Groups (Optional)

If the default VLAN of 3249 must be changed, each VMware ESXi host must be updated with the VLAN ID of each host. To do so, perform the following steps.

- 1. Open a web browser and navigate to: https://192.168.249.14
- 2. Sign in with the following credentials.

Username: root

Password: <system-specific password>

- 3. Select Login.
- 4. On the left side, select Networking and then select Management VM Network.

vm ESXi Host Client		
ि Mavigator ≪	👲 host1.ra.internal - Networking	
∨ 🖡 Host	Port groups Virtual switches Physical NICs	VMkernel NICs
Manage		
Monitor	+ [™] Add port group	C Refresh
>・日 Virtual Machines 4	Name	~
✓ ☐ vCenter	Ø VM Network	
Monitor	Management VM Network	
More VMs	S vMotion Network	
Storage 2	Management Network	
✓ ② Networking 2	SAN Network	
✓ Ø Management VM Netw		
Monitor		

5. Select Edit settings.



6. Populate the VLAN ID with the appropriate VLAN ID and then select Save.

Edit port group - Ma	nagement VM Network	
Name	Management VM Network	
VLAN ID		
Virtual switch	vSwitch0 ~	
> Security	Click to expand	
> NIC teaming	Click to expand	
> Traffic shaping	Click to expand	
		CANCEL

- 7. Repeat Steps 1...4 for additional hosts.
- 8. Open a new web browser tab or window and sign in to the Witness host: https://witness.ra.internal
- 9. Sign in with the following credentials. Username: root

Password: <system-specific password>

- 10. From the Navigator, select Networking.
- 11. Select the VMkernel NICs tab.
- 12. Select vmk1.

~	👰 witness.ra.internal - Ne	etworking	
	Port groups Virtual swite	ches Physical NICs VMkernel NICs TCP/IP stacks	Firewall rules
	+ Q. Add VMkernel NI	C 🖋 Edit settings C Refresh O Action	15
0	Name	~ Portgroup ~	TCP/IP stack
0	😇 vmk0	S Management Network	Se Default TCP/IP stac
1	'o, vmk1	SecondaryPg	Se Default TCP/IP stac
	«	vitness.ra.internal - Ne Port groups Virtual swit ⁺ 'Q, Add VMkernel NI Name Q Vink0 'Q, vmk0 'Q, vmk1 'Q, vmk1	Image: SecondaryPg Image: SecondaryPg

13. Select Edit settings.



14. Input the appropriate address and subnet mask.

Edit settings - vmk1	
Port group	secondaryPg Y
MTU	1500
IP version	IPv4 and IPv6 Y
∨IPv4 settings	
Configuration	O DHCP • Static
Address	
Subnet mask	
> IPv6 settings	Click to expand
TCP/IP stack	Default TCP/IP stack
Services	vMotion Provisioning Fault tolerance logging Management Replication NFC replication
	•
	CANCEL

15. When finished, select Save.

Update IP Addresses on vSAN Hosts

To update the IP addresses on the vSAN hosts, perform the following steps.

- 1. Open a web browser and navigate to the iDRAC on the host1: https://192.168.249.14
- 2. Sign in with the following credentials. Username: root

Password: <system-specific password>

3. Select Log In.

Type the User Name and Password and click Log In.	roller 9
Type the User Name and Password and click Log In.	
Type the User Name and Password and click Log In.	
Username: Password: 🕕	
root	
Domain:	
This iDRAC 🗸	
Domain:	

4. Select the Virtual Console thumbnail.

ntern Health I Healthy	araitmi	anexantr	 Model	Description (D) (D)		and Barlinson and a	
		Obrige Health	Net Name Operating System Capaciting System Version Service Tag BOT Henson Office Entropy of Systems Office Entropy of Systems Office Entropy of Systems Office Capacity of Systems Laternet	North Antonia Waren Ellin		All Participana International Adda, 8 All the third particular Adda, 4 Completed Adda, 44 Configurational Adda, 44 Co	
Recent Logs					owe all	Ch Virtual Console	6 ter
erty Description	n.			Date and Time 🗸			
Logicharad	4.			mail Dec 31 1969 21:01:51			

5. Click inside the console and press the F2 key, which displays an authentication dialog box.



- 6. Sign in with the root and system-specific password, and then press ENTER.
- 7. In the VMware ESXi Direct Console User Interface (DCUI), navigate to Configure Management Network and press ENTER.

System Customization	Configure Management Network
Configure Password Configure Lockdown Mode	Hostnane: host1
Configure Management Network Restart Management Network	IPv4 Address:
lest Management Network Network Restore Options	IPv6 Addresses:
Configure Keyboard Troubleshooting Options	To view or modify this host's management network settings i detail evens (Foter)
/iew System Logs	dourt, prost condit.
View Support Information	
Reset System Configuration	

8. Select VLAN (Optional) and press ENTER.



9. Replace VLAN ID 3249 with the desired VLAN ID and press ENTER.

VLAN (optional)	
If you are unsure how to configure or use a VLAN, it leave this option unset.	is safe to
VLAN ID (1-4094, or 4095 to access all VLANs):	[]
(Enter> OK	<esc> Cancel</esc>

10. Select IPv4 Configuration and press ENTER.



- 11. Change the IPv4 settings to the desired configuration.
- 12. When finished, press ENTER.



13. Use the down arrow key to navigate to the DNS Configuration field and press ENTER.

Configure Management Network	DNS Configuration
Network Adopters VLAN (optional) IPv4 Configuration IPv6 Configuration DNS Configuration Custon DNS Suffixes	Manual Primaru DNS Server: Alternate DNS Server: Not set Hostname host1 If this host is configured using DHCP, DHS server addresses and other DMS parameters can be obtained automatically. If not, ask your network administrator for the appropriate settings.

- 14. Enter the new IP address of the NetSvcs (DNS).
- 15. When finished, press ENTER.

DNS Configuration		
This host can only obtai its IP configuration aut	n DNS settings automatically if it a omatically.	lso obtains
() Obtain DNS server ad (o) Use the following DN	dresses and a hostname automatically S server addresses and hostname:	_
Primary DNS Server	10.219.250.124	1
Hostnane [host1	i
(Up/Down> Select (Space)	Mark Selected (Enter> OK	<pre>KEsc> Cancel</pre>



16. To exit, press ESC and then press Y to confirm the changes.

17. Repeat the preceding steps 1...16 for host2.

Update High Availability

To update the high availability configuration, perform the following steps.

- 1. Open a web browser and navigate to the VMware vCenter: https://192.168.249.14
- Sign in with the following credentials. Username: administrator@ra.internal Password: <system-specific password>
- 3. Select Login.
- 4. From the left pane, select Cluster.



5. From the top, select the Configure tab.



6. From the left Services dropdown menu, select vSphere Availability.



7. From the top right, select Edit.

vSphere HA is Turned Of Runtime information for vSphere HA is Proactive HA is not availa To enable Proactive HA you must also Failure conditions and re	N reported under vSphere HA Mor able enable DRS on the cluster. SPONSES	nitoring	EDIT
Failure	Response	Details	
Host failure	✓ Restart VMs	Restart VMs using VM restart priority ordering.	
Proactive HA	() Disabled	Proactive HA is not enabled.	
Host Isolation	① Disabled	VMs on isolated hosts will remain powered on.	
Datastore with Permanent Device Lo	✓ Power off and restart V	Datastore protection enabled. Always attempt to restart VMs.	
Datastore with All Paths Down	✓ Power off and restart V	Datastore protection enabled. Ensure resources are available before re-	starting V
Guest not heartbeating	1 Disabled	VM and application monitoring disabled.	

8. From the top right, select the Advance Options tab.

Edit Clust	ter Settings Cluster	>
vSphere HA	٥	1 1
Failures and re	esponses Admission Control He	artbeat Datastores Advanced Options
Option	Value	ADD
Option		Value
das.con	fig.fdm.unknownStateMonitorPeriod	30

9. Update the das.isolationaddress0 text field with the new IP address.

ption	Value	ADD
	Option	Value
:	das.config.fdm.unknownStateMonitorPeriod	30
:	das.isolationaddress0	
:	das.reregisterrestartdisabledvms	True
:	das.usedefaultisolationaddress	False

10. When finished, select Ok.

Failures and responses Admission Control Heartbeat Datastores Advanced Options

ption	Value	ADD
	Option	Value
:	das.config.fdm.unknownStateMonitorPeriod	30
:	das.isolationaddress0	
:	das.reregisterrestartdisabledvms	True
:	das.usedefaultisolationaddress	False
		4 item

CANCEL

11. Right-click on host1 and select Reconfigure for vSphere HA.

\equiv vSphere Client Q	 Actions - host1.ra.internal New Virtual Machine Deploy OVF Template New Resource Pool
() ð e Ø	Ed New vApp
✓	뚭 Import VMs
Datacenter Im Cluster	Maintenance Mode >
	Connection >
host2.ra.internal	Power >
Support-Probe Support-Proxy	Certificates >
🕼 vCenter	Storage >
VetSvcs	🔮 Add Networking
🔀 Witness	Host Profiles >
✓ Recent Tasks Alarms	Export System Logs
Task Name	Reconfigure for vSphere HA
Cancel Check complianc []] (😋 Assign License

The warning clears after a moment.

12. Repeat steps 4...10 for host2.

Reconnect Hosts

If the VMware vCenter displays an error that it cannot synchronize the host, the four hosts (host1, host2, NPU, and Witness) must be disconnected and reconnected. To do so, perform the following steps.

- 1. Open a web browser and navigate to the VMware vCenter: https://192.168.249.14
- Sign in with the following credentials. Username: administrator@ra.internal Password: <system-specific password>
- 3. Select Login.

4. Right-click host1, select Connection > Disconnect.



5. To disconnect host1, select Ok.



CANCEL

ОК

- 6. Repeat steps 3 and 4 for the host2, NPU, and Witness.
- After all four hosts are disconnected, right-click on host1 and select Connection > Connect.



8. To reconnect the host, select Ok.



9. Repeat steps 7 and 8 for the remaining hosts.

Restart vSAN Cluster

To restart the vSAN cluster, perform the following steps.

1. In the VMware vCenter, right-click the Cluster and select vSAN > Restart cluster.

vSphere の f 「 「 「 」 「 」 「 」 「 」 「 」 」 」 「 」 」 」 」 「 」 』 『 』 』	Client	New Virtual Machine New Resource Pool Deploy OVF Template		<	Cluster : A
v @ vCenter.ra	a.interna	New vApp			
V 🗄 Datace	enter (3	Import VMs	16		Issues and Alarn
1	iost1.ra.ii	Storage	>		vSAN performance : vSAN stretched clus
. ⊓ 27 s	ost2.ra.i Support-	Host Profiles	>		vSAN data alarm 'vS
ස් 9 ස් 1	Support-	Edit Default VM Compatibility			VIEW ALL ISSUES (
Inpu	.ra.interr 🗇	Assign vSAN Cluster License			Chuster Dataile
	Vitness	Settings			Cluster Details
🤔 witr	ess.ra.ir	Move To Rename Tags & Custom Attributes	,		To To Mit Fai
		Add Permission			G
		Alarms	>		
		Remove from Inventory			
	8	Delete		Restart cluster	
A Recent Ta		VSAN	>	Upload suppo	rt bundle

2. Select Restart.



The vSAN cluster restarts.

Notes:

Rename VersaVirtual Appliance Components

This chapter provides information on how to rename the VVA components. The procedures that are outlined in this chapter require approximately 1...2 hours to complete.

When multiple VVA units are installed on the same network, it is helpful to rename one of the units so both can be managed from one workstation. Renaming one of the units also reduces the need to edit the host file or reconfigure the DNS records.

IMPORTANT	The procedures documented in this section can be performed without system downtime. However, when you implement the steps in this section, system redundancy is degraded, which can result in downtime, should a hardware or software component fail during procedure execution.
	Rockwell Automation recommends that you implement the procedures in this section during a time when an unexpected failure will not cause the loss of production or other hazards.

Before you perform the procedures in this section, consider the following:

- Host and domain names can be changed.
- Since vSphere is configured to use FQDNs, the process remains consistent regardless
 of the change being requested.
- The procedures in this section are based on components that are configured with default names and IP addresses, such as vcenter.ra.internal and host1.ra.internal.
- When a new host name is required, these procedures use "vval-" at the start of the host name being changed — for example, vval-*.example.com.
- The domain "ra.internal" is replaced with "example.com."
- During implementation, the example values used in this section are meant to be replaced with the desired host and domain names.

Preliminary Steps

Before you begin the rename process, perform the following preliminary steps.

- Confirm you have a current backup of any VM stored on the vSAN cluster. While this
 process should be safe to perform without data loss or disruption, one of the
 procedures temporarily removes nodes from the vSAN cluster. If a component fails
 during this time, data loss could result.
- 2. Verify that the hosts and VMware vCenter are running VMware vSphere 6.7u3 or later.
- 3. Update the local hosts file or DNS server for the computer that is used to perform these steps. Doing so helps ensure that the new and default host names resolve properly. Following is an example of a host file that reflects the default and updated host names.

```
*hosts - Notepad
File Edit Format View Help
# localhost name resolution is handled within DNS itself.
       127.0.0.1
                        localhost
#
#
                        localhost
        ::1
# VVA Original Names
192.168.249.11 host1-bmc.ra.internal # Host 1 Baseboard Management Controller
192.168.249.12 host2-bmc.ra.internal # Host 2 Baseboard Management Controller
192.168.249.18 vCenter.ra.internal # vCenter server
192.168.249.14 host1.ra.internal # cluster host 1
192.168.249.15 host2.ra.internal # cluster host 2
192.168.249.13 npu.ra.internal # management host
192.168.249.16 witness.ra.internal # witness host
192.168.249.17 netsvcs.ra.internal # DNS server
192.168.249.19 support-probe.ra.internal # Support probe
192.168.249.20 support-proxy.ra.internal # Support proxy
# VVA Updated Names
192.168.249.11 vva1-host1-bmc.example.com # Host 1 Baseboard Management Controller
192.168.249.12 vva1-host2-bmc.example.com # Host 2 Baseboard Management Controller
192.168.249.18 vva1-vCenter.example.com # vCenter server
192.168.249.14 vva1-host1.example.com # cluster host 1
192.168.249.15 vva1-host2.example.com # cluster host 2
192.168.249.13 vva1-npu.example.com # management host
192.168.249.16 vval-witness.example.com # witness host
192.168.249.17 vval-netsvcs.example.com # DNS server
192.168.249.19 vval-support-probe.example.com # Support probe
192.168.249.20 vva1-support-proxy.example.com # Support proxy
```

Rename Procedures

Add New Name Information to DNS Server Hosted by NetSvcs

Host name information must first be added to the DNS server hosted by NetSvcs. When you add host name information to this server, the VMware vCenter can resolve new and existing host names for the VMware vCenter and other system components. Adding host name information can also be helpful if you rename your VVA components.

To add new host name information to the DNS server hosted by NetSvcs, perform the following steps.

 Connect to a terminal session on the NetSvcs VM, either through the VM remote console or through SSH.

Rockwell Automation recommends that you use SSH with an editor such as Microsoft[®] Visual Studio[®] Code so you can edit the DNS server configuration files offline and paste changes from the editor into the configuration file.

2. Once connected, edit the ra.conf file with the following command:

sudo nano /etc/unbound/local.d/ra.conf

[sysadmin@NetSvcs ~]\$ sudo nano /etc/unbound/local.d/ra.conf

- 3. In the editor, add new records for forward and reverse entries.
 - a. If only the host name is changing, add the new records to the existing "local-zone" section.
 - b. If you change the domain name, create a "local-zone" section as show in the sample updated configuration in the Updated ra.conf at the end of this section.

Confirm that the updated configuration contains records for both original and new names. Original records are removed as the last step in the configuration process.

- 4. Press CTRL+0 and enter to save the file.
- 5. To exit the editor, press CTRL+X.
- 6. With the file updated, enter:

sudo systemctl restart unbound

The process might take several minutes to complete. Completion status is not typically displayed.

7. To verify status after running the command in step 6, enter:

systemctl status unbound

8. Look for active (running) status.



Leave the shell session open.

Factory default: ra.conf

Following is an example of the default *ra.conf* file.

```
access-control: 192.168.249.17/24 allow
access-control: 192.168.249.49/25 allow
access-control: 169.254.50.194/16 allow access-control: 169.254.50.194/16 allow
access-control: 169.254.190/16 allow
access-control: 130.151.185.147/22 allow access-control: 169.254.110.230/16 allow
access-control: 127.0.0.1/8 allow
unblock-lan-zones: yes
local-zone: "ra.internal." transparent
    local-data: "npu.ra.internal. IN A 192.168.249.13"
local-data-ptr: "192.168.249.13 npu.ra.internal"
   local-data: "hostl.ra.internal. IN A 192.168.249.14"
local-data-ptr: "192.168.24v9.14 hostl.ra.internal"
local-data: "host2.ra.internal. IN A 192.168.249.15"
    local-data-ptr: "192.168.249.15 host2.ra.internal"
    local-data: "witness.ra.internal. IN A 192.168.249.16"
    local-data-ptr: "192.168.249.16 witness.ra.internal"
    local-data: "NetSvcs.ra.internal. IN A 192.168.249.17"
    local-data-ptr: "192.168.249.17 NetSvcs.ra.internal"
    local-data: "vCenter.ra.internal. IN A 192.168.249.18"
local-data-ptr: "192.168.249.18 vCenter.ra.internal"
    local-data: "Support-Probe.ra.internal. IN A 192.168.249.19"
local-data-ptr: "192.168.249.19 Support-Probe.ra.internal"
forward-zone:
name: "."
forward-addr: 192.168.249.1s
```

Updated ra.conf

Following is an example of an *ra.conf* file, after it has been updated.

access-control: 192.168.249.17/24 allow
access-control: 192.168.249.49/25 allow
access-control: 169.254.50.194/16 allow
access-control: 169.254.50.194/16 allow
access-control: 169.254.190/16 allow
access-control: 130.151.185.147/22 allow
access-control: 169.254.110.230/16 allow
access-control: 127.0.0.1/8 allow
unblock-lan-zones: yes
local-zone: "ra.internal." transparent
local-data: "npu.ra.internal. IN A 192.168.249.13"
local-data-ptr: "192.168.249.13 npu.ra.internal"
local-data: "host1.ra.internal. IN A 192.168.249.14"
local-data-ptr: "192.168.249.14 host1.ra.internal"
local-data: "host2.ra.internal. IN A 192.168.249.15"
local-data-ptr: "192.168.249.15 host2.ra.internal"
local-data: "witness.ra.internal. IN A 192.168.249.16"
local-data-ptr: "192.168.249.16 witness.ra.internal"
local-data: "NetSvcs.ra.internal. IN A 192.168.249.17"
local-data-ptr: "192.168.249.17 NetSvcs.ra.internal"
local-data: "vCenter.ra.internal. IN A 192.168.249.18"
local-data-ptr: "192.168.249.18 vCenter.ra.internal"
local-data: "Support-Probe.ra.internal. IN A 192.168.249.19"
local-data-ptr: "192.168.249.19 Support-Probe.ra.internal"
local-zone: "example.com." transparent
local-data: "vval-npu.example.com, IN A 192.168.249.13"
local-data-ptr: "192.168.249.13 yval-npu.example.com"
local-data: "vval-bostl.example.com. IN A 192.168.249.14"
local-data-ptr: "192 168 249 14 yval-bosti example com"
local-data: "yval-bost2 example com IN A 192 168 249 15"
local-data-ntr. "192 168 249 15 yual-bost2 example com"
local-data: "yval-witness example com IN A 192 168 249 16"
local-data-ntr. "192 168 249 16 yuza-witness example com"
local-data: "uural-NatSuce example com IN A 192 168 249 17"
local-data_ntr. "102 168 240 17 uutal-NotSuce ovamplo com"
local data per. 192.100.249.17 vvar NetSvestekampre.com
local-data_ntr. "102 168 240 18 uval_uContor ovamplo com"
local data per. 152.100.249.10 vvar vceneter.example.com
102 160 240 10"
192.100.249.19
Brabe example com"
forward-zono.
namo. " "
forward-addr. 102 169 240 1
IOIWalu-auur: 192.108.249.1

Rename NetSvcs

To rename the NetSvcs VM, perform the following procedures.

1. From the same shell session that was used to update the DNS server settings (in the Add New Name Information to DNS Server Hosted by NetSvcs section), enter:

sudo hostnamectl set-hostname <new fqdn>
Replace "<new fqdn>" with the new host name and domain name for NetSvcs. For
example:

```
sudo hostnamectl set-hostname vval-
netsvcs.example.com
```

[sysadmin@netsvcs ~]\$ sudo hostnamectl set-hostname vval-netsvcs.example.com

No information is returned after you run this command.

2. To verify that the host name and domain name have changed, enter:

hostnamectl

Review the output and confirm the new host name and domain name in the static host name field.

```
[sysadmin@netsvcs ~]$ hostnamectl
Static hostname: vval-netsvcs.example.com
Icon name: computer-vm
Chassis: vm
Machine ID: cae06e6fc52e4ff9b0e63e3e36cf0f2d
Boot ID: 0bc3f9ea77de41578fb2a51e934b9a97
Virtualization: vmware
Operating System: CentOS Linux 7 (Core)
CPE OS Name: cpe:/o:centos:centos:7
Kernel: Linux 3.10.0-957.12.1.el7.x86_64
Architecture: x86-64
[sysadmin@netsvcs ~]$
```

Rename VMware vCenter

To rename the VMware vCenter, perform the following procedures.

1. Open a web browser and navigate to the VMware vCenter Server Appliance management interface:

https://vcenter.ra.internal:5480

2. Sign in with the following credentials.

Username: root (or) administrator@ra.internal

Password: <system-specific password>

- 3. Select Next.
- 4. To open the network settings wizard, select Networking from the left navigation. Then, from the upper right, select Edit.

vm Appliance Management	Fri 01-29-2021 09:41 PM UTC) English v	Help ~		Administrator@RA.INTERNAL ~
Summary	Network Settings						2 594
Monitor	Hostname		vcenter.ra.internal				Ũ
	DNS Servers		192.168.249.17				
Access	V NIC 0						
Networking 1	Status		Up				
Firewall	MAC Address		00.0C:29:32:6C:7A				
	IPv4 Address		192.168.249.18 / 24 ((Static)			
Time	IPv4 Default Gateway		192.168.249.1				
Services	man and the second	a. p. a. b. marchend	يدهى بالمسارة	······································	no.o	- مرجبين	and my date

5. The standard VMware vCenter deployment displays one network adapter. Select next.

Edit Network Settings	Select Network Adapter	>
1 Select Network Adapter	Select a network adapter that you would like to edit. Select NIC 0 if you would like to edit the hostname and/or settings of your vCenter Server Appliance.	DNS
2 Edit settings	Physical Network Adapter v IPV4/IPV6 v IPV4/IPV9 Default v MAC Address v Address Address v	Status
3 Ready to complete	NLC 0 (Management) 192 158 349 18 192 158 349 1 00 0c 29 32 6c 7a	up
	1	,

6.	Update the	e host name	field to t	the desired	FQDN and	then select I	Next.
----	------------	-------------	------------	-------------	----------	---------------	-------

in the the first sectorings	con accorda		
Select Network Adapter	Edit your settings for the selected	network adapter.	
2 Edit settings) Hostname and DNS	Hostnama vva1-vcenter example.com 1 Dr05 Servers: 192 168 249 17	
SSO credentials	> NIC 0	Status : Up MAC Address: 00.0C:29.32:0C:7A	
Ready to complete			

- Enter the default SSO credentials for the unit: Username: administrator@ra.internal Password: <system-specific password>
- 8. Select Next.

Edit Network Settings 1 Select Network Adapter	SSO credentials Enter the SSO administrator credentials for vCenter server appliance.	×
2 Edit settings	Username: administrator@ra.internal	
3 SSO credentials	Password:	
4 Ready to complete	CANCEL BA 2 NEXT	
		-

 Edit Network Settings
 Ready to complete
 ×

 1 sketch Network Adapter
 *

 2 did settings
 *

 3 550 credentials
 *

 • Ready to complete
 *

 • National
 *

 • Nation





WARNING: Do not refresh this page. **WARNING:** After several minutes, the browser redirects you to the new FQDN. **WARNING:** The VMware vCenter SSO is not functional at this point, so to sign in,



If you change the FQDN of VMware vCenter, the domain name that is used by the VMware vCenter SSO will not change. The default administrator account also remains unchanged:

administrator@ra.internal

10. The task progress window displays again. Continue to wait.

use the root user name and password.

- 11. When the process is complete, select Close on the network update progress window.
- 12. The Summary page now reflects the new name of the VMware vCenter appliance.

vm Appliance Management	Fri 01-29-2021 09:4	9 PM UTC) English -	Help ~		
Summary		Hostname:	voal-vcenter.example.com	envices Controller			
Monitor	51	Product: Version:	VMware vCenter Server Appliance 6.7.0.42000				
Access		Build number	15132721				
Networking	Health Status		Single Sign-On				
Firewall	Overall Health	Ø Good (Last che	cked Jan 29, 2021, 04:49:08 Domain	ra.internal	parana p	an same	alles and a state of

Redeploy the vSAN Witness Virtual Machine

It is typically more efficient to redeploy the vSAN witness VM with a new instance of the witness, rather than rename the existing instance. To redeploy the vSAN witness, perform the steps in this section.

IMPORTANT This process degrades the redundant state of the vSAN cluster. To reduce the risk of data loss due to a component failure during this procedure, backup and shut down any VMs that are running on the unit. Any VMs that are running during this procedure continue to run. However, when you perform the steps in this procedure, the unit operates without redundancy, and will stop operating if a cluster host or disk fails during the procedure.

Unregister and Remove Existing Witness

To unregister and remove the existing witness, perform the following procedures.

- 1. Sign in to the VMware vCenter Client
- 2. Open a web browser and navigate to the VMware vCenter Client:
- 3. https://vcenter.ra.internal
- Sign in with the following credentials. Username: administrator@ra.internal Password: <system-specific password>
- 5. Select Login.
- 6. Once logged in, select Cluster and then navigate to the Configure tab.
- 7. From the configuration list, select Fault Domains.
- 8. Select Disable Stretched Cluster.

S und - Carrier rainternal	Summary Monitor C	Configure Permissions Hosts VA	4 Oetailto	es Networks Updates		
- IB Datacenter	Literaing v	The have not finalized or skipped to	te studer Quick	dart, vSAN Health Stylings are suppressed		la, ti, ikutati
a Over 🛻	vSAN Chatter	Fault Domains				
 host2rainternal 	Trust Authority Atam Definitions	Fault domain failures to toterate		1		
(2 Support-Probe	Scheduled Tasks	Configuration type		Strutched cluster		
(2 Support Provy (2 vCenter	vlahere Challer Services v Datastores	Witness faced		C entress reinternet		Converse and with the substitution
· 2 strattand	Desired State ~ mage Configuration	Primary (preferred)	30	Secondary User reports		
	vitate v Services Dati Management	C S Nettrans.	20	C & NerGranme.	205	

9. A warning is displayed to indicate that the vSAN witness is about to be removed from the cluster, which could lead to a cluster misconfiguration. Select Remove.



The cluster is degraded while the witness is replaced.

10. Wait for the Remove witness host and all Update vSAN configuration tasks to complete.

- · · · · · · · · · · · · · · · · · · ·	122 12	T	2.42	
Task Name	Target	· 1	Status	2
Update vSAN configurati	host2.ra.internal		O Completed	
Update vSAN configurati	host1.ra.internal		⊘ Completed	
Remediate vSAN cluster	[]] Cluster		⊘ Completed	
Update vSAN configurati	witness.ra.interna	i i	⊘ Completed	
Update vSAN configurati	witness.ra.interna	d.	⊘ Completed	
Remove witness host	[]] Cluster		O Completed	

11. Right-click the Witness host and select Remove from Inventory.

Image: Second System Image: Second System <td< th=""><th> vistere Cler D. E. B. </th><th>(2 New Virtual Hachere (2 Depary OVF Template (2 New Resource Pool (2 New ship)</th><th>ainternal (errow</th><th>era Rosta - Ententruma - 1</th><th></th><th>C 3.444</th><th>elempilek settelikelet, w</th><th>0 Q-</th></td<>	 vistere Cler D. E. B. 	(2 New Virtual Hachere (2 Depary OVF Template (2 New Resource Pool (2 New ship)	ainternal (errow	era Rosta - Ententruma - 1		C 3.444	elempilek settelikelet, w	0 Q-
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	Periodula yiele conter		1	on physics year health	2.96	04/32/3025 1/12/5 A.	06/10/0015 H (0.12) -	mail washington.

12. Right-click on the Witness VM and select Power > Power Off.

三 vichers Clert	Guest OS / Snapahots / Coart Banctos Consulte (2), Migram.	Prose Dr. Prosection Processor	atore Networks Sogulate Loders	C Sammunalantinal - Q O-
B. Conserver C. Conserver C. Conserver C. Conserver C. Social and Conserver C. Social and Conserver C. Social and Conserver C. Social and Conserver Conserver Conserver Conserver	Obve > Pault Tolecance > VM Policies > Tanspare > Concessibility > Brajent System Logis > Ø Bidt Serrings Horare	Brut Down Guest Od. (111 + 111 + 1) Restart Guest Od. (211 + 111 + 1) Restart Guest Od. (211 + 111 + 1) (211 + 111 + 1) (211 + 111 + 1) (211 + 111 + 1) (211 +	Defails Account - Acc	E Capacity and Usage E Catalogue at 13.54 CPV 1.007 Of the set 1.007 1.007 Of the set 1.007 1.007 1.00 1.00 1.00 1.00 1.00 1.
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It is not necessary to shut down the guess OS since the VM is going to be removed and replaced.

13. Right-click on the Witness VM and select Delete from Disk.



Deploy the New vSAN Witness Virtual Machine

To deploy the new vSAN witness VM, perform the following steps.

1. Right-click on the NPU host and select Deploy OVF Template.



2. In the Deploy OVF Template wizard, select Local File > Choose Files. Browse to the location of VMware-VirtualSAN-Witness-201912001-15160138.ova, or a newer version of that file provided by Rockwell Automation technical support. Then select Next.



3. Enter a name for the Witness VM.

1 Select an OVF template 2 Select a name and folder	Select a name and folder Specify a unique name and target location	
3 Select a compute resource 4 Review details	Virtual mechine 1 Wires	-
6 Ready to complete	Select a location for the vehial machine	
	1	



The name does not have to match the host name or $\ensuremath{\mathsf{FQDN}}$ of the witness appliance.

Rockwell Automation recommends adding "witness" to the name to help identify it in the future.

- 4. Select Next.
- 5. Verify that the NPU host is selected and that no compatibility issues are displayed, and then select Next.

1 Select an OVF template 2 Select a name and folder	Select a compute resource Select the destination compute resource for this operation
3 Select a compute resource 4 Deview details	
5 Select storage	> Custer!
6 Ready to complete	1 minagement (a internal)
2	
	Compatibility
	Compatibility checks succeeded
- 6. Review the template details.
 - If you specify additional configuration information for the VM, additional steps might be added to the wizard.
- 7. After you confirm the template details, select Next.

Deploy OVF Template	Review details Verify the template details.	
1 Select an OVF template	The OVF package contains adv advanced configuration options	nced configuration options, which might pose a security risk. Review the below. Click next to accept the advanced configuration options.
3 Select a compute resource	Publisher	VMware, Inc. (Trusted certificate)
4 Review details	Product	VMware vSAN Witness Appliance
9 Lorne agreements	Vander	Vilvare, Inc.
6 Configuration	Description	VMware vSAN Witness Appliance
7 Selectatorage	Download size	826.7 MB
8 Select networks	Size on disk	Unknown (thin provisioned) 2.5 T8 (thick provisioned)
9 Customas template	Advanced configuration	svia.maxWeth + 720
10 Ready to complete		CANCEL NEXT

8. Review and accept the end-user license agreement and then select Next.

1 Select an OVF template 2 Select a name and folder	License agreements The end-user license agreement must be accepted.				
3 Select a compute resource 4 Review details	Read and accept the terms for the license agreement.				
5 License agreements 6 Configuration	VMWARE END USER LICENSE AGREEMENT	1			
7 Select storage 8 Select networks 9 Customize template 10 Ready to complete	PLEASE NOTE THAT THE TERMS OF THIS END USER LICENSE AGREEMENT SHALL SOVERN YOUR USE OF THE SOFTWARE, REGARDLESS OF ANY TERMS THAT MAY APPEAR DURING THE INSTALLATION OF THE SOFTWARE.				
	IMPORTANT-READ CAREFULLY: BY DOWINLOADING, INSTALLING, OR USING THE SOFTWARE, YOU (THE INDIVIDUAL OR LEGAL ENTITY) AGREE TO BE BOUND BY THE TERMS OF THIS END USER LICENSE AGREEMENT ("EULA"). IF YOU DO NOT AGREE TO THE TERMS OF THIS EULA, YOU MUST NOT DOWINLOAD, INSTALL, OR USE THE SOFTWARE, AND YOU MUST DELETE OR RETURN THE UNUSED SOFTWARE TO THE VENDOR FROM WHICH YOU ACQUIRED IT WITHIN THRTY (30) DAYS AND REQUEST A REFUND OF THE LICENSE FEE, IF ANY, THAT YOU PAID				
0	I accept al license agreements.				

9. Confirm that the Medium configuration size is selected and click Next.

Deploy OVF Template	Configuration		×
_	Medium (up to 500 VMs/21 Clusters)	Deployments of up to 500 VMs /	
1 Select an OVF template	O Large (more than 500 VHs/24 Clusters)	21 Clusters. Component	
2 Select a name and folder	O Extra Large (Up to 64 Ousters)	Components, 21 Ousters	
3 Select a compute resource		K/Cluster). Please see the Deploying a vSAN Witness Appliance section of the vSAN	
4 Review details		Planning and Deployment guide	
5 License agreements		for further details.	
6 Configuration	1		
7 Select storage			
8 Salect retricted			
9 Costorrore template	1.000		1
30 Ready to complete			

10. Select NPU.Datastore as the target datastore, confirm that the virtual disk format is set to Thick Provision Lazy Zeroed, and then select Next.

Deploy OVF Template	Select storage
1 Select an OVF template	Select the storage for the configuration and disk files Encrypt this virtual machine (Requires Key Management Server) Select virtual disk format Thick Provision Laxy Zeroed Virt Storage Policy Datastore Default =
2 Select a name and folder 3 Select a compute resource	Disable Storage DRS for this virtual machine
4 Review details	Name Y Strapp Compatibility Y Capacity Provisioned Y Free Y Type Y Outline Image: Compatibility Image: Compatibility T Capacity Y Provisioned Y Free Y Type Y Outline Image: Compatibility Image: Compatibility T Capacity Y Free Y Type Y Outline Image: Compatibility Image: Compatibility T Capacity Y Free Y Type Y Outline Image: Compatibility T Capacity T Free Y Type Y Outline Image: Compatibility T Free Free T Type Y Outline Image: Compatibility T Free Free T Type T Outline Image: Compatibility T Free Free T T T Outline T T T T <td< td=""></td<>
5 License agreements	ann per jage 10 - 1 fam.
6 Configuration	
7 Select storage	Compatibility
E. Select returns	Compatibility checks succeeded.
9 Customize template	
10 Ready to complete	CANCEL NEXT

11. On Select Networks, set Management Network to Management Network and Secondary Network to Management Network. Then select Next.

Deploy OVF Template	Select networks	urce network	×
1 Select an OVF template			
3 Salact a same and trider	Source Network	Destination Network	
a seed of large and range	Management Network	Management VM Network -	<u>6</u> ,
3 Select a compute resource	Secondary Network	Management VM Network -	
4 Review details	0		2 April 1
5 License agreements	IP Allocation Settings		
	IP alocation	Static - Manual	
6 Configuration	IP protocol	Pvi	
7 Select storage			
8 Select networks			
9 Customize template			
10 Ready to complete			ANCEL NEXT

12. On Customize Template enter the appliance password or desired password for the vSAN Witness, set Network for vSAN Traffic to Secondary. Then scroll down to complete the rest of the form.

1 Select an OVF template 2 Select a name and folder 3 Select a compute resource	Customize template Customize the deployment proper	ties of this software solution
4 Review details 4 Stucense agreements	All properties have valid value	es X
6 Configuration	- System Configuration	1 settings
Select networks Ocustomize template To Ready to complete	Root password	Set passered for root account: A valid passer must be at least 7 characters long and must contain a rost of upper and lower case letters, digits, and other characters. Passeord Confirm Passeord
	- VSAN Traffic	1 settings
	Network for vSAN Traffic	Which referent will be used for vSAN Traffic?
	- Management Network	7 settings
	IP Address	IP Address of versio (\$40P if set bases)
	Nationala	Nationals of small (TeelD if ant Houses

13. Configure the Management Network as follows:

- IP address: 192.168.249.16
- Netmask: 255.255.255.0
- Gateway: 192.168.249.1

Deploy OVF Template	Customize template			
1 Select an OVF template		Password		۵
2 Select a name and folder		Confirm Password		٥
3 Select a compute resource				
4 Review details	VSAN Traffic	1 settings		
5 License agreements	Network for vSAN Traffic	Which network will be Secondary	e used for vSAN Traffic?	
6 Configuration	V Management Network	7 settings		
7 Select storage	IP Address	IP Address of vmk0 (1	DHCP if left blank)	
8 Select networks	Netmask	Netmask of vmk0 (DF	HCP if left blank)	
9 Customize template	Gateway	Gateway of vmk0 (DF	HCP if left blank)	
10 Ready to complete	_	192.168.249.1		
	DNC Domain	DNC Dromain (DHATD a	CANCEL	BACK



If the IP addresses in your unit have already been reconfigured per the procedures in this user manual, adjust the values in this section to match the new addresses used for the appliance.

IP addresses referenced in the following steps and screenshots are based on factory defaults.

- 14. Scroll down and continue the configuration, as follows.
 - DNS Domain: ra.internal or the desired new domain name example: example.com
 - Witness Host name: witness or the desired new host name example: vva1-witness
 - DNS Server: 192.168.249.17

If the unit has been reconfigured per this user manual, use the new address that is assigned to $\ensuremath{\mathsf{NetSvcs}}$

- NTP Servers: 192.168.249.1

If the unit has been reconfigured per this user manual, use the new addresses that are assigned to network module 1 and 2 $\,$

Deploy OVF Template	Customize template		×
	 Management Network 	7 settings	
1 Select an OVF template	IP Address	IP Address of vmk0 (DHCP if left blank)	
2 Select a name and folder		192.168.249.16	
3 Select a compute resource	Netmask	Netmask of vmk0 (DHCP if left blank)	
		255.255.255.0	
4 Review details	Gateway	Gateway of vmk0 (DHCP if left blank)	
5. 13		192.168.249.1	
5 License agreements	DNS Domain	DNS Domain (DHCP if left blank)	
6 Configuration		example.com	
7 Select storage	Witness Hostname	Witness Hostname (DHCP if left blank)	
-		vva1-witness	
8 Select networks	DNS Servers	Use comma separators (DHCP if left blank)	
9 Customize template		192.168.249.17	
	NTP Servers	Use comma separators or leave blank	
10 Ready to complete		192.168.249.1	
			-
		CANCEL BACK NEX	кт

15. Scroll down and set the Secondary Network address to 192.168.250.70, with a subnet mask of 255.255.255.192.

Leave the gateway blank and select Next

Deploy OVF Template	Customize template		×
1 Select an OVF template	DNS Domain	DNS Domain (DHCP if left blank) example.com	
2 Select a name and folder	Witness Hostname	Witness Hostname (DHCP if left blank)	
3 Select a compute resource		vva1-witness	
4 Review details	DNS Servers	Use comma separators (DHCP if left blank) 192.168.249.17	
5 License agreements	NTP Servers	Use comma separators or leave blank	
6 Configuration		3 settings	
7 Select storage	IP Address	IP Address of vmk1 (DHCP if left blank)	
8 Select networks	Netmask	192.168.249.21 Netmask of vmkt (DHCP if left blank) 255.255.255.192	
10 Ready to complete	Gateway	Gateway of vmkl (Not set if left blank)	
		CANCEL BACK NEXT	

16.	Review	the	confiqu	uration	and	then	select	Finish.

Deploy OVF Template	Ready to comple	ete	×
	Storage mapping	t	
1 Select an OVF template	All disks	Datastore: NPU.datastore; Format: Thick provision lazy zeroed	
2 Select a name and folder	✓ Select networks		
	Network mapping	2	
3 Select a compute resource	Management Network	Management VM Network	
4 Review details	Secondary Network	Management VM Network	
	IP allocation settings		
5 License agreements	IP protocol	IPV4	
6 Configuration	IP allocation	Static - Manual	
	 Customize template 		
7 Select storage	Properties	Network for vSAN Traffic = Secondary IP Address = 192.168.249.16	
8 Select networks		Netmask = 255.255.255.0 Gateway = 192.168.249.1 DNS Domain = example.com	
9 Customize template		Witness Hostname = vval-witness DNS Servers = 192.168.249.17 NTP Servers = 192.168.249.1	
10 Ready to complete		IP Address = 192.168.249.21 Netmask = 255.255.255.192 Gateway =	
		CANCEL	FINISH

17. Wait for the Deploy OVF Template and Import OVF package tasks to complete.

~	Recent Tasks	A	Alarms		
Task N	Name	٣	Target	r	Status
Deplo	oy OVF template		🗍 npu.ra.internal		⊘ Completed
Impo	rt OVF package		npu.ra.internal		⊘ Completed
~	Recent Tasks	A	Alarms		
Tack	Name	т	Target	r	Status
I dsk r					or or or or o
Deplo	by OVF template		npu.ra.internal		⊘ Completed

18. Right-click on the new Witness VM and select Power > Power On



 Wait for the VM to finish start up. To monitor the startup sequence, select the VM, which displays a small console status icon to the right of the selection.



Register the New vSAN Witness

To register the new vSAN witness, perform the following steps.

1. Right-click Datacenter and select Add Host...



2. Enter the new FQDN of the Witness and select Next

1 Name and location	Name and location		
2 Connection settings	Enter the name or IP address of the host to	add to vCenter Server.	
3 Host summary		^	
4 Assign license	Host name or IP address:	a1-witness.example.com	
5 Lockdown mode	Location:	Datacenter	
6 VM location			
7 Ready to complete			

 Enter the following credentials. Username: administrator@ra.internal Password: <system-specific password> 4. Select Next.

A solgan license S Lockdown mode O VM location 7 Ready to complete	
4 Assign license User name: 1 rroot 5 Lockdown mode 6 VM location 7 Ready to complete	
5 Lockdown mode 6 VM location 7 Ready to complete	
6 VM location Password: 2	
7 Ready to complete	

5. To accept the certificate thumbprint, select Yes.



6. Verify that the information on the Host summary screen is correct and click Next

r Name and location	Host summary	
 2 Connection settings 	Review the summary for the hos	t
3 Host summary		
4 Assign license	Name	vva1-witness.example.com
5 Lockdown mode 6 VM location	Vendor	VMware, Inc.
7 Ready to complete	Model	VMware Virtual Platform
	Version	VMware ESXi 6.7.0 build-15160138
	Virtual Machines	

7. Accept the default license assignment and click Next

1 Name and location 2 Connection settings 3 Host summary	Assign Assign	license an existing or a n	ew license	e to this host					
4 Assign license		License	Ŧ	License Key	Ŧ	Product	Ψ	Usage	Capacity
6 VM location	1 0	License 1		NH2HM-XXXXX-XXXX-XXX	XX-28DNP	VMware vSphere	6 for	• 2 CPUs	2 CPUs
7 Ready to complete	0	🔝 vSphere		1N62L-2WK1J-W8487-0J0U6	5-1RMNM	VMware vSphere	6 Sta	3 CPUs	3 CPUs
		Evaluation L	icense	-		-			
	Assic	anment Valida	ation fo	or License 1					
	∢ Assig ⊘ Tr	gnment Valida ne license assignm	ation fo	or Licenše 1 a.					

 IMPORTANT
 DO NOT CHANGE THE LICENSE.

 The vSAN Witness virtual appliance is provided with a pre-installed license from VMware.

 If the license is changed, the witness must be removed and recreated.

 8.
 Accept the Lockdown mode default configuration and select Next.

1 Name and location	Lockdown mode
2 Connection settings	Specify whether to enable lockdown mode on the host
3 Host summary	
4 Assign license 5 Lockdown mode	When enabled, lockdown mode prevents remote users from logging directly into this host. The host will only be accessible through loca console or an authorized centralized management application.
6 VM location 7 Ready to complete	If you are unsure what to do, leave lockdown mode disabled. You can configure lockdown mode later by editing Security Profile in host settings.
	Disabled
	O Normal
	The host is accessible only through the local console or vCenter Server.
	○ strict
	The host is accessible only through vCenter Server. The Direct Console UI service is stopped.

9. Select a VM location and then select Next.

1 Name and location	VM location
3 Host summary	V 🗈 Datacenter
4 Assign license	> Applications
5 Lockdown mode	> 🗖 Discovered virtual machine
6 VM location	1 Management
7 Ready to complete	> Templates

10. Verify the configuration information and select Finish

1 Name and location	Ready to complete		
 2 Connection settings 	Click Finish to add the host		
3 Host summary			
4 Assign license	Name	vva1-witness.example.com	
5 Lockdown mode	Location	Datacenter	
6 VM location	Version	VMware ESXI 6.7.0 build-15160138	
o vini location	License	License 1	
7 Ready to complete	Datastores	VMINELWORK	
	Lockdown mode	Disabled	
	VM location	Management	

- 11. When the Add Standalone Host task completes, perform the following steps.
 - a. Select Cluster and navigate to the Configure tab.
 - b. From the configuration list, select Fault Domains.
 - c. Select Configure Stretched Cluster.



12. Select Secondary (fault domain) and then click the double arrow (>>) button. This moves the secondary fault domain to the right pane.

Configure Stretched Cluster	Configure fault domain	NS	ring vSAN stratchad cluster	×
1 Configure fault domains	Droferred demain:	at will be used for conlige	Cocondan, demain	
2 Select witness host	Preferred		Secondary domain: Secondary	
3 Claim disks for witness host	Secondary	2»,m		
4 Ready to complete	V Primary	«		
	host1.ra.internal			
			CANCI	EL NEXT

13. Verify that host 1 is in the primary fault domain field and host 2 is in the secondary fault domain field. Then select Next

Configure Stretched Cluster	Configure fault domains	×
1 Configure fault domains	Divide the hosts in 2 fault domains that will be used for configuring VSAN stretched cluster.	
2 Select witness host	Preferred domain: Secondary domain: Primary Secondary	_
3 Claim disks for witness host	V Primary Secondary	
4 Ready to complete	iii nost2.ra.internai	
	CAN 1 NEXT	ŀ

14. Select the new witness host from the inventory list, which launches the Configure Stretched Cluster wizard to run a compatibility check. Verify that the check succeeds and then select Next.

Configure Stretched Cluster	Select witness host ×
1 Configure fault domains	Select a host which will store all the witness components for this vSAN Stretched Cluster. Requirements for witness host:
2 Select witness host	Not part of any vSAN enabled cluster
3 Claim disks for witness host 4 Ready to complete	 Have at least one VMkernel adapter with vSAN traffic enabled That adapter must be connected to all hosts in the Stretched cluster Q. Search Q. Val-vcenter.example.com Q. Datacenter > C. Cluster1 Q. management ra internal
e	Cancel Cance

15. Select the cache and capacity tier disks. Confirm that there is only one of each, then select Next to continue.

Configure Stretched Cluster	Claim disks for witne	ss host			
1 Configure fault domains	Select disks on the witness host to First, select a single disk to serve a	be used for storing wi s cache tier.	tness component	5.	
2 Select witness host	Name	→ Drive Type →	Capacity y	Transport Type 🔻	Adapter y
3 Claim disks for witness host	1 I Local VMware Disk (mpx:	vmh Flash	10.00 GB		
4 Ready to complete					
					1 item
	Then, select one or more disks to s	erve as capacity tier.			
	Capacity type: HDD ~				
	2 Name	▼ Drive Type ▼	Capacity 🔻	Transport Type 🔻	Adapter 🔻
	Local VMware Disk (mpx:	vmh HDD	350.00 GB		

16.	Verify the	configuration	information	and then	select Finish.
-----	------------	---------------	-------------	----------	----------------

Configure Stretched Cluster	Ready to complete			×
1 Configure fault domains	Review your settings selections be Preferred fault domain name:	efore finishing the wizard. Primary		
2 Select witness host	Hosts in preferred fault domain: Secondary fault domain name:	host1.ra.internal Secondary		
3 Claim disks for witness host	Hosts in secondary fault domain:	host2.ra.internal		
4 Ready to complete	Witness host:	vva1-witness.example.com		
	Claimed cacne:	350.00 GB		
			CANCEL	BA 1 FINISH

17. After you select Finish, you might receive the following error:



18. This error message might be false. If you receive it, verify the task sign in the background.



If there is an Add witness host and Update vSAN configuration task in the task list, close the wizard by clicking the X in the upper right and then wait for the tasks to complete.

- 19. To rebuild the virtual objects, perform the following steps.
 - a. Select the Monitor tab, and navigate to vSAN > Skyline Health.
 - b. Select the vSAN object health alert.
 - $\label{eq:performance} \ensuremath{\mathsf{Performance}}\xspace \ensuremath{\mathsf{counter}}\xspace \ensuremath{\mathsf{objects}}\xspace \ensuremath{\mathsf{ared}}\xspace \ensuremath{\mathsf{degraded}}\xspace, \ensuremath{\mathsf{even}}\xspace \ensuremath{\mathsf{objects}}\xspace \ensuremath{\mathsf{counter}}\xspace \ensuremath{\mathsf{objects}}\xspace \ensuremath{\mathsf{ared}}\xspace \ensuremath{\mathsf{ared}}\xspace \ensuremath{\mathsf{objects}}\xspace \ensuremath{\mathsf{ared}}\xspace \en$
 - c. To start the rebuild, select Repair Objects Immediately.

It can take several minutes to complete this process, depending on the number of affected objects.



20. To monitor resynchronization, select vSAN > Resyncing objects.

vm vSphere Client					
V Contenter example com	Cluster1 ACTIC	NS 🗸 onfigure Permissions Hosts VMs Datastores Netwi	orks Updates		
 Datacenter Ibidacenter Ibidacent	Datastores under A Resource Allocation CPU Memory Storage Overview Security Visitation Storage Overview Security Visitation Signiper Health Visitati Objects Physical Disks Response diagno. Support Data Migration Pre-C. Couch Riskins Storage	Resyncing objects view displays the status of the objects that are of Overview Object repair time: 60 minutes ① This section is automatically refreshed every 10 seconds. → Total resyncing objects 0 → Total resyncing 0 second → Scheduled resyncing 1 object is Pending ① None Object list ① There are no objects in resync. ①	currently being resynchronized is is is is b) Show first: 100 v reserve	n the vSAN cluster. <u> </u>	NG S
	container volumes 🦆	Name v VM Sto	orage Policy Y Host Y	Bytes Left to Resync T Intent	T
Recent Tasks Alarms	- Chatara	Out a later	Cont Travel	Constanting Time Constant	*
Fix vSAN Cluster Object immediately	er1 ✓ Completed	RAINTERNAL/Admini 18 ms	02/01/2021, 3:43:48 PM	02/01/2021, 3:43:48 PM vva1-vcenter.exa	mple
Update vSAN Inost2	.ra.internal 🗸 Completed	com.vmware.vsan.hea 8 ms	02/01/2021, 3:43:04 0 PM F	02/01/2021, 3:43:09 PM vva1-vcenter.exa	mple
Update vSAN	ra.internal 🗸 Completed	com.vmwarevsan.hea 5 ms	02/01/2021, 3:43:04	02/01/2021, 3:43:09 vva1-vcenter.exa	mple

Wait for the resynchronization to complete before continuing.

Rename Cluster Hosts

To rename the cluster hosts, you must remove each host from the vSAN cluster individually. If you perform these steps, your system redundancy will be temporarily degraded. To reduce the risk of data loss due to a component failure during this procedure, shut down and back up any VMs that run on the unit.

IMPORTANT Any VMs that are running during this procedure continue to run. However, the unit will run without redundancy and will stop running if a cluster host or disk fails during the procedure.

Rename Host 1

Enter Maintenance Mode on Host 1

To enter maintenance mode on host 1, perform the following procedures.

- 1. Open a web browser and navigate to the VMware vCenter Client:
- 2. https://vcenter.ra.internal
- Sign in with the following credentials. Username: administrator@ra.internal Password: <system-specific password>
- 4. Select Login.
- 5. Right-click Host1 and select Maintenance Mode > Enter Maintenance Mode



6. Select Ensure accessibility and then select Ok.

Enter Maintenance Mode hostLra.internal	×
This host is in a vSAN cluster. Once the host is in maintenance mode, it cannot access the vSAN datastore and the state of any virtual machines on the datastore. No virtual machines can be provisioned on this host while in maintenance mode. You must either power off or migrate the virtual machines from the host manually.	
vSAN data migration 1 Ensure accessibility ~ ①	
▲ VMware recommends to run a data migration pre-check before entering maintenance mode. Pre-check determines if the operation will be successful, and reports the state of the cluster once the host enters maintenance mode.	
Put the selected hosts in maintenance mode?	
GO TO PRE-CHECK	

7. If there is an active VM on Host 1, a warning is displayed.



- 8. Select Ok.
- 9. If there is an active VM on Host 1, select Host 1 and then navigate to the VMs tab.
- 10. Select and drop each active VM from host 1 to host 2.

vm	vSphere C	Client	Menu 🗸	Q Search in all environments				C	? ~	Adminis	trator@RA.	INTERN	VAL V	9
	l-vcenter exa	ample.com	hos	t1.ra.internal ACTIONS ~	2 VMs Da	tastores Netwo	orks Updates							
~ 🗈 🛛	Datacenter													
			A Finder and A											
1	host1ra.ir	internal	Virtual N	VM Templates										
1	host1ra.ir	internal internal	Virtual N	VM Templates								T Fib	ter	
0	host1rain	internal internal () WAD2	Virtual N	Aachines VM Templates	State ~	Status v	Provisioned Space	*	Used Space	~ Ho	ist CPU	▼ Fib ~ H	tër lost Mem	v
1	hostira.r hostira.r WADI WADI WAD2	internal internal WAD2	Name †	4achines VM Templates	State ~ Powered On	Status ~ V Normal	Provisioned Space 64.08 GB	×	Used Space 58.18 GB	~ Ho 0 F	ist CPU Hz	▼ Fib	ter Jost Mem	*



To move multiple VMs between hosts, hold down the shift key and select the VMs you wish to move, then move the selected VMs to the other host as needed. 11. If you move multiple VMs, an alert is displayed to confirm the action.



12. To proceed, select Yes.

13. The Migration wizard is displayed. Select Change compute resource only and then select Next.

Select a migration type	Select a migration type	VM origin (
Select a compute resource	Change the virtual machines' compute resource, storage, or both.	
Select networks Select vMotion priori	Change compute resource only	
Ready to complete	Migrate the virtual machines to another host or cluster.	
	O Change storage only	
	Migrate the virtual machines' storage to a compatible datastore or datastore cluster.	
	Change both compute resource and storage	
	Migrate the virtual machines to a specific host or cluster and their storage to a specific datastore or datastore cluste	r.

14. Verify that host 2 is selected then select Next.

1 Select a migration type Se	elect	a com	pute resou	rce	nool to run ti	a virtual m	achines				VM	origin
3 Select networks		e ciuse					activites.					
4 Select vMotion priority	Ho	sts	Clusters	Resource Po	ols VAp	5						
5 Ready to complete											Filter	
	Nam	e ↑		Ý	State	~	Status	~	Cluster	~	Consumed CPU %	•
		host1.ra	Internal		Connected		✓ Normal		Cluster1		1%	
		host? ra	internet.									
		10012.10	ainternai		Connected		✓ Normal		Cluster1		0%	
	(TO BE T	unternai		Connected		Vormal		Cluster1		0%) titems
c	<	atibility	unterna		Connected		✓ Normal	_	Cluster1		0%) titems
		atibility	ibility check	<pre>cs succeeded.</pre>	Connected		✓ Normal	_	Cluster1		0%) items
	omp.	atibility	ibility check	cs succeeded.	Connected		✓ Normal		Cluster	_	0%) ! items
	ompi	atibility	ibility check	cs succeeded.	Connected		✓ Normal	_	Cluster		0%	• 2 items

15. Verify the VM Network connection mapping and select Next.

1 Select a migration type	Select networks			VM origin
2 Select a compute resource	Select destination networks f	or the virtual machine migration.		
3 Select networks				
4 Select vMotion priority	Migrate VM networking by se	ecting a new destination network for all VM network	k adapters attached to the same source	e network.
5 Ready to complete	Source Network	Used By	Destination Network	
	VM Network	1 VMs / 1 Network adapters	VM Network	~
	Compatibility		(ADVANCED >
	Compatibility ✓ Compatibility checks suc	cceeded.	(ADVANCED >
	Compatibility Compatibility checks sur	cceeded.	(ADVANCED >



1 Select a migration type 2 Select a compute resource 3 Select networks	Select VMotion priority Protect the performance of your running virtual machines by prioritizing the allocation of CPU resources.	VM origin (
4 Select vMotion priority 5 Ready to complete	 Schedule vMotion with high priority (recommended) whotion receives higher CPU scheduling preference relative to normal priority migrations. vMotion might complete m Schedule normal vMotion vMotion receives lower CPU scheduling preference relative to high priority migrations. You can extend vMotion durat 	ore quickly. on.

17. When ready to migrate the VM(s), select Finish.

2 Select a migration type 2 Select a compute resource 3 Select networks	Ready to complete Verify that the informat	tion is correct and click Finish to start the migration.	VM origin (
4 Select vMotion priority 5 Ready to complete	Migration Type	Change compute resource. Leave VM on the original storage	
	Virtual Machine	WAD2	
	Cluster	Cluster1	
	Host	host2.ra.internal	
	vMotion Priority	High	
	Networks	No network reassignments	

18. When VM migration is complete, the host exits maintenance mode.

vm vSphere Client			
V Val-vcenter example.com V Datacenter	host1.ra.internal ACTIONS ~ Summary Monitor Configure Permissions VMs Datastores Networks Updates		
 Cluster1 host1ra.internal host2ra.internal 	Virtual Machines VN Templates		T Filter
WAD1	Name † v State v Status v Provisioned Space	✓ Used Space ✓ Host CPU	→ Host Mem →
✓ ☐ management.ra.intern			
Support			
Bregge	السويسي الجري حسني خرائد السبوب الجراجوى السبحان فالا	and the second second second	man growing

19. To remove Host 1 from the cluster, select it and drop it into Datacenter.

vm	vSphere Client									С						
	va1-vcenter.example.com	Nos Summary	t1.ra.inter	rnal ACTIONS ~ Configure Permission	ns VMs	Data	stores	Netwo	rks Updates							
~ D	Datacenter ter (+) host1 rain 11 ra.internal (M host2.ra.internal	ternal (Maintenance	Mode) es 🕔	/M Templates	_									Ŧ	Filter	
	🖧 WAD1	Name ↑		~	State	~	Status	×	Provisioned Space	~	Used Space	~	Host CPU	~	Host Mem	~
~	management rainten	n														*
· · · · ·	Ballmint an	المسير الم	مى مەربىيە	and makers	and a	pres.	mat	-		100	AAA.	40	and and	den		Londontation,

Remove Host 1 from VMware vCenter Inventory

To remove host 1 from the VMware vCenter inventory, perform the following procedures.

1. Right-click on Host 1 and select Remove from Inventory.



2. A remove host alert is displayed. To continue, select Yes.



Reconfigure Host 1

To reconfigure host 1, perform the following procedures.

1. Open a new web browser tab or window and navigate to the local management interface for Host 1. The default addresses for the interface are as follows: https://host1.ra.internal/ui

or

https://192.168.249.14/ui

2. Sign in with the following credentials. Username: root

Password: <system-specific password>

3. Select Login.

vm ware		
Utur name rod I 1 Password 0 2 Log m 3	vm ware: Esxi"	
🖉 Open the VMware Host Client documentation		

4. In the left navigator, select Networking, then select the TCP/IP stacks tab, and then select Default TCP/IP stack.

Navigator 🖾	Q Host1.ra.internal - Networking				
Host	Port groups Virtual switches	Physical NICs VMkerne 2	CP/IP stacks Firewall rules		
Manage Monitor	🥖 Edit settings 🛛 🥐 Refresh 🔅 Au	clions			
Virtual Machines	Name ~	IPv4 gateway ~	IPv6 gateway 🗸 🗸	Preferred DNS ~	Alternate DNS
Storage	BE vMotion stack	-		-	
Networking 1	I Provisioning stack	-		-	
-	BE Default TCP/IP stack 3	192.168.249.1	-	192.168.249.17	-
	0				3 ite

5. Select Edit settings.

vmware: Esxi"					rool@vva1-host1		- Help - 🤇	2 Search	
Navigator 🖾 🗐	Default TCP/IP stack								
Host Manage Montor Virtual Machines O Virtual Machines O O Storage O	Edit settings C Refresh C Default TCP/IP s Key:	Actions tack defaulTcpipStack							
E Default TCP/IP stack	- Configuration			* Routing					
More networks	IPv6	Enabled		▼ IPv4					
	Congestion control algorithm	New Reno		Routing table	Network address ~	Prefix I v	Gateway	~ Dev~	
	Maximum connections	11000			0.0.0.0	0	192.168.249.1	vmk0	
a same may a	an janamenter and	Jan miles for and and	in.	and and and	and and all	24	and the second second	wmk0.	

6. Change the host name, domain name, and search domains to the desired values, then select Save.

Basic DNS configuration	Specify how the host should obtain its	settings for this TCP/IP stack.
	O Use DHCP DNS services from the 1	lokowing adapter
	Citru Citru	
	Manually configure the settings for t	this TCPIIP stack
	Host name	wat-tastt
	Domain name 2	example com
	Printary DNS server	192.168.249.17
	Secondary DNS server	
	Search domains 3	example.com
		One search domain per line
outing	IPv4 primery	192.168.249.1
	(Pv6-pateway	
dvanced settings	Consector control storether	
	Condeparts Crushs edit(()(s)	New Reno 🗸
	Maximum number of connections	11000

7. Verify that the DNS configuration for Default TCP/IP stack contains the desired new values.

Successfully updated configurati	ion for Default TCP/IP stack - dismiss						
Host Manage Monitor	Edit settings C Refresh H Default TCP/IP Key:	Actions stack defaultTcpipStack					₽
Storage 0							
Default TCP/IP stack	- Configuration		* Routing				
More networks	IPv6	Enabled	* IPv4				
	Congestion control algorithm	New Reno	Routing table	Network address ~	Prefix I ~	Gateway	Dev~
	Maximum connections	11000		0.0.0.0	0	192.168.249.1	vmk0
	VMKernel NICs	🗮 vmk3		192.168.249.0	24	0.0.0.0	vmk0
		📖 vmk0		192.168.250.0	26	0.0.0.0	vmk1
		vmk1		192.168.250.128	26	0.0.0.0	vmk3
		Min Vinic2		192.168.250.64	26	0.0.00	vmk2
	DHCP	Disabled	* IPv6				
	+ DNS configuration		10.4				
	Host name	vva1-host1	IPVo	Network address ~	Prefix I v	Gateway ~	Dev v
	Addresses	192 168 249 17		Default	64	Local subnet	100
	Domain name	ovamplo.com		Default	64	Local subnet	vmk2
	Content navite	evenine.weil		Default	64	Local subnet	vmk3

When finished, close the web browser.

Add Host 1 Back to VMware vCenter Inventory

To add host 1 back to the VMware vCenter inventory, perform the following procedures.

1. In the vSphere Client, right-click Cluster1 and select Add Hosts...



2. Enter the new fully qualified domain name, user name, and password, then select Next.

Add hosts	Add new and existing h	osts to your cluster		×			
1 Add hosts	New hosts (1) Existing hosts (0 f	rom 2)					
2 Host summary	Use the same credentials for all hosts						
2 Host summary	1 vva1-host1.example.com	root					
3 Ready to complete	IP address or FQDN	Username	Password				
			c				

3. Enter the following credentials.

Username: root

Password: <system-specific password>

4. A certificate alert is displayed for host 1. Select Ok.



5.	Confirm	the host	summary	information	and select Next.
----	---------	----------	---------	-------------	------------------

Add hosts	Host summary			×
1 Add hosts	Hostname / IP Address y ESX Version	Ŧ	Model	Ŧ
2 Host summary	Vva1-host1.example.com 6.7.0		Dell Inc. PowerEd	ige FC640
3 Ready to complete				
		CAN	ICEL B.	NEXT

6. Select Finish



Wait for all running tasks to complete. It might take several minutes for the system to complete all tasks.

Rename Host 2

To rename Host 2, repeat the procedures that are listed in the Rename Host 1 section.

Rebalance Virtual Machines across the Cluster

Remove Obsolete Information from NetSvcs

After you rename the cluster hosts, all VMs run on host 1.

If you want to separate applications for primary and secondary VMs, the cluster must be rebalanced manually.

After you rename the cluster hosts, Rockwell Automation recommends that you remove the original host name entries from the NetSvcs DNS configuration. To do so, perform the following steps.

 Connect to a terminal session on the NetSvcs VM, either through the VM remote console or through SSH.

Rockwell Automation recommends that you use SSH with an editor such as Microsoft[®] Visual Studio[®] Code so you can edit the DNS server configuration files offline and paste changes from the editor into the configuration file.

2. Once connected, edit the ra.conf file with the following command:

sudo nano /etc/unbound/local.d/ra.conf

[sysadmin@vva1-netsvcs ~]\$ sudo nano /etc/unbound/local.d/ra.conf

- 3. In the editor, remove the old records for forward and reverse entries.
- 4. If only the host name needs to be changed, remove the old local-zone section records.
- 5. If you change the domain name, the entire local-zone section for ra.internal can be removed.
- 6. To save the file, press CTRL-0 and then ENTER.
- 7. To exit the editor, press CTRL-X.
- 8. With the file updated, enter the following command:

sudo systemctl restart unbound

It can take several minutes to complete and does not return a confirmation or other information.

9. Once complete, verify the system status by entering the command:

systemctl status unbound

Look for active (running) status.



Final ra.conf

Following is an example of the ra.conf after the components have been renamed.

```
access-control: 192.168.249.17/24 allow
access-control: 192.168.249.49/25 allow
access-control: 169.254.50.194/16 allow access-control: 169.254.50.194/16 allow
access-control: 169.254.190/16 allow
access-control: 130.151.185.147/22 allow
access-control: 169.254.110.230/16 allow
access-control: 127.0.0.1/8 allow
unblock-lan-zones: yes
local-zone: example.com. transparent
   local-data: vval-npu.example.com. IN A 192.168.249.13
   local-data-ptr: 192.168.249.13 vval-npu.example.com
   local-data: vval-hostl.example.com. IN A 192.168.249.14
local-data-ptr: 192.168.249.14 vval-hostl.example.com
   local-data: vval-host2.example.com. IN A 192.168.249.15
   local-data-ptr: 192.168.249.15 vval-host2.example.com
   local-data: vval-witness.example.com. IN A 192.168.249.16
   local-data-ptr: 192.168.249.16 vval-witness.example.com
   local-data: vval-NetSvcs.example.com. IN A 192.168.249.17
   local-data-ptr: 192.168.249.17 vval-NetSvcs.example.com
   local-data: vval-vCenter.example.com. IN A 192.168.249.18
   local-data-ptr: 192.168.249.18 vval-vCenter.example.com
   local-data: vval-Support-Probe.example.com. IN A
   192.168.249.19
   local-data-ptr: 192.168.249.19 vval-Support-Probe.example.com
forward-zone:
   name: .
```

forward-addr: 192.168.249.1

Final steps

After you have updated the naming scheme, Rockwell Automation strongly recommends that you perform a controlled system shut down and restart after you follow the procedures that are outlined in chapter 5 of the <u>VersaVirtual User Manual</u> and the knowledge base <u>Answer 0A45441</u>. Performing the procedures that are outlined in these documents helps the VMware vCenter startup properly. Doing so also helps confirm that the newly deployed witness VM is added to the management node auto-start list.

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Technical Documentation Center	Quickly access and download technical specifications, installation instructions, and user manuals.	rok.auto/techdocs
Literature Library	Find installation instructions, manuals, brochures, and technical data publications.	<u>rok.auto/literature</u>
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